

# Contract Documents

For

## Duke Street Phase 2 Streetscape

~2014~



City of Beaufort

Beaufort County, South Carolina

**Andrews**  
**& Burgess Inc.**  
Engineering & Surveying

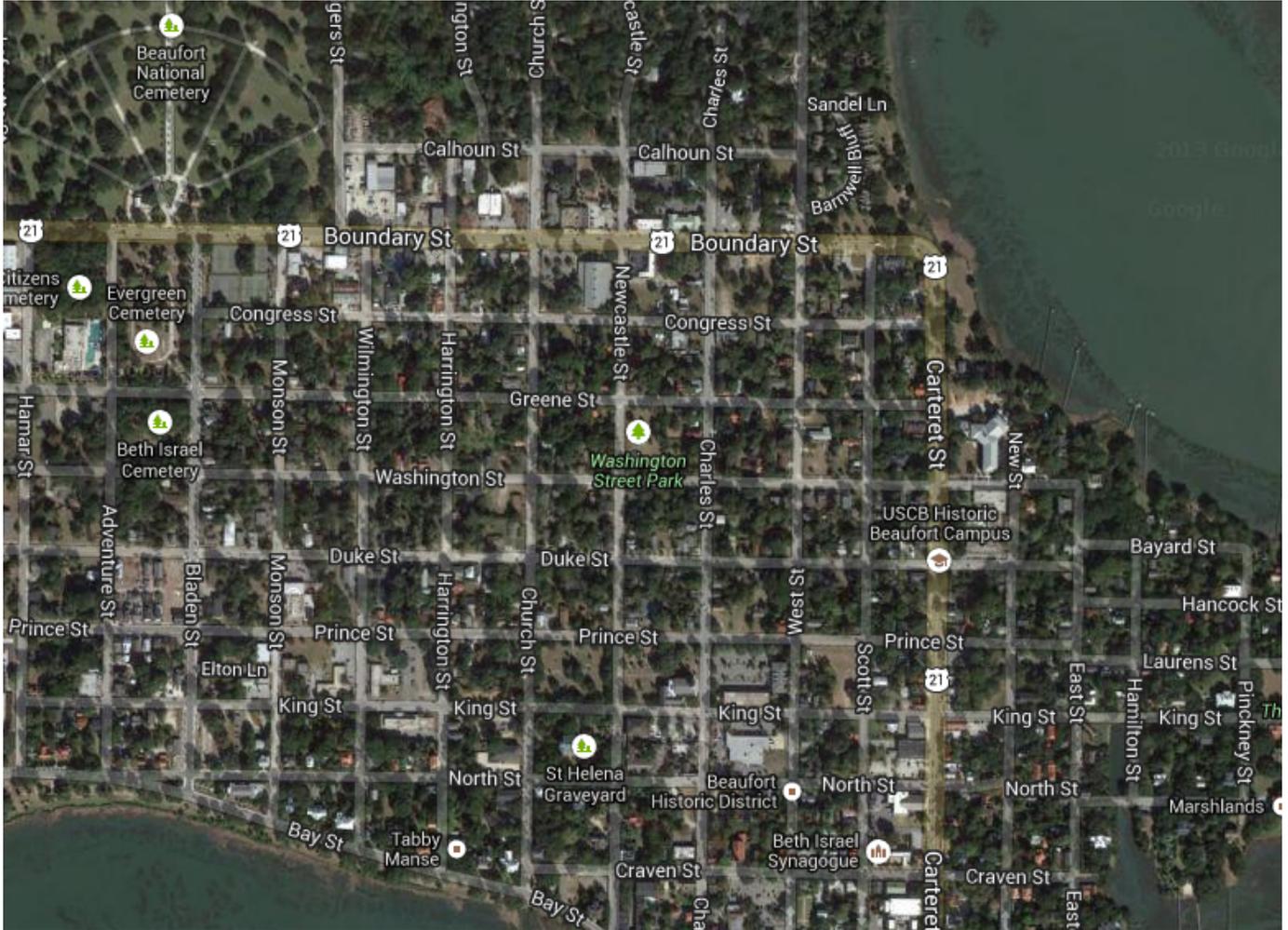
Steve Andrews, P.E.

June 26, 2014

## TABLE OF CONTENTS

<b>Table of Contents</b> .....	<b>Page i</b>
<b>Location Map</b> .....	<b>Page ii</b>
<b>Project Summary</b> .....	<b>Page III</b>
<b>Bid Proposal-Table of Contents</b> .....	<b>Page iv</b>
<b>Bid Proposal &amp; Bid Documents</b> .....	<b>Sections 1.0 to 1.10</b>
<b>Contract Documents</b> .....	<b>Sections 2.0 to 2.5</b>
<b>General Conditions</b> .....	<b>Section 3</b>
<b>City of Beaufort-General Conditions</b>	
<b>EJCDC-General Conditions</b>	
<b>Supplemental Conditions</b> .....	<b>Section 4</b>
<b>General Provisions</b> .....	<b>Section 5</b>
<b>Special Provisions</b> .....	<b>Section 6</b>
<b>CDBG Contract Special Provision</b>	
<b>General Special Provisions</b> .....	<b>Section 6.1</b>
<b>Technical Specifications</b> .....	<b>Section 7</b>

## LOCATION MAP



PROJECT SUMMARY  
DUKE STREET- PHASE 2 STREETScape

City of Beaufort, Beaufort, S.C.

The project site is Phase 2 of the Duke Street planned streetscape improvements, with the work of the contract occurring between Harrington Street and Charles Street.

The work of the contract will consist of demolishing the existing pavement/roadway surface and drainage system followed by the reconstruction of a new drainage system and a new roadway with onstreet parking, new sidewalks, refurbished intersections, utility relocation as necessary, the addition of street lighting and landscaping as shown on the Drawings. Duke Street will be resurfaced with consideration having been given to improving the drainage system by the installation of permeable pavers.

**SECTION ONE**  
**BID PROPOSAL-DOCUMENTS**  
**TABLE OF CONTENTS**

<b>Table of Contents.....</b>	<b>Sec. 1.0</b>
<b>Bid Invitation .....</b>	<b>Sec. 1.1</b>
<b>Instruction to Bidders.....</b>	<b>Sec. 1.2</b>
<b>Bid Proposal .....</b>	<b>Sec. 1.3</b>
<b>Bid Documents .....</b>	<b>Sec 1.3.1</b>
<b>Housing &amp; Urban Development-Section 3</b>	
<b>SC Illegal Immigration Reform Act</b>	
<b>Certification Regarding Disbarment etc.</b>	
<b>Bid Bond .....</b>	<b>Sec. 1.4</b>
<b>Certification by Contractor</b>	
<b>Non-Segregated Facilities.....</b>	<b>Sec. 1.5</b>
<b>Non Collusion Affidavit of Prime Bidder .....</b>	<b>Sec. 1.6</b>
<b>Bid Form.....</b>	<b>Sec. 1.7</b>
<b>Schedule of Prices.....</b>	<b>Sec. 1.8</b>
<b>Contractors Qualification Statement.....</b>	<b>Sec. 1.9</b>
<b>Determination of Prevailing Wages.....</b>	<b>Sec. 1.10</b>
<b>Federal Labor Standards Provisions .....</b>	
<b>Sec. 1.10.1</b>	
<b>Mitigation Measures.....</b>	
<b>Sec. 1.10.2</b>	

**BID INVITATION  
CITY OF BEAUFORT, SOUTH CAROLINA  
DUKE STREET- PHASE 2 STREETScape  
FOR BEAUFORT CITY COUNCIL**

Sealed bids will be received until **2:00 PM., August 5th, 2014** at which time responses to this request will be recorded in the presence of one or more witnesses in the City of Beaufort – City Hall Planning Conference Room, 1911 Boundary Street, Beaufort, South Carolina for:

**Duke Street - Phase 2 Streetscape**

**Bid documents are available on line at the City of Beaufort procurement page or hard copies are available for \$ 100.00 dollars a bid package by contacting Al Tempest at Andrews & Burgess, Inc. at (843) 379-2222 or [al@andrewsburgess.com](mailto:al@andrewsburgess.com) . There will be a \$30.00 overnight fee if the bid package is requested to be sent overnight. Fax or email questions/bid requests to Thomas East, City Accountant at (843) 525-7071 or [teast@cityofbeaufort.org](mailto:teast@cityofbeaufort.org) . The deadline to submit questions is July 24th, 2014 at 4 PM.**

City of Beaufort reserves the right to reject all proposals and to waive minor informalities and irregularities.

All Bids shall be accompanied by a Bid Bond drawn in favor of the City of Beaufort, Beaufort, South Carolina, in the amount of at least five percent (**5%**) of the bid for the complete work: such Bid Bond representing that the Bidder, if awarded a contract, will promptly enter into a contract and furnish Performance Bond and Payment Bond as provided by law and approved by the attorney for City of Beaufort, South Carolina. Each bond shall be equal to one hundred percent (**100%**) of the contract amount. The Bid Bond shall be forfeited to the **City Council of Beaufort, South Carolina** as liquidated damages if the Bidder fails to execute the contract and provide Performance and Payment Bonds within fourteen (**14**) days after being notified that he has been awarded the Contract.

All work performed for this project will be in accordance with the **South Carolina State Highway Division Standard specifications for Highway Construction Edition of 2007**, and any modifications identified in the bid documents.

The bidder shall be responsible for performing at least fifty percent (**50%**) of the work in this contract. The Bidder shall not subcontract, transfer, assign, or otherwise dispose of the contract or any portion thereof, without the written consent of the **City Manager**.

The successful bidder shall secure and pay for necessary approvals, permits, assessments, and changes required for the construction and installation of this project as required by local, state, and federal regulations. City permits shall be required as applicable. All subcontractors that are involved in the project, would have to obtain a City of Beaufort business license, including 1099 Contractors or Sub-contractors. Anyone who is not classified as a W-2 employee for the successful bidder must obtain a City of Beaufort business license.

Bidders must comply with Title VI of the Civil Rights Act of 1964, the Anti-Kickback Act, the Contract Work Hour Standard Act, and the National Occupational Safety and Health Act of 1970.

Bidders must certify that they do not and will not maintain or provide for their employees any facilities, which are segregated on the basis of race, color, creed, or national origin.

The City of Beaufort reserves the right to reject all Bids and waive any formalities. Any claims for cost incurred by any bidders in preparation of any part of, or total package for this project will not be handled for reimbursement by the City of Beaufort or their representatives.

The Bidder is required to submit only the Bid documents, which include:

- 1) Complete Bid Proposal Form, Section 1.2 through 1.9 (See Sec. 6.5 of Instructions to Bidders)
- 2) Bid Bond or Certified Check
- 3) Certification by Contractor RE: Non-Segregated Facilities
- 4) Non-Collusion Affidavit of Prime Bidder
- 5) Consent of Surety
- 6) Completed Schedule of Items, Section 1.8
- 7) List of all Subcontractors who will perform on the job. This includes anyone who is not a W2 employee for the Bidder including 1099 Subcontractors. List must include name, appropriate state license and city business license numbers. Bidder must complete the "Subcontractors" form found online under Exhibit "A".

The Bidding Documents consist of the following, including all addenda issued there with and forms referenced therein, in addition to the drawings:

- Section 1 - Bid Documents
- Section 2 - Contract
- Section 3 - General Conditions
- Section 4 - Supplemental Conditions
- Section 5 - General Provisions
- Section 6 - Special Provisions
- Section 7 - Specifications

Bidding Documents are open to the public at the **City of Beaufort-City Hall Planning Conference Room, 1911 Boundary Street, Beaufort, South Carolina.**

A complete set of plans and documents may be purchased for **\$100.00**. **An additional \$30.00 is required if requested to be sent overnight**, make check payable to:

.....  
**City Hall Finance Department  
1911 Boundary Street  
Beaufort, SC 29902**

**INSTRUCTIONS TO BIDDERS**

**Table of Contents**

<b><u>No.</u></b>	<b><u>Title</u></b>	<b><u>Page</u></b>
	Table of Contents-Instruction to Bidders .....	i
1.	Defined Terms .....	IB-1
2.	Contract Documents .....	IB-1
3.	Organization of Contract Documents.....	IB-1
4.	Physical Conditions.....	IB-2
5.	Schedule of Prices .....	IB-2
6.	Submission of Bids .....	IB-3
7.	Disposition of Bids .....	IB-3
8.	Award of Contract .....	IB-4
9.	Commencement of Contract Time.....	IB-4
10.	Contract Time.....	IB-4
11.	Damages.....	IB-4
12.	Retainage .....	IB-4
13.	Right to Protest.....	IB-5

## INSTRUCTIONS TO BIDDERS

### 1. DEFINED TERMS

Terms used in these Instructions to Bidders, which are defined in the General Conditions and Supplementary Conditions have the meanings assigned to them therein.

### 2. CONTRACT DOCUMENTS

2.1 Bidder should verify that the Contract Documents are complete in the number of documents as indicated by the List of Documents, and in the number of pages in each document.

2.2 Bidder must use a complete set of Contract Documents in preparing Bid; neither Owner nor Engineer assume any responsibility for errors or misinterpretations resulting from the use of an incomplete set of Contract Documents.

2.3 Bidder has the responsibility prior to submitting Bid to examine the Contract Documents thoroughly and notify the Engineer of all conflicts, errors or discrepancies, or of questions or meaning or intent. Bidder is encouraged to visit the construction site prior to submitting a Bid.

2.4 Addenda may be issued to modify the Contract Documents in response to notifications made by Bidders, or for other reasons. All addenda are available online and prospective bidders are encouraged to visit the City of Beaufort website for any issued addenda. The addenda can be found by clicking "Bid Opportunities" under quick links at <http://www.cityofbeaufort.org> or by contacting the City's Accountant, Thomas East, at 843-525-7071.

2.5 Bidders may contact the **City of Beaufort Accountant** at the location and during the hours given in the **Invitation to Bid** to verify the number, if any, of Addenda issued.

### 3. ORGANIZATION OF CONTRACT DOCUMENTS

3.1 The Bid form contains understandings and representations made by Bidder in submitting the Bid; in addition, the Schedule of Items is included.

3.2 The form of Notice of Award and Agreement, which may be executed by the Owner with the Successful Bidder, is incorporated in the Contract Documents.

3.3 The General Conditions incorporated in the Contract Documents are the **STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT** prepared by the Engineers' Joint Contract Documents Committee and approved and endorsed by The Associated General Contractors of America. Amendments or supplements to specific articles or paragraphs in the Standard General Conditions to be included herein are identified by a notation at the article or paragraph so amended or supplemented and the City of Beaufort General Conditions.

3.4 The actual amendments or supplements to the Standard General Conditions are made in the Supplementary Conditions by reference to the specific article or paragraph so amended or supplemented. The Supplementary Conditions may also contain additional paragraphs incorporating language required by South Carolina contract law.

3.5 The General Requirements of the Specifications contain additional amendments and supplements to the Standard General Conditions of the Construction Contract with regard to general and administrative matters, and also contain details for the Work of this Contract.

3.6 The Technical Requirements of the Specifications may cover a breakdown of the Goods and/or Service by Sections; solely for reference and payment, and not for dividing Goods and/or service among subcontractors or suppliers. Each section includes general information on the Work included, and method of payment. Items in the Technical Sections for which payment is to be made are listed in the Schedule of Items in the Bid Form.

3.7 The drawings are complementary to the Specifications to show size, form, location and arrangement of various elements of the Work.

3.8 Section 6.0 - Special Provisions may contain additional instruction, conditions or directions directly related to the contract or Work of the Contractor.

#### 4. PHYSICAL CONDITIONS

4.1 Paragraph 4.2 of the General Conditions set forth responsibilities for the adequacy of data regarding subsurface conditions and physical conditions and possible changes in the Contract Documents due to differing conditions. Reference is made to the General Requirements for identification of report(s) and drawing(s) on subsurface and physical conditions, which have been utilized by Engineer in preparation of the Contract Documents. Copies of reports and drawings listed in General Requirements that are NOT included with the Bidding Documents may be examined at the office of the Purchasing Director at the address and during hours set forth in the Invitation for Bid. The reports and drawings listed in the General Requirement are not part of the Contract Documents, but the technical data contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.2 of the General Conditions are identified and established in the General Requirements.

4.2 Paragraph 4.3 of the General Conditions indicates that information and data reflected in the Contract Documents with respect to Underground Facilities at or contiguous to the site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities or others, and Owner and Engineer shall not assume responsibility for the accuracy or completeness thereof.

4.3 Bidder, prior to submitting a Bid, may conduct at bidder's expense any additional examinations, investigations, explorations and tests pertaining to subsurface and physical conditions, and to Underground Facilities, which are deemed necessary by Bidder to determine an appropriate Bid for performing and furnishing the work in accordance with the Contract Document. Owner will provide Bidder with access to the site for the purpose set forth in this paragraph upon agreement of the Bidder to restore the site as nearly as possible to its original condition.

#### 5. SCHEDULE OF PRICES

Bidder, with regard to completing the Schedule of Items of the Bid Form, is advised as follows:

5.1 The Owner, a public body, is not exempt from South Carolina State Sales and Use Taxes and equipment to be incorporated in the Work, and such taxes shall be included in with price Bid.

5.2 The quantities indicated for Unit Price Work, if any, are estimates and not guaranteed and final payment will be based on actual quantities constructed.

5.3 The Agreement, if made, will be on the basis of materials and equipment indicated in the Drawings or specified in the Specifications without consideration of possible substitute items.

5.4 The lands upon which the Work are to be performed, rights-of-way and easements for access thereto and other lands designated for use by Contractor in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by Contractor.

5.5 The amount Bid for each item must be written in words where indicated; these written entries shall control with regard to price of the Bids received.

5.6 The Bidder shall be responsible for performing at least fifty percent (**50%**) of the work in this contract. The Bidder shall not subcontract, transfer, assign, or otherwise dispose of the contract or any portion thereof, without the written consent of the **City Manager**.

## 6. SUBMISSION OF BIDS

6.1 Bidder must provide all information requested in the Bid Form and in attachments thereto by appropriate entries handwritten in ink or typewritten.

6.2 Bidder must sign the Bid Form as follows:

(a) Proprietorship, signature shall be that of the Proprietor.

(b) Partnership, signatures shall be that of the person or persons authorized to sign and attest for the partnership.

(c) Corporation, signatures shall be that of the person or persons authorized to sign and attest for the corporation.

6.3 If Bidder is a joint venture set forth the full name of the identity or identities comprising the joint venture. Each joint venturer must sign in the manner indicated for the respective form of ownership as set forth in Paragraph 6.2 of these Instructions to Bidders.

6.4 Bidder must submit with the Bid Form a Bid Security made payable to the City of Beaufort in an amount of not less than five percent (5%) of the total amount indicated in the Bid Form, in the form of a certified or bank check or a Bid Bond issued by a surety authorized to do business in South Carolina.

6.5 Contract Documents with the exception of the Drawings should be returned intact with the completed Bid Form bound in place as originally received, the whole to constitute the Bid.

6.6 Bids including Bid Security and other required documents, shall be submitted at the time and place indicated in the advertisement for Bids and shall be enclosed in opaque sealed envelopes, marked with the title of the work and name and address of the Bidder. If the Bid is sent through the mail or other delivery system the sealed envelope shall be enclosed in a separate envelope with the notation "**BID ENCLOSED**" on the face of it.

6.7 Bids may be modified or withdrawn by a document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

## 7. DISPOSITION OF BIDS

7.1 **OWNER** any time prior to Bid opening may withdraw the advertisement for Bids and not accept Bids. Any Bid received under this circumstance will be returned, unopened to Bidder.

7.2 **OWNER** may open Bids and (unless obviously non-responsive) read aloud publicly.

7.3 **OWNER** will reject Bids other than the three (3) apparent lowest responsible bids and return Bid Security for rejected Bids within ten (10) business days after the date of Bid opening.

7.4 **OWNER** may hold the three (3) apparent lowest responsible Bids subject to acceptance for ninety (90) days after the day of the Bid opening; and the Bid security of these Bidders will be returned as follows: (1) to the unsuccessful Bidders within three (3) business days after a Notice of Award is made to Successful Bidder, and (2) to the Successful Bidder after the Agreement is executed and the required contract security furnished.

7.5 **OWNER**, in evaluating Bids, will consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, and of the data, as may be requested by the Bid Form.

7.6 **OWNER** reserves the right to reject any and all Bids, to waive any informalities and to reject nonconforming, non-responsive, unbalanced or conditional Bids.

7.7 **OWNER** may conduct reasonable investigations as deemed necessary to assist in the evaluation of Bids and to establish the responsibility, qualifications and financial ability of Bidders to perform and furnish the Work in accordance with the Contract Documents.

7.8 The Beaufort City Council reserves the right to reject all Bids and waive any formalities. Any claims for cost incurred by any bidders in preparation of any part of, or total package for this project will not be handled for reimbursement by the City of Beaufort or their representatives.

## 8. AWARD OF CONTRACT

8.1 **OWNER**, if the Contract is awarded, will award it to the lowest responsible Bidder. The lowest Bid will be determined based on the total of the Bid price for each item as indicated in words in the Bid Form. The written entries will control over numerical entries regardless of whether there are arithmetic discrepancies between the written amount and the numerical entries.

8.2 **OWNER** will give the Successful Bidder a Notice of Award within ninety (90) days after the day of the Bid opening, if the Contract is to be awarded.

8.3 **OWNER'S** Notice of Award to the Successful Bidder will be transmitted with the required number of unsigned counterparts of the Agreement.

8.4 Successful Bidder, within fourteen (**14**) days after receiving Notice of Award shall sign and deliver the required number of counterparts of the Agreement to Owner with the required Bond. Paragraph 5.1 of the General Conditions and the Supplementary Conditions set forth Owner's requirements as to performance and payment bonds.

8.5 Bidder, in submitting Bid, understands and agrees that the Bid security may be forfeited as liquidated damages, and not as a penalty, if the Bidder is determined to be Successful Bidder and thereafter fails to execute the Agreement and furnish the required Bonds within the stipulated time.

8.6 **OWNER**, within ten (**10**) days after receiving the Agreement and bonds, shall deliver one signed counterpart to Contractor, and thereby establish the effective Date of the Agreement.

8.7 The successful Bidder shall secure and pay for necessary approvals, permits, assessments, and changes required for the construction and installation of this project as required by local, state, and federal regulations. City permits shall be required as applicable. All subcontractors that is involved in the project, would have to obtain a City of Beaufort business license.

## 9. COMMENCEMENT OF CONTRACT TIME

9.1 **OWNER** may give **CONTRACTOR** a Notice to Proceed within thirty (**30**) days after the Effective Date of the Agreement, and indicate therein the day on which the Contract Time will commence to run.

## 10. CONTRACT TIME

See Paragraph 3 of Bid Form.

## 11. DAMAGES

See Paragraph 4 of Bid Form.

## 12. RETAINAGE

See Paragraph 5 of Bid Form.

### 13. RIGHT TO PROTEST

13.1 Any actual bidder who is aggrieved in connection with the award of a contract may protest to the **City Manager**. The protest shall be submitted in writing within fourteen (14) days of the Bid opening. The protest must be accompanied by a detailed statement indicating the reasons for such protest.

13.2 Authority to Resolve Protest. The **City Manager** shall have authority, prior to the commencement of an action in court concerning the controversy, to settle and resolve a protest of an actual aggrieved bidder, concerning the award of the contract.

13.3 Decision. If the protest is not resolved by mutual agreement, the City Manager shall issue a decision in writing within ten (**10**) days of receipt of the written protest. The decision shall:

- (a) State the reasons and describe the actions taken; and
- (b) Inform the protestant of its right to administrative review as provided in this Section.

13.4 Notice of Decision. A decision under Subsection (3) of the Instructions to Bidder shall be noticed by certified mail to the protestant and any other party intervening.

#### 13.5 Rights to Review

(a) Any person adversely affected by the decision appeals administratively within (**10**) days after receipt of decision to the **City Council** in accordance with this section.

(b) Any protest taken to **City Council** or court shall be subject to the protestant paying all of City of Beaufort administrative costs, attorney fees and court costs, when it is determined that the protest is without standing.

#### 13.6 Litigation

(a) Any litigation arising out of this Bid Award or subsequent contract or agreement shall be held only in a Circuit Court of Beaufort County, Beaufort, South Carolina and the fourteenth Judicial Circuit.

**BID PROPOSAL**

Proposal of \_\_\_\_\_(hereinafter called "Bidder") a contractor organized and existing under the laws of the State of \_\_\_\_\_, \*an individual, a corporation, Or a partnership doing business as \_\_\_\_\_.

TO: City of Beaufort  
(Hereinafter called "Owner")

Gentlemen:

The Bidder in compliance with your Invitation for Bid and all Bidding Documents for the construction of:

**Duke Street - Phase 2 Streetscape**

having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and supplies to construct the project in accordance with the contract documents, within the time set forth herein, and at the process stated below, proposed to enter into a contract with the City of Beaufort to provide the necessary machinery, tools, apparatus, all materials and labor, and other means of construction necessary to complete the Work. The undersigned proposes to furnish and construct the items listed in the attached Schedule of Items for the unit prices stated.

Bidder agrees that the cost of any work performed, materials furnished, services provided or expenses incurred, which are not specifically delineated in the Contract Documents, but which are incidental to the scope, intent, and completion of the Contract, shall be deemed to have been included in the prices bid for the various items scheduled.

**Start and Completion of Work**

The Bidder further proposes and agrees hereby to promptly commence the Work **with adequate force and equipment within ten (10)** calendar days from receipt of Notice to Proceed, or as may be specified by Special Provision, and to complete the Work within **150** consecutive calendar days from the Notice to Proceed date or the date Work begins, whichever comes first.

Bidder acknowledges receipt of the following addenda:

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

The undersigned further agrees that in case of failure on his part to execute said contract and bond, or provide satisfactory proof of carriage of the insurance required, within fourteen (14) calendar days after the award thereof, the Bid Bond or certified check accompanying his bid and the money payable thereon shall be forfeited to City of Beaufort as liquidated damages; otherwise, the check or Bond accompanying this proposal shall be returned to the Bidder.

**BID PROPOSAL**

The Bidder declares that he understands that the quantities shown on the proposal are subject to adjustment by either increase or decrease, and that should the quantities of any of the items of work be increased, the undersigned proposes to do the additional work at the unit prices stated herein; and should the quantities be decreased, he also understands that payment will be made on actual quantities at the unit price bid and will make no claim for anticipated profits for any decrease in the quantities, and that actual quantities will be determined upon completion of work, at which time adjustment will be made to the Contract amount by direct increase or decrease.

Attached hereto is a bid bond or certified check on the (Bank) of \_\_\_\_\_  
in the amount of \_\_\_\_\_, (five percent of Total  
Amount Bid).

The full name and residence of persons or parties interested in the foregoing bid as principals, are named as follows:

Beaufort County, South Carolina

Signed, sealed, and dated this \_\_\_\_ day of \_\_\_\_\_, 2014.

Bidder: \_\_\_\_\_  
(Company Name)

By: \_\_\_\_\_

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

Mailing Address:  
\_\_\_\_\_  
\_\_\_\_\_

## **Section 1.3.1**

### **BID DOCUMENTS**

#### **Duke Street- Phase 2 Streetscape**

- I. Housing & Urban Development-Section 3 Documents**
  - i. Section 3- Information Sheet**
  - ii. Section 3- Contractor's Self Certification**
  - iii. Section 3- Bidder's Contract/Subcontracts**
  - iv. Section 3- Bidder's Estimated New Hires**
  - v. Section 3- Contractor's Business Utilization Report**
  - vi. Section 3- Contractor's New Hire Report**
- II. SC Illegal Immigration Reform Act**
- III. Certification Regarding Disbarment etc.**

**I- Housing and Urban development –Section 3**

**Section 3 Information Sheet for Contractors/Businesses**

**What is Section 3?**

Section 3 is a provision of the Housing and Urban Development (HUD) Act of 1968 that helps foster local economic development, neighborhood economic improvement, and individual self-sufficiency. The Section 3 program requires that recipients of certain financial assistance, to the greatest extent feasible, provide job training, employment, and contracting opportunities for low-income residents in connection with projects and activities in their neighborhoods.

**Who are Section 3 residents?**

Section 3 residents are:

- Public housing residents or
- Persons who live in the area where an assisted project is located and who have a household income that falls below income limits.

**What is a Section 3 business concern?**

A business that:

- Is 51 percent or more owned by Section 3 residents;
- Employs Section 3 residents for at least 30 percent of its full-time, permanent staff; or
- Provides evidence of a commitment to subcontract to Section 3 business concerns, 25 percent or more of the dollar amount of the awarded contract.

**What types of economic opportunities should be made available under Section 3?**

- Job training
- Employment
- Contracts

**Examples of Opportunities include:**

<ul style="list-style-type: none"> <li>• Accounting</li> <li>• Architecture</li> <li>• Appliance repair</li> <li>• Bookkeeping</li> <li>• Bricklaying</li> <li>• Carpentry</li> <li>• Carpet Installation</li> <li>• Catering</li> <li>• Cement/Masonry</li> <li>• Computer/Information</li> <li>• Demolition</li> <li>• Drywall</li> </ul>	<ul style="list-style-type: none"> <li>• Electrical</li> <li>• Elevator Construction</li> <li>• Engineering</li> <li>• Fencing</li> <li>• Florists</li> <li>• Heating</li> <li>• Iron Works</li> <li>• Janitorial</li> <li>• Landscaping</li> <li>• Machine Operation</li> <li>• Manufacturing</li> </ul>	<ul style="list-style-type: none"> <li>• Marketing</li> <li>• Painting</li> <li>• Payroll Photography</li> <li>• Plastering</li> <li>• Plumbing</li> <li>• Printing Purchasing</li> <li>• Research</li> <li>• Surveying</li> <li>• Tile setting</li> <li>• Transportation</li> <li>• Word processing</li> </ul>
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### **Who receives priority under Section 3?**

For training and employment:

- Persons in public and assisted housing
- Persons in the area where the HUD financial assistance is spent
- Participants in HUD Youthbuild programs
- Homeless persons

For contracting:

- Businesses that meet the definition of a Section 3 business concern

### **How can businesses find Section 3 residents to work for them?**

Businesses can recruit Section 3 residents in public housing developments and in the neighborhoods where the HUD assistance is being spent. Effective ways of informing residents about available training and job opportunities are:

- Contacting resident organizations, local community development and employment agencies
- Distributing flyers
- Posting signs
- Placing ads in local newspapers

### **Are recipients, contractors, and subcontractors required to provide long-term employment opportunities, not simply seasonal or temporary employment?**

Recipients are required, to the greatest extent feasible, to provide all types of employment opportunities to low and very low-income persons, including permanent employment and long-term jobs.

Recipients and contractors are encouraged to have Section 3 residents make up at least 30 percent of their permanent, full-time staff.

A Section 3 resident who has been employed for 3 years may no longer be counted towards meeting the 30 percent requirement. This encourages recipients to continue hiring Section 3 residents when employment opportunities are available.

### **What if it appears an entity is not complying with Section 3?**

There is a complaint process. Section 3 residents, businesses, or a representative for either may file a complaint if it seems a recipient is violating Section 3 requirements are being on a HUD-funded project.

### **Will HUD require compliance?**

Yes. HUD monitors the performance of contractors, reviews annual reports from recipients, and investigates complaints. HUD also examines employment and contract records for evidence that recipients are training and employing Section 3 residents and awarding contracts to Section 3 businesses.

# Section 3 Business Self-Certification

## **BASIC INFORMATION**

1. Company Name: \_\_\_\_\_
2. Company Address: \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ County \_\_\_\_\_
3. Telephone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_  
Email address: \_\_\_\_\_
4. Contractor's License: Class A B C N/A License Number: \_\_\_\_\_
5. Business License \_\_\_\_\_ Number Federal ID Number \_\_\_\_\_
6. Type of Business: \_\_\_\_\_

## **TYPES OF SECTION 3 BUSINESS ENTERPRISES**

Please check "Yes" or "No". If you answer "YES" to one or more of the following questions, you may designate your company as a Section 3 Business Enterprise.

1. 51% or more of your business is owned by a Section 3 residents\*; or

Yes  No

*Attach list of Section 3 owners and income certifications*

2. At least 30% of your full time employees include persons that are currently Section 3 residents\*, or within three years of the date of first employment with the business concern were Section 3 residents; or

Yes  No

*Attach list of employees, Section 3 employees, and self certifications*

3. You can provide evidence, as required, of a commitment to subcontract in excess of 25% of the dollar award of all subcontracts to be awarded to business concerns that meet the qualifications in the above two paragraphs.

Yes  No

*Attach list of subcontracted businesses, types and amounts*

**VERIFICATION** - *The company hereby agrees to provide, upon request, documents verifying the information provided on this form.*

**I declare and affirm under penalty of law that the statements made herein are true and accurate to the best of my knowledge. I understand that falsifying information and incomplete statements will disqualify certification status.**

Signature of Business Owner or Authorized Representative: \_\_\_\_\_

Signature: Date: \_\_\_\_\_

Attested by: Date: \_\_\_\_\_

**\*Section 3 resident is:** 1) a public housing resident; or 2) a low- or very low-income person residing in the metropolitan area or Non-metropolitan County in which the Section 3 covered assistance is expended.



**subcontracts with businesses as defined in numbers 1  
and 2 above.**

---

Person Completing Form

---

Date

(The balance of this page has been intentionally left blank)

**BIDDER’S SECTION 3 ESTIMATED NEW HIRES**

<b>Job Category</b>	<b>Total Estimated Positions Needed for Project</b>	<b>No. Positions Occupied by Permanent Employees</b>	<b>Number of Positions Not Occupied</b>	<b>Number of Positions to be Filled with Section 3 Residents</b>
<b>Officer/Supervisors</b>				
<b>Professionals</b>				
<b>Technical</b>				
<b>Hsq. Sales/Rental Mgmt.</b>				
<b>Office/Clerical</b>				
<b>Service Workers</b>				
<b>Others</b>				
<b>TRADE:</b>				
<b>Journeyman</b>				
<b>Apprentices</b>				
<b>Trainees</b>				
<b>Others</b>				
<b>TRADE:</b>				
<b>Journeyman</b>				
<b>Apprentices</b>				
<b>Trainees</b>				
<b>Others</b>				

**Section 3 Resident**

**Individual residing in a public housing project or within the non-metropolitan county in which the project is located and whose income does not exceed 80% of the higher of the median income, adjusted by family size, for the county of residence or the non-metropolitan area of the state.**

\_\_\_\_\_  
 Company

\_\_\_\_\_  
 Project Name

\_\_\_\_\_  
 Project Number

\_\_\_\_\_  
 Person Completing Form

\_\_\_\_\_  
 Date

**CONTRACTOR’S SECTION 3 NEW HIRES REPORT**

<b>Job Category</b>	<b>Total Positions Employed on the Project</b>	<b>No. Positions Occupied by Permanent Employees</b>	<b>Number of Positions Not Occupied</b>	<b>Number of Positions Filled with Section 3 Residents</b>
<b>Officer/Supervisors</b>				
<b>Professionals</b>				
<b>Technical</b>				
<b>Hsq. Sales/Rental Mgmt.</b>				
<b>Office/Clerical</b>				
<b>Service Workers</b>				
<b>Others</b>				
<b>TRADE:</b>				
<b>Journeyman</b>				
<b>Apprentices</b>				
<b>Trainees</b>				
<b>Others</b>				
<b>TRADE:</b>				
<b>Journeyman</b>				
<b>Apprentices</b>				
<b>Trainees</b>				
<b>Others</b>				

**Section 3 Resident**

**Individual residing in a public housing project or within the non-metropolitan county in which the project is located and whose income does not exceed 80% of the higher of the median income, adjusted by family size, for the county of residence or the non-metropolitan area of the state.**

\_\_\_\_\_  
 Company

\_\_\_\_\_  
 Project Name

\_\_\_\_\_  
 Project Number

\_\_\_\_\_  
 Person Completing Form

\_\_\_\_\_  
 Date

## II S.C. Illegal Immigration Reform Act

### SOUTH CAROLINA ILLEGAL IMMIGRATION REFORM ACT

#### CONTRACTOR CERTIFICATION

In accordance with the requirements of the South Carolina Illegal Immigration Reform Act, \_\_\_\_\_ (“Contractor”) hereby certifies that it is currently in compliance with the requirements of Title 8, Chapter 14 of the S.C. Code Annotated and will remain in compliance with such requirements throughout the term of its contract with \_\_\_\_\_ (“Owner”).

Contractor hereby acknowledges that in order to comply with requirements of S.C. Code Annotated Section 8-14-20(B), it will:

1. Register and participate in the federal work authorization program (E-Verify) to verify the employment authorization of all new employees; and require agreement from its subcontractors, and through the subcontractors, the sub-subcontractors, to register and participate in the federal verification the employment authorization of all new employees.

OR

2. Employ only workers who:
  - a. Possess a valid South Carolina driver’s license or identification card issued by the South Carolina Department of Motor Vehicles; or
  - b. are eligible to obtain a South Carolina driver’s license or identification card in that they meet the requirements set forth in S.C. Code Annotated Sections 56-1-40 through 56-1-90; or
  - c. possess a valid driver’s license or identification card from another state where the license requirements are at least as strict as those in South Carolina, as determined by the South Carolina Department of Motor Vehicles

Contractor agrees to provide to Owner any documentation required to establish the applicability of the South Carolina Illegal Immigration Reform Act to the Contractor, subcontractor, or sub-subcontractor. Contractor further agrees that it will provide Owner with any documentation required to establish that the Contractor and any subcontractors or sub-subcontractors are in compliance with the requirements of Title 8, Chapter 14 of the S.C. Code Annotated.

Date: \_\_\_\_\_

By: \_\_\_\_\_

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

**BID BOND**

(Five Percent (5%) of Bid)

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned:

\_\_\_\_\_, as Principal, and \_\_\_\_\_, as Surety, are hereby held and firmly bound unto City of Beaufort, South Carolina as Owner in the penal sum of

Dollars (\$\_\_\_\_\_) for the payment of which, well and truly to be made, we hereby jointly and severally bid ourselves, our heirs, executors, administrators, successors, and assigns.

Signed this \_\_\_\_ day of \_\_\_\_\_, 2014.

The condition of the above obligation is such that whereas the Principal has submitted to City of Beaufort, South Carolina a certain bid attached hereto and hereby made a part hereof to enter into a contract in writing for the construction of:

**NOW, THEREFORE,**

- (a) If said bid shall be rejected or in the alternate,
- (b) If said bid shall be accepted and the Principal shall execute and deliver a Contract in the Form of Contract attached hereto (properly complete in accordance with said bid) and shall furnish a bond for his faithful performance of said Contract and for the payment of all persons performing labor and furnishing material in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be void, otherwise the same shall remain in force and effect, it being expressly understood and agreed that the liability of the surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the County may accept such bids, and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

\_\_\_\_\_(SEAL)  
Principal

By: \_\_\_\_\_

\_\_\_\_\_(SEAL)  
Surety

By: \_\_\_\_\_  
South Carolina Representative

**CERTIFICATION BY CONTRACTOR**

Regarding

**NON-SEGREGATED FACILITIES**

The Bidder certifies that he does not, and will not, provide and maintain segregated facilities for his employees at his establishments and, further that he does not, and will not, permit his employees to perform their services at those locations, under his control, where segregated facilities are provided and maintained. Segregated fountains, transportation, parking, entertainment, recreation, ad housing facilities; waiting, rest, wash, dressing, and locker room, and time clock, work, storage, restaurant, and other eating areas which are set apart in fact, or by explicit directive, habit, local custom, or otherwise, on the basis of color, creed, national origin, and race. The Bidder agrees that, except where he has obtained identical certifications from proposed subcontractors for specific time periods, he will obtain identical certifications from proposed subcontractors prior to the award of subcontractors exceeding **\$10,000.00** which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certifications in his files.

The Bidder agrees that a breach of this certification is a violation of the Equal Opportunity clause in this Contract. The penalty for making false statements is prescribed in 18 U.S.C. 1001.

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
Name and Title of Signer

\_\_\_\_\_  
Date

**NON-COLLUSION AFFIDAVIT OF PRIME BIDDER**

State of \_\_\_\_\_ )  
 ) ss.  
County of \_\_\_\_\_ )  
\_\_\_\_\_ being first duly sworn,  
deposes and says that:

- (1) He is \_\_\_\_\_ (Owner, Partner, Officer, Representative, or Agent) of the Bidder that has submitted the attached Bid;
- (2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;
- (3) Such Bid is genuine and is not a collusive or sham Bid;
- (4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including this affiant, has in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted to or refrain from bidding in connection with such Contract, or has in any collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of an other Bidder, or to fix any overhead, profit or cost element of the bid price or the Bid of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against City of Beaufort or any person interested in the proposed Contract; and,
- (5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agents, representative, owners, employees, or parties in interest, including this affiant.

(Signed) \_\_\_\_\_  
Name \_\_\_\_\_  
Title \_\_\_\_\_

Subscribed and Sworn to before me this  
\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_ (SEAL)  
\_\_\_\_\_ Title

My commission expires: \_\_\_\_\_

**BID FORM**

**THIS BID SUBMITTED TO:** \_\_\_\_\_

**TITLE OF WORK:** Duke Street - Phase 2 Streetscape

**LOCATION OF WORK:** City of Beaufort, Beaufort County, SC

1. **BIDDER** has examined all Contract Documents including Addenda.
2. **BIDDER** understands and accepts the terms and conditions of the Invitation to Bid, Instructions to Bidders, and all other Contract Documents.
3. In accordance with Paragraph 3.1 of the Agreement, the Work will be completed and ready for final payment within **150** days from the date when the Contract Time commences to run.
4. In accordance with Paragraph 3.2 of the Agreement, damages for delay are to be in accordance with the SC Division of Transportation, Standard Specifications for Highway Construction, Edition of 2000, and latest supplements, Section 180 "Prosecution and Progress".
5. In accordance with Paragraph 5.1 of the Agreement, progress payments will be made less retainage in an amount equal to ten percent (**10%**). If the Contractor is **50% complete** with the project and **on schedule**, the retainage shall be reduced to five percent (**5%**).
6. The Work shall be completed in accordance with the Schedule of Prices set forth by **BIDDERS** in Bid Form - Schedule of Items, which is attached hereto and made a part hereof.
7. **BIDDER** will, if this Bid is accepted by Owner, enter into the Agreement included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents.
8. **BIDDER** has completed the following additional documents, which are attached hereto and made a part hereof:
  - (a) **NON-COLLUSION AFFIDAVIT**
  - (b) **CONSENT OF SURETY**
9. **BIDDER** has included with this Bid Form a Bid security in an amount and under the terms and conditions indicated in the Instructions to Bidders.
10. **BIDDER** is organized under the laws of the State of \_\_\_\_\_ as  
a \_\_\_\_\_ (indicate proprietorship, partnership, or corporation) as follows:

Name (of business):

Address:

\_\_\_\_\_

Telephone: \_\_\_\_\_ FAX: \_\_\_\_\_

South Carolina Bidder's License No.

Local Contractor's License No: A Contractor must obtain a General Contractor's License and a Bidder's License from the S.C. Licensing Board For Contractors before a contract is awarded to him. Such licenses shall not be a prerequisite to the submission of a proposal.

Licensing Authority: \_\_\_\_\_

**BID FORM**

11. Communications concerning this Bid should be addressed to the attention of \_\_\_\_\_ as follows:

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

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ FAX: \_\_\_\_\_

**SIGNED BY:**

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
Name Printed

Title: \_\_\_\_\_ Date: \_\_\_\_\_, 2014

I, the above signed, certify that this Bid does not violate any Federal or State Antitrust Laws.  
\_\_\_\_\_(initial)

**CONSENT OF SURETY**

**OWNER:** \_\_\_\_\_

**TITLE OF WORK:** \_\_\_\_\_  
\_\_\_\_\_ (Complete above exactly as given in Invitation to Bid)

In consideration of the premises and of One Dollar (**\$1.00**), lawful money of the United States, it is in hand paid by the Contractor, the receipt whereof, is hereby acknowledged, the undersigned surety consents and agrees that if the contract, for which the preceding Bid is made, be awarded to the person or persons submitting the same as contracted, it will become bound as surety and guarantor for its faithful performance in an amount equal to one hundred percent (**100%**) of the Contract Price, and will execute as surety thereto when required to do so by the Owner, and if the said Contractor shall omit or refuse to execute such contract, if so awarded, it will pay without proof of notice and on demand to the Owner any increase between the sum of which the said Contractor would have been entitled upon the completion of the said Contract and the sum which the said Owner may be obligated to pay to another contractor to whom the contract may be afterwards awarded, the amount in such case to be determined by the bids plus the cost, if any, of re-advertising for bids for this work, less the amount of any certified check or bid bond payable and received.

In witness whereof, said surety has caused these presents to be signed and attested by a duly authorized officer and its corporate seal to be hereto affixed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

(A corporate acknowledgment and statement of authority to be here attached by the surety company).

(Surety Company) \_\_\_\_\_

**BY:**

(Surety Company) \_\_\_\_\_

(Attorney-In-Fact) \_\_\_\_\_

Attest: \_\_\_\_\_

**NON-COLLUSION AFFIDAVIT**

**OWNER:** \_\_\_\_\_

**TITLE OF WORK:** \_\_\_\_\_

(Complete above exactly as given in Invitation to Bid)

\_\_\_\_\_) )  
CITY OF \_\_\_\_\_)ss:  
\_\_\_\_\_)

I, \_\_\_\_\_ of the \_\_\_\_\_ of \_\_\_\_\_ in the  
County of \_\_\_\_\_ and the State of \_\_\_\_\_ full age,  
being duly sworn according to Law on my oath depose and say that:

I am \_\_\_\_\_ of the firm of \_\_\_\_\_

the Bidder making the Bid for the above named Work, and that I executed the said Bid with full authority so to do; that said Bidder has not, directly or indirectly, entered into any agreement, participating in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with the above named Work; and that all statements contained in said Bid and in the affidavit are true and correct, and made with full knowledge that the **OWNER** relies upon the truth of the statements contained in said Bid and in the statements contained in this affidavit in awarding the contract for the said Work.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by \_\_\_\_\_.

(Name of Contractor) \_\_\_\_\_

(Also type or print name of affiant under signature) \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

**NOTARY PUBLIC** of \_\_\_\_\_

\_\_\_\_\_

My commission expires \_\_\_\_\_, 20\_\_\_\_\_.

**DUKE STREET STREETScape PHASE 2 BID**



**6/25/2014**

**PAVING AND GRADING**

Item	Description	Quantity	Units	Unit Price	Total
1	Mobilization / Management/Traffic Control	1	LS		
2	Clearing & Grubbing	1	LS		
3	Layout and Record Drawings	1	LS		
4	Grading	1	LS		
5	Construction Entrance/Exit	1	EA		
6	Tree Protection Fence (Coord. Placement W/ City Arborist)	100	LF		
7	Inlet Sediment Trap	2	EA		
8	Curb Inlet Sediment Trap	16	EA		
9	Demo Curb & Gutter	2077	LF		
10	Demo Asphalt Paving	2976	SY		
11	Demo Concrete Sidewalk / Drives	968	SY		
12	Sawcut Asphalt	230	LF		
13	Remove Existing Storm Drain	870	LF		
14	Remove Curb Inlet/Junction Box	12	EA		
15	2" Asphalt Wearing Surface	2630	SY		
16	8" Dense Graded Aggregate Base Corse	2630	SY		
17	Brick Pavers (Complete)	888	SY		
18	Prime Coat	2630	SY		
19	Concrete Driveway	121	SY		
20	Concrete Sidewalk	1048	SY		
21	12"x12" Ribbon Curb	1448	LF		
22	18" Standard Curb and Gutter	2055	LF		
23	Handicap Ramp	14	EA		
24	Temporary Striping	1	LS		
25	24" Stop Bar Striping	88	LF		
26	Parking Striping (Tick Marks)	58	EA		
27	Pedestrian Xing Striping	1001	LF		
28	Double Yellow CL Striping with RRPMS	948	LF		
29	ADA Markings	1	LS		
30	Stop Sign	7	EA		
31	Adjust Existing Manholes & Valve Boxes	1	LS		

**STORM DRAINAGE SYSTEM**

Item	Description	Quantity	Units	Unit Price	Total
32	18"Ø RCP Drainage Pipe	1106	LF		
33	Flowable Fill (30' L x3' W x 4' deep) per crossing	147	CY		
34	4"Ø Perforated Subgrade Drain	1222	LF		
35	Catch Basin	16	EA		
36	Connect New Storm Pipe To Existing Structure	4	EA		
37	5' x 5' Junction Box (JB)	1	EA		
38	4' x 4' Junction Box	2	EA		
39	Connect New JB To Existing Storm Drain	1	EA		
40	Cut In New JB	0	EA		

Schedule of Items (Cont'd)					
<b>LANDSCAPING &amp; LIGHTING</b>					
Item	Description	Quantity	Units	Unit Price	Total
A	Irrigation	1	LS		
B	Irrigation sleeves-2" PVC Schd. 40	162	LF		
C	Irrigation sleeves-4" PVC Schd. 40	107	LF		
D	Arapaho Crape Myrtles (10' HT, Multi Trunk)	54	EA		
E	Drift Rose	80	EA		
F	Evergreen Giant Liroipe	5	EA		
G	Asiatic Jasmine	635	EA		
H	Grassing (Celebration Bermuda Sod)	7292	SF		
<b>UTILITY &amp; LIGHTING</b>					
Item	Description	Quantity	Units	Unit Price	Total
I	Conduit Telco -2" Sched. 40	980	LF		
J	Conduit-Street Lighting- 2" PVC Sched 40	1050	LF		
K	Conduit-Street Lighting- 3" PVC Sched 40	340	LF		
L	Lighting Hand holes	21	EA		
M	Light Pole Bases	12	EA		
N	Purchase Street Lights Poles and Fixtures From MFG.	12	EA		
O	<i>SCE&amp;G Install Poles and Fixtures</i>	1	LS		
P	<i>SCE&amp;G Relocate Overhead Power To Underground</i>	1	LS		
Q	<i>SCE&amp;G Remove/Relocate Gas Line</i>	1	LS		
R	<i>BJWSA Relocate Water Meters out of Sidewalks</i>	1	LS		
<b>TOTAL COST - DUKE STREET PORTION</b>					

**DUKE STREET STREETScape PHASE 2 BID ALTERNATE**



**6/25/2014**

**PAVING AND GRADING**

Item	Description	Quantity	Units	Unit Price	Total
1	Mobilization / Management/Traffic Control	0	LS		
2	Clearing & Grubbing	1	LS		
3	Layout and Record Drawings	1	LS		
4	Grading	1	LS		
5	Construction Entrance/Exit	0	EA		
6	Tree Protection Fence (Coord. Placement W/ City Arborist)	0	LF		
7	Inlet Sediment Trap	0	EA		
8	Curb Inlet Sediment Trap	2	EA		
9	Demo Curb & Gutter	194	LF		
10	Demo Asphalt Paving	213	SY		
11	Demo Concrete Sidewalk / Drives	21	SY		
12	Sawcut Asphalt	20	LF		
13	Remove Existing Storm Drain	0	LF		
14	Remove Curb Inlet/Junction Box	0	EA		
15	2" Asphalt Wearing Surface	216	SY		
16	8" Dense Graded Aggregate Base Corse	216	SY		
17	Brick Pavers (Complete)	102	SY		
18	Prime Coat	216	SY		
19	Concrete Driveway	11	SY		
20	Concrete Sidewalk	95	SY		
21	12"x12" Ribbon Curb	175	LF		
22	18" Standard Curb and Gutter	209	LF		
23	Handicap Ramp	0	EA		
24	Temporary Striping	1	LS		
25	24" Stop Bar Striping	0	LF		
26	Parking Striping (Tick Marks)	8	EA		
27	Pedestrian Xing Striping	0	LF		
28	Double Yellow CL Striping with RRPMS	97	LF		
29	ADA Markings	0	LS		
30	Stop Sign	1	EA		
31	Adjust Existing Manholes & Valve Boxes	0	LS		

**STORM DRAINAGE SYSTEM**

Item	Description	Quantity	Units	Unit Price	Total
32	18"Ø RCP Drainage Pipe	36	LF		
33	Flowable Fill (30' L x3' W x 4' deep) per crossing	13	CY		
34	4"Ø Perforated Subgrade Drain	90	LF		
35	Catch Basin	2	EA		
36	Connect New Storm Pipe To Existing Structure	0	EA		
37	5' x 5' Junction Box (JB)	0	EA		
38	4' x 4' Junction Box	0	EA		
39	Connect New JB To Existing Storm Drain	0	EA		
40	Cut In New JB	1	EA		

Schedule of Items (Cont'd)					
<b>LANDSCAPING &amp; LIGHTING</b>					
Item	Description	Quantity	Units	Unit Price	Total
A	Irrigation	1	LS		
B	Irrigation sleeves-2" PVC Schd. 40	18	LF		
C	Irrigation sleeves-4" PVC Schd. 40	0	LF		
D	Arapaho Crape Myrtles (10' HT, Multi Trunk)	0	EA		
E	Drift Rose	0	EA		
F	Evergreen Giant Liroipe	0	EA		
G	Asiatic Jasmine	0	EA		
H	Grassing (Celebration Bermuda Sod)	1501	SF		
<b>UTILITY &amp; LIGHTING</b>					
Item	Description	Quantity	Units	Unit Price	Total
I	Conduit Telco -2" Sched. 40	0	LF		
J	Conduit-Street Lighting- 2" PVC Sched 40	0	LF		
K	Conduit-Street Lighting- 3" PVC Sched 40	0	LF		
L	Lighting Hand holes	0	EA		
M	Light Pole Bases	0	EA		
N	Purchase Street Lights Poles and Fixtures From MFG.	0	EA		
O	<b>SCE&amp;G Install Poles and Fixtures</b>	0	LS		
P	<b>SCE&amp;G Relocate Overhead Power To Underground</b>	0	LS		
Q	<b>SCE&amp;G Remove/Relocate Gas Line</b>	0	LS		
R	<b>BJWSA Relocate Water Meters out of Sidewalks</b>	0	LS		
<b>TOTAL COST - CHURCH STREET PORTION</b>					

*For informal comparison of Bids to identify apparent lowest responsible Bids, and not as a formal part of the Bid, the Grand Total of Item Totals is for the following:*

**DUKE STREET**

Pages 1 & 2, Items 1 thru 40 and A thru N inclusive.....\$ \_\_\_\_\_.

**CHURCH STREET BID ALTERNATE**

Pages 3 & 4, Items 1 thru 40 and A thru N inclusive.....\$ \_\_\_\_\_.

**TOTAL COST (Duke Street and Church Street Combined).....\$ \_\_\_\_\_.**

**CONTRACTOR'S QUALIFICATION STATEMENT**

**A. GENERAL**

A.1 Submit to: \_\_\_\_\_

A.2 Name of Project (if applicable): \_\_\_\_\_

A.3 Contractor: \_\_\_\_\_

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

Mailing Address: \_\_\_\_\_

\_\_\_\_\_

Street Address: \_\_\_\_\_

\_\_\_\_\_

Telephone Number (including area code): \_\_\_\_\_

Facsimile Number (including area code): \_\_\_\_\_

Contact Person: \_\_\_\_\_

Contact Person's Telephone Number: \_\_\_\_\_

South Carolina Contractor's License Number: \_\_\_\_\_

**B. BUSINESS ORGANIZATION**

B.1 Check type of business organization:

Corporation \_\_\_\_\_ Partnership \_\_\_\_\_ Individual \_\_\_\_\_

Joint Venture \_\_\_\_\_ Other \_\_\_\_\_

B.2 If a corporation:

State of Incorporation: \_\_\_\_\_

If not incorporated in South Carolina,  
State Corporation Commission Registration Number: \_\_\_\_\_

Date of Incorporation: \_\_\_\_\_

Federal I.D. Number: \_\_\_\_\_

	<u>Name</u>	<u>Address</u>	<u>Phone No.</u>	<u>Years in Position</u>
Officers: President	_____	_____	_____	_____
Vice President (s)	_____	_____	_____	_____
Secretary	_____	_____	_____	_____
Treasurer	_____	_____	_____	_____

Are you a Subchapter S Corporation: Yes \_\_\_\_\_ No \_\_\_\_\_

	<u>Name</u>	<u>Address</u>	<u>Phone No.</u>
Subchapter S Shareholders:	_____	_____	_____
	_____	_____	_____
	_____	_____	_____

B.3 If a partnership:

Date of Organization: \_\_\_\_\_

Type of partnership: \_\_\_\_\_

List of General Partners:

<u>Name</u>	<u>Address &amp; Phone No.</u>	<u>Years as GP</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

B.4 If individually owned:

Name, address, and phone number of sole-proprietor:

\_\_\_\_\_

Years in business: \_\_\_\_\_

B.5 Have you ever operated under another name? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes,

All other business names and addresses of principal placed of business for each business.

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



C.6 Have any Performance or Payment Bond claims ever been paid by any surety on behalf of your organization?

Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, state the name of the project(s); the date; the name, address, telephone number, and contact person for the claimant; the surety satisfying the claim; the size of the claim; and the circumstances giving rise to the claim. (Provide attachments if necessary.)

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C.7 Have you ever arbitrated or litigated a claim with an Owner, Architect, or Engineer in the last five years?

Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, state the name of the project(s); the date; the name, address, telephone number, and contact person for the claimant; the surety satisfying the claim; the size of the claim; and the circumstances giving rise to the claim. (Provide attachments if necessary.)

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C.8 If you answer yes to the following, provide the name, address, telephone number, contact person, and circumstances relating to the question on a separate attachment.

Have you or any officer, partner, or owner of your organization, in any state or territory of the United States, or with respect to any agency of the Federal government:

- a. In the last five years, received any fines or citations for building code violations which were unrelated to design? Yes \_\_\_\_\_ No \_\_\_\_\_
- b. Ever been found to be guilty of charges relating to conflicts of interest: Yes \_\_\_\_\_ No \_\_\_\_\_
- c. Ever been convicted on charges related to any criminal activity relating to construction means, methods, or techniques; bidding or bid rigging; or bribery? Yes \_\_\_\_\_ No \_\_\_\_\_
- d. In the last five years, been found guilty of any minority contracting law violations? Yes \_\_\_\_\_ No \_\_\_\_\_
- e. In the last five years, pleaded no contest in any criminal proceeding related to contracting? Yes \_\_\_\_\_ No \_\_\_\_\_
- f. Ever been disbarred from doing Federal, state, or local government work for any reason? Yes \_\_\_\_\_ No \_\_\_\_\_
- g. Ever been terminated on a contract due to your default? Yes \_\_\_\_\_ No \_\_\_\_\_

h. In the last five years, paid liquidated damages for being late on a project? Yes\_\_\_\_\_ No\_\_\_\_\_

i. In the last five years, been subject to tax collection proceedings? Yes\_\_\_\_\_ No\_\_\_\_\_

j. In the last seven years, filed for bankruptcy? Yes\_\_\_\_\_ No\_\_\_\_\_

If the answer to j. was yes, under what chapter of bankruptcy did you file?

\_\_\_\_\_

If you filed under Chapter 11 Reorganization, how long did you operate under this status? \_\_\_\_\_

Are you operating under Chapter 11 status now? Yes\_\_\_\_\_ No\_\_\_\_\_

**D. SAFETY**

D.1 Have you, in the last three years, been cited for willful violations for failure to abate, or for repeated violations, by the United States Occupational Safety and Health Administration or by the South Carolina Occupational Safety and Health Administration or by any other governmental body?

Yes\_\_\_\_ No\_\_\_\_\_

If yes, state date, name, address, telephone number, and contact person for agency issuing citation and the nature of the violation. Also, advise the amount of fines paid, if any. (Provide attachments if necessary.)

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

D.2 Describe, in detail, the major components of your safety program. (Provide attachments if necessary.)

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

D.3 List your workman's compensation experience modifier for the last three years.

20\_\_\_\_ 20\_\_\_\_ 20\_\_\_\_

**E. KEY PERSONNEL AND PROJECTS**

E.1 Attach a resume for the designated employee registered with the State Board of Contractors. As a minimum, provide number of years in his/her field, number of years with your organization, education, registrations, awards, prior employment experience, etc.

E.2 Attach a list of all projects (not a selective sampling) over one million dollars in size, with location address, total dollar values, and dollar values completed by your organization's office which will handle this project that have been completed in the last five years. Provide the names, addresses, telephone numbers, and contacts for the Owner and Architect or Engineer for each project.

E.3 List three completed projects which are most relevant to the project(s) proposed by this Owner.

JOB #1      Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Size of Project: \_\_\_\_\_  
Owner's Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone Number: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Architect's/Engineer's Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone Number: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Final Contract Amount: \_\_\_\_\_  
Provide Project Description: \_\_\_\_\_

JOB #2      Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Size of Project: \_\_\_\_\_  
Owner's Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone Number: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Architect's/Engineer's Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone Number: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Final Contract Amount: \_\_\_\_\_  
Provide Project Description: \_\_\_\_\_

JOB #3      Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Size of Project: \_\_\_\_\_  
Owner's Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone Number: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Architect's/Engineer's Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone Number: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Final Contract Amount: \_\_\_\_\_  
Provide Project Description: \_\_\_\_\_

- E.4 Provide your gross annual receipts for the last three years.  
20\_\_ \_\_\_\_\_ 20\_\_ \_\_\_\_\_ 20\_\_ \_\_\_\_\_
- E.5 Attach a list of your current work in progress. As a minimum, provide project names and addresses, contract amounts, percentages complete, schedule status, and contact names for the Owners and Architects/Engineers.
- E.6 What qualifications relevant to the project(s) proposed by this Owner do you believe are unique to your organization? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- E.7 What is the range (dollar value) of project you prefer? \_\_\_\_\_  
\_\_\_\_\_
- E.8 a. State how your firm would staff this project.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- b. Provide resumes for key personnel to be assigned to this project. As a minimum, provide resumes for the project manager and site superintendent, including number of years experience in his/her field, number of years with your organization, education, registrations, award, prior employment experience, references, etc. (Provide attachments as necessary.)



**SECTION 1.10-BID DOCUMENTS**

General Decision Number: SC140047 01/03/2014 SC47

Superseded General Decision Number: SC20130047

State: South Carolina

Construction Type: Highway

Counties: Allendale, Bamberg, Barnwell, Beaufort, Colleton,  
 Georgetown, Hampton, Jasper, Newberry, Orangeburg and  
 Williamsburg Counties in South Carolina.

DOES NOT INCLUDE SAVANNAH RIVER SITE IN ALLENDALE AND BARNWELL COUNTIES

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Modification Number    Publication Date

0                    01/03/2014

SUSC2011-038 09/15/2011

	Rates	Fringes
CARPENTER (Form Work Only).....	\$ 14.47	
CEMENT MASON/CONCRETE FINISHER.....	\$ 14.11	
IRONWORKER, REINFORCING.....	\$ 15.64	
LABORER		
Asphalt, Includes Asphalt Distributor, Raker, Shoverler, and Spreader.....	\$ 10.96	
Colleton.....	\$ 10.16	
Common or General		
Beaufort.....	\$ 10.15	
Colleton.....	\$ 10.16	
Georgetown, Hampton, Jasper.....	\$ 10.07	
Newberry, Allendale, Bamberg, Barnwell.....	\$ 11.82	
Orangeburg.....	\$ 12.63	
Williamsburg.....	\$ 10.01	
Luteman.....	\$ 11.71	

Pipelayer.....	\$ 13.87
Traffic Control-Cone Setter	
Allendale, Bamber, Barnwell, Newberry, Orangeburg.....	\$ 12.98
Beaufort, Colleton, Georgetown, Hampton, Jasper, Williamsburg.....	\$ 12.84
Traffic Control-Flagger.....	\$ 11.68

POWER EQUIPMENT OPERATOR:

Backhoe/Excavator/Trackhoe

Allendale, Bamberg, Barnwell, Newberry, Orangeburg.....	\$ 17.56
Beaufort.....	\$ 15.20
Colleton.....	\$ 17.78
Georgetown, Hampton, Jasper, Williamsburg.....	\$ 17.23
Bulldozer.....	\$ 20.12
Crane.....	\$ 16.62
Grader/Blade.....	\$ 16.62
Loader (Front End).....	\$ 15.51
Mechanic.....	\$ 18.22
Milling Machine.....	\$ 18.83

Paver

Allendale, Bamberg, Barnwell, Newberry, Orangeburg, Williamsburg....	\$ 15.01
Beaufort.....	\$ 14.96
Colleton, Georgetown, Hampton, Jasper.....	\$ 13.67
Roller.....	\$ 12.76
Screed.....	\$ 13.01
Tractor.....	\$ 13.26

TRUCK DRIVER

Dump Truck.....	\$ 12.00
Lowboy Truck.....	\$ 14.43
Single Axle, Includes	
Pilot Car.....	\$ 12.04
Tractor Haul Truck.....	\$ 16.25

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses

(29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

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WAGE DETERMINATION APPEALS PROCESS

- 1.) Has there been an initial decision in the matter? This can be
  - \* an existing published wage determination
  - \* a survey underlying a wage determination
  - \* a Wage and Hour Division letter setting forth a position on a wage determination matter
  - \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional

Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

**SECTION 2  
CONTRACT DOCUMENTS  
TABLE OF CONTENTS**

Contract Documents - Table of Contents .....Sec 2.0

Contract.....Sec 2.1

Notice of Intent to Award .....Sec 2.1A

Notice of Award .....Sec 2.1B

Notice to Proceed.....Sec 2.1C

Change Order.....Sec 2.1D

Certificate of Acknowledgement.....Sec 2.1E

Certificate of Owner’s Attorney.....Sec 2.1F

100% Performance Bond.....Sec 2.2

100% Labor and Material Payment Bond .....Sec 2.3

NON-COLLUSION Affidavit of Subcontract.....Sec 2.4

Final Affidavit .....Sec 2.5

**STATE OF SOUTH CAROLINA  
COUNTY OF BEAUFORT, SOUTH CAROLINA**

**CITY OF BEAUFORT CONTRACT  
FOR  
DUKE STREET- PHASE 2 STREETScape**

**THIS AGREEMENT** made by and between City of Beaufort in Beaufort County, SC hereinafter called "**OWNER**" a contractor doing business as an individual, a partnership, or corporation of the County of **Beaufort** and state of **South Carolina**, hereinafter called "**CONTRACTOR**".

This **AGREEMENT** is made and executed in four (4) original copies on this \_\_\_\_\_ of \_\_\_\_\_ by and between the City of Beaufort and \_\_\_\_\_ for the term specified herein.

**WITNESSETH:** that for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the Owner and Contractor hereby agrees to commence and complete the construction described as follows: **Furnishing of all materials, labor and equipment for the complete construction of:**

**Duke Street-Phase 2 Streetscape**

hereinafter called the "Project", for the sum of \_\_\_\_\_ (\$ \_\_\_\_\_) as stated in the General Conditions, Supplemental Conditions, General Provisions, Special Provisions and Technical Specifications of the Contract, and at his/her/its/their own proper cost and expense to furnish all materials, supplies, machinery, equipment, tools superintendence, labor, insurance, bonds, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the proposal, the General Conditions, Special Provisions and Detailed Specifications of the Contract, the plans, which include all explanatory matter thereof, as prepared by the City of Beaufort here entitled the "Engineers", the specifications and contract documents as enumerated in Section 105.03 of the General Conditions, all of which are made a part hereof and collectively constitute the Contract.

The Contractor further proposes and agrees hereby to promptly commence the work with adequate force and equipment within ten (10) calendar days from receipt of Notice to Proceed, or as may be specified by Special Provision, and to complete the work within **150** calendar days from the Notice to Proceed date or the date work begins, whichever comes first.

**Article 1. CONTRACT TIME AND DAMAGES**

1.1 Contract Time. The Work required under the Contract Documents shall be completed and ready for final payment in accordance with Paragraph 14.13 of the General Conditions within **150** days from the date when the Contract Time commences to run as provided in Paragraph 2.3 of the General Conditions. This Contract Time is hereby made of the essence.

1.2 Damages. If the **CONTRACTOR** fails to have the work completed and ready for final payment on or before the Contract time specified in Article 1.1 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions, **OWNER** shall receive from **CONTRACTOR** a sum of money calculated according to Paragraph 3.2 of the Agreement, damages

for delay are to be in accordance with the SC Division of Transportation, Standard Specifications for Highway Construction, Edition of 2007, and latest supplements, Section 180 "Prosecution and Progress".

The above sum is agreed upon to include intangible losses suffered by **OWNER** for matters such as public health and welfare, and the like. It is mutually agreed between the parties that this sum of money shall not preclude the **OWNER** from instituting an action for actual damages above and beyond the sum set forth above.

If monies due or to become due to the **CONTRACTOR** exceed the sum as set forth above, said sum shall be deducted from monies due, or to become due to the **CONTRACTOR**. In case the sum as set forth above shall exceed the amount of all monies due or to become due, then **CONTRACTOR** or his surety shall pay the balance to the **OWNER**.

## Article 2. **CONTRACT PRICE**

2.1 **OWNER** shall pay **CONTRACTOR** for performance of the Work as Bid with any alternates authorized herein in accordance with the Contract Documents in current funds at the prices set forth in the Bid Form which is attached hereto made a part hereof; and in accordance with any amendments made to the Contract Documents subsequent to execution of this Agreement in accordance with Paragraph 3.4 of the General Conditions.

2.2 The Contract Price as shown in the Schedule of Items, Section 1.8 of the Bid Form is  
\_\_\_\_\_ (\$ \_\_\_\_\_)

## Article 3. **PAYMENT PROCEDURES**

**CONTRACTOR** shall submit applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by **ENGINEER** as provided in the General Conditions.

3.1 Progress Payments. **OWNER** shall make progress payments in accordance with **OWNER's** established payment procedures on the basis of **CONTRACTOR'S** Applications for Payment as recommended by **ENGINEER** during construction on the basis of the progress of the work. Progress payments may be made less retainage in an amount equal to:

Less the aggregate of payments previously made and less such amounts as **ENGINEER** shall determine or **OWNER** may withhold, in accordance with Paragraph 14.7 of the General Conditions.

3.2 Final Payment. Upon final completion and acceptance of the Work in accordance with Paragraph 14.13 of the General Conditions, **OWNER** shall pay the remainder of the Contract Price as recommended by **ENGINEER** as provided in said Paragraph 14.13.

## Article 4. **CONTRACTOR'S REPRESENTATIONS**

In order to induce **OWNER** to enter into this Agreement **CONTRACTOR** makes the following representations:

4.1 **CONTRACTOR** has familiarized himself with the nature and extent of the Contract Documents, Work, local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

4.2 **CONTRACTOR** has studied carefully all reports of exploration and test of subsurface conditions and drawings of physical conditions which are identified in the Supplementary Conditions as provided in Paragraph 4.2 of the General Conditions, and accepts the determination set forth in Paragraph SC-4.2 of the Supplementary Conditions of the extent of the technical data contained in such reports and drawings upon which **CONTRACTOR** is entitled to reply.

4.3 **CONTRACTOR** has obtained and carefully studied (**or assumes responsibility for obtaining and carefully studying**) all such examinations, investigations, explorations, tests, reports and studies (in addition to or to supplement those referred to in Paragraph 4.2 above) which pertain to the subsurface or physical conditions at or contiguous to the site or otherwise may affect the cost, progress, performance or furnishing of the Work as **CONTRACTOR** considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract time and in accordance with the other terms and conditions for the Contract Documents, including specifically the provisions of Paragraph 4.2 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports, studies or similar information or data are or will be required by **CONTRACTOR** for such purposes.

4.4 **CONTRACTOR** has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports, studies or similar information or data in respect to said Underground Facilities are or will be required by **CONTRACTOR** in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.3 of the General Conditions.

4.5 **CONTRACTOR** has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.

4.6 **CONTRACTOR** has given **ENGINEER** written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by **ENGINEER** is acceptable to **CONTRACTOR**.

#### Article 5. **CONTRACT DOCUMENTS**

5.1 The Contract Documents which comprise the entire Agreement between **OWNER** and **CONTRACTOR** concerning the Work consists of the following:

- Addenda Numbers \_\_\_\_\_ to \_\_\_\_\_ inclusive
- Advertisement for Bid
- Bid Documents. Sec 1.0 through Sec 1.10 inclusive
- Contract Documents
  - Sec 2.1 – Contract
  - Sec 2.1 a – Notice of Intent to Award
  - Sec 2.1 b – Notice of Award
  - Sec 2.1 b – Notice to Proceed
  - Sec 2.1 c – Change Order
  - Sec 2.1 d – Certificate of Acknowledgement

Article 5.1 (Cont'd)

- Sec 2.1 e – Certificate of Owner's Attorney
- Sec 2.2 - Construction Performance Bond
- Sec 2.3 - Labor & Material Payment Bond
- Sec 2.4 - Non Collusion Affidavit of Sub-Contractor
- Sec 2.5 - Final Affidavit

General Conditions

Supplemental Conditions

General Provisions

General Requirements, Part II - Schedule of Insurance Requirements

Special Provisions

Technical Specifications

Drawings, Bound Separately (if applicable)

5.2 The following which may be delivered or issued after the Effective Date of the Agreement and are not attached hereto: All Written Amendments and other documents amending, modifying, or supplementing the Contract Documents pursuant to Paragraphs 3.4 and 3.5 of the General Conditions.

5.3 The documents listed in Paragraph 5.1 above are attached to this Agreement (except as expressly noted otherwise above).

There are no Contract Documents other than those listed above in this Article 5. The Contract Documents may only be amended, modified or supplemented as provided in Paragraphs 3.4 and 3.5 of the General Conditions.

Article 6. **MISCELLANEOUS**

6.1 Terms used in this Agreement, which are defined in Article 1 of General Conditions will have the meanings indicated in the General Conditions.

6.2 No assignment by a party hereto of any right under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

6.3 **OWNER** and **CONTRACTOR** each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents.

The City of Beaufort agrees to pay the **CONTRACTOR** in current funds for the performance of the Contract subject to additions and deductions as provided in the General Conditions of the Contract, and to make payments on account thereof as provided in Section 109 of the State of South Carolina Highway Division, Standard Specifications for Highway Construction, 2000 Edition, as modified in the General Conditions and Special Provisions.

**IN WITNESS WHEREOF**, The parties to these presents have executed this Contract in four (4) counterparts, each of which shall be deemed an original.

Executed This \_\_\_\_ Day of \_\_\_\_\_, 20 \_\_\_\_.

BEAUFORT COUNTY  
BEAUFORT, SOUTH CAROLINA

CONTRACTOR

By \_\_\_\_\_  
Scott Dadson  
(City Manager)

By \_\_\_\_\_  
Signature

\_\_\_\_\_  
Name & Title, Typed or Printed

\_\_\_\_\_  
Name of Company Corp., etc.

\_\_\_\_\_  
Mailing Address

\_\_\_\_\_  
City, State and Zip Code

\_\_\_\_\_  
Area Code/Telephone Number

**OWNER'S WITNESSES:**

**CONTRACTOR'S WITNESSES:**

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

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

**NOTICE OF INTENT TO AWARD**

Dated: \_\_\_\_\_ Bid No. \_\_\_\_\_  
To: \_\_\_\_\_  
Address: \_\_\_\_\_  
Contract: \_\_\_\_\_  
Project: \_\_\_\_\_  
Owner's Project #: \_\_\_\_\_

You are hereby notified that your Bid dated \_\_\_\_\_ for the above Contract has been considered. You are the apparent Successful Bidder and it's the OWNER intent to enter into a contract with this bidder subject to contract reviews by the department of Commerce, Grants Administration.

The Contract Price of your Contract is

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_).

\_\_\_\_\_ copies of the proposed Contract Documents (except drawings) accompany this Notice of Intent to Award. \_\_\_\_\_ sets of Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within 15 days of the date you receive the Notice of Award.

1. Deliver to the OWNER \_\_\_\_\_ fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract security (Bonds) as specified in the Instructions to Bidders, Article 8, EJCDC General Conditions paragraph 5.01 and Supplementary Conditions paragraph SC-5.01

Failure to comply with these conditions within the time specified will entitle **OWNER** to consider your Bid in default, to annul this Notice of Award, and to declare your Bid Security forfeited.

Within ten days after you comply with the above conditions, **OWNER** will return to you one (1) fully executed counterpart of the Contract Documents.

\_\_\_\_\_  
(OWNER)

By: \_\_\_\_\_  
(AUTHORIZED SIGNATURE)

\_\_\_\_\_  
(Title)

**NOTICE OF AWARD**

Dated: \_\_\_\_\_ Bid No. \_\_\_\_\_

To: \_\_\_\_\_

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

Address: \_\_\_\_\_

Owner: **City of Beaufort**

Title of Work: **Duke Street- Phase 2 Streetscape**

Location: **Duke Street between Harrington Street and Charles Street**

You are hereby notified that your Bid for the above work has been accepted, and you are awarded a contract, per enclosed copy of Resolution of Award of Contract.

Four copies of the proposed Contract Documents accompany this Notice of Award.

You must comply with the following conditions, precedent within fifteen days of the date of this Notice of Award, this is by \_\_\_\_\_.

1. You must deliver to the **OWNER** four (4) fully executed counterparts of the Agreement, including the Contract Documents. The cover of the bound Contract Documents and the title sheet of the drawings must bear your authorized signature.
2. You must deliver with the executed Agreement, Construction Performance and Payment Bonds, as specified in the General Conditions (Paragraph 5.1) and Supplementary Conditions (Paragraph SC-5.1) in the form set forth in the Agreement.

Failure to comply with these conditions within the time specified will entitle **OWNER** to consider your bid abandoned, to annul this Notice of Award, and to declare your Bid Security forfeited.

Within ten days after you comply with the conditions mentioned above, **OWNER** will return to you one (1) fully signed counterpart of the Agreement with the Contract Documents attached.

You are advised that, in accordance with Paragraph 2.7 of the General Conditions, you will be required, following Notice to Proceed, to deliver certificates of insurance prior to starting any work at the site.

**OWNER: City of Beaufort**

BY: \_\_\_\_\_  
(Authorized Signature)

Title: City Manager

cc: Finance Manager

**NOTICE TO PROCEED**

TO: \_\_\_\_\_ DATE: \_\_\_\_\_

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

**PROJECT DESCRIPTION:**

**Duke Street- Phase 2 Streetscape**

You are hereby notified to commence WORK in accordance with the Agreement dated \_\_\_\_\_, 20 \_\_\_\_\_, and you are to complete the WORK within \_\_\_\_\_ consecutive working days thereafter. The date of completion of all WORK is therefore \_\_\_\_\_, 20 \_\_\_\_\_.

City of Beaufort  
OWNER

BY: \_\_\_\_\_

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

**ACCEPTANCE OF NOTICE**

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by:

\_\_\_\_\_ this the \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_

BY \_\_\_\_\_

TITLE \_\_\_\_\_

**CHANGE ORDER**

**Order No.** \_\_\_\_\_

**Date** \_\_\_\_\_

**Agreement Date** \_\_\_\_\_

**NAME OF PROJECT: Duke Street Phase 2**

**OWNER:** City of Beaufort

**CONTRACTOR:** \_\_\_\_\_

The following changes are hereby made to the **CONTRACT DOCUMENTS**:

Justification:

**CHANGE TO CONTRACT PRICE:**

Original CONTRACT PRICE: \$ \_\_\_\_\_

Current CONTRACT PRICE adjusted by previous CHANGE ORDER: \$ \_\_\_\_\_

The CONTRACT PRICE due to this CHANGE ORDER will be (increased)(decreased) by:  
\$ \_\_\_\_\_.

The new CONTRACT PRICE including this CHANGE ORDER will be: \$ \_\_\_\_\_.

**CHANGE TO CONTRACT TIME:**

The CURRENT CONTRACT TIME: \_\_\_\_\_ Days

The CONTRACT TIME will be (increased)(decreased) by \_\_\_\_\_ calendar days.  
The date for completion of all **WORK** will be \_\_\_\_\_ (Date).

**Approvals Required**

To be effective this Order must be approved by the Federal Agency if it changes the scope or objective of the PROJECT, or if it will increase the budgeted amounts of Federal funds needed to complete the PROJECT, or as may otherwise be required by the SUPPLEMENTAL GENERAL CONDITIONS.

Requested by: \_\_\_\_\_

Recommended by: \_\_\_\_\_

Ordered by: \_\_\_\_\_

Accepted by: \_\_\_\_\_

Federal Agency Approval (where applicable) \_\_\_\_\_

**CERTIFICATE OF ACKNOWLEDGEMENT OF CONTRACTOR IF A COPORATION  
FOR CONTRACT BONDS**

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

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

ON THIS \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ before me personally came \_\_\_\_\_, to me known, who being me duly sworn, did depose and say as follows:

That he resides at \_\_\_\_\_ and is the \_\_\_\_\_ of \_\_\_\_\_  
(Title of Officer) (Name of Corporation)

the Corporation described in and which executed the foregoing instrument that he knows the corporate seal of said Corporation; that the seal affixed to the foregoing instrument is such Corporate Seal and it was so affixed by order of the Board of Directors of said Corporation; and that by the like order he signed thereto his name and official designation.

By: \_\_\_\_\_

\_\_\_\_\_  
(Name and Title)

\_\_\_\_\_  
Notary Public (Seal)

My commission expires: \_\_\_\_\_

**CERTIFICATE OF OWNER’S ATTORNEY**

I, the undersigned, \_\_\_\_\_, the duly authorized and acting legal representative of \_\_\_\_\_ do hereby certify as follows:

I have examined the attached contract (s) and surety bonds and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions, and provisions thereof.

\_\_\_\_\_  
(Signed)

Date: \_\_\_\_\_

### 100% PERFORMANCE BOND

**KNOW ALL MEN BY THESE PRESENTS: THAT** \_\_\_\_\_ as Principal (hereinafter called Contractor), and \_\_\_\_\_ a corporation organized and existing under the laws of the State of \_\_\_\_\_, as Surety (hereinafter called Surety), are held and firmly bound unto the City of Beaufort, South Carolina, as obligee, hereinafter called Owner in the amount of \_\_\_\_\_ dollars (\$\_\_\_\_\_) for the payment whereof 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 \_\_\_\_\_, 20\_\_\_\_, entered into a contract with Owner for:

#### Duke Street- Phase 2 Streetscape

in accordance with drawings and specifications prepared by Beaufort County for the Owner, City of Beaufort, which contract is by reference made a part hereof and is hereinafter referred to as the Contract.

**NOW, THEREFORE**, the condition of this obligation is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void, otherwise it will remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the Owner.

Whenever Contractor shall be, and declared by Owner to be in default under the contract, the Owner having performed Owner's obligation thereunder, the Surety may promptly remedy the default, or shall promptly

1. Complete the contract in accordance with its terms and conditions; or,
2. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest bidder, or if the Owner elects, upon determination by the Owner and Surety jointly of the lowest responsible bidder, arrange for a Contract between such Bidder and the Owner, and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contract of Completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "Balance of the Contract Price", as used in this paragraph shall mean the total amount payable by Owner to contractor under the Contract and any amendments hereto, less the amount properly paid by Owner to Contractor.

No action can be instituted on this bond after one year from the completion of the Contract and the acceptance by the Owner of the work thereunder.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ in the presence of:

\_\_\_\_\_  
Principal

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

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Surety

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

\_\_\_\_\_  
Witness

**100% LABOR AND MATERIAL PAYMENT BOND**

**KNOW ALL MEN BY THESE PRESENTS:**

That \_\_\_\_\_ as Principal, hereinafter called Principal, and \_\_\_\_\_, of \_\_\_\_\_ a corporation organized and existing under the laws of the State of \_\_\_\_\_, as Surety, hereinafter called Surety, are held and firmly bound unto City of Beaufort, South Carolina as obligee herein below defined, in the amount of \_\_\_\_\_ dollars (\$ \_\_\_\_\_) for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrator, successors and assigns, jointly and severally, firmly by these presents.

**WHEREAS**, Principal has by written agreement dated \_\_\_\_\_, 20\_\_\_\_, entered into a Contract with Owner for:

**Duke Street- Phase 2 Streetscape**

in accordance with drawings and specifications prepared by Beaufort County for the (Owner) City of Beaufort, which contract is reference made a part hereof, and is hereafter referred to as the Contract.

**NOW, THEREFORE**, the condition of this obligation is such that if the Principal shall promptly make payment to all claimants as is herein below defined for all labor and materials used or reasonable required for use in the performance of the Contract, this obligation shall be void; otherwise, it shall remain in full force and effect subject, however to the following conditions:

1. A claimant is defined as one having a direct contact with the principal or with a subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heating oil, gasoline, telephone service, rental of equipment, or repair of equipment directly applicable to the Contract.
2. The above-named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant.
  - A. Unless claimant, other than one having a direct Contract with the Principal, shall have given written notice to any two of the following: the Principal, the Owner, or the Surety above-named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work for labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, Owner, or Surety, at any

**LABOR AND MATERIAL PAYMENT BOND**

3.A (Cont'd)

place where an office is regularly maintained for the transaction of business, or served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.

B. After one year from the completion of the Contract and the acceptance by Owner of the work thereunder, it being understand, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

C. Other than in a state court of competent jurisdiction in and for the Owner or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated and not elsewhere.

4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder inclusive of the payment by Surety or mechanics' liens, which may be filed of record against improvement, whether or not claim for the amount of such lien be presented under and against this bond.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Principal

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

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Surety

By: \_\_\_\_\_ (Seal)  
South Carolina Representative

\_\_\_\_\_  
Witness

This bond is issued simultaneously with Performance Bond in favor of the Owner.

**NONCOLLUSION AFFIDAVIT OF SUBCONTRACTOR**

State of \_\_\_\_\_ )  
 ) ss.  
County of \_\_\_\_\_ )

\_\_\_\_\_, being first duly sworn, deposes, and says that:

(1) He is \_\_\_\_\_ (Owner, Partner, Officer, Representative, or Agent) of \_\_\_\_\_, hereinafter referred to as the "Subcontractor";

(2) He is fully informed respecting the preparation and contents of the Subcontractor's Proposal submitted by the Subcontractor to \_\_\_\_\_, the Contractor for certain work in connection with the \_\_\_\_\_ Contract pertaining to the Project in Beaufort County, South Carolina;

(3) Such Subcontractor's Proposal is genuine and is not a collusive or sham Proposal;

(4) Neither the Subcontractor nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including this affiant has in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other Bidder, firm or person to submit a collusive or sham Proposal in connection with such Contract or has in any manner, directly or indirectly, sought by unlawful agreement or connivance with any other Bidder, firm, or person to fix the price or prices in said Subcontractor's Proposal, or to secure through collusion, conspiracy, connivance, or unlawful agreement any advantage against City of Beaufort or any person interested in the proposed Contract, and,

(5) The price or prices quoted in the Subcontractor's Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

Signed \_\_\_\_\_

\_\_\_\_\_  
Title

Subscribed and Sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_

**(SEAL)**

\_\_\_\_\_  
Title

My Commission Expires \_\_\_\_\_  
Date

**FINAL AFFIDAVIT**

**TO CITY OF BEAUFORT, SOUTH CAROLINA**

I, \_\_\_\_\_, hereby certify that all suppliers of materials, equipment and service, subcontractors, mechanics, and laborers employed by \_\_\_\_\_ or any of his subcontractors in connection with the construction of \_\_\_\_\_ at City of Beaufort have been paid and satisfied in full as of \_\_\_\_\_, 20\_\_\_\_, and that there are no outstanding obligations or claims of any kind for the payment of which City of Beaufort on the above named project might be liable, or subject to, in any lawful proceeding at law or in equity.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

Personally appeared before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.  
\_\_\_\_\_, who under oath deposes and says that he is  
\_\_\_\_\_ of the firm of \_\_\_\_\_

that he has read the above statement and that to the best of his knowledge and belief same is an exact true statement.

\_\_\_\_\_  
Notary Public

My Commission Expires

\_\_\_\_\_

**SECTION THREE**

**GENERAL CONDITIONS**

**DUKE STREET**

**PHASE 2 STREETScape**

**2014**

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly By



PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
*a practice division of the*  
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

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AMERICAN COUNCIL OF ENGINEERING COMPANIES

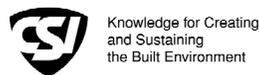
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Construction Specifications Institute

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**TABLE OF CONTENTS**

Page

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY .....	6
1.01 <i>Defined Terms</i> .....	6
1.02 <i>Terminology</i> .....	8
ARTICLE 2 - PRELIMINARY MATTERS .....	9
2.01 <i>Delivery of Bonds and Evidence of Insurance</i> .....	9
2.02 <i>Copies of Documents</i> .....	9
2.03 <i>Commencement of Contract Times; Notice to Proceed</i> .....	9
2.04 <i>Starting the Work</i> .....	9
2.05 <i>Before Starting Construction</i> .....	9
2.06 <i>Preconstruction Conference</i> .....	9
2.07 <i>Initial Acceptance of Schedules</i> .....	9
ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE .....	10
3.01 <i>Intent</i> .....	10
3.02 <i>Reference Standards</i> .....	10
3.03 <i>Reporting and Resolving Discrepancies</i> .....	10
3.04 <i>Amending and Supplementing Contract Documents</i> .....	11
3.05 <i>Reuse of Documents</i> .....	11
3.06 <i>Electronic Data</i> .....	11
ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS .....	11
4.01 <i>Availability of Lands</i> .....	11
4.02 <i>Subsurface and Physical Conditions</i> .....	12
4.03 <i>Differing Subsurface or Physical Conditions</i> .....	12
4.04 <i>Underground Facilities</i> .....	13
4.05 <i>Reference Points</i> .....	13
4.06 <i>Hazardous Environmental Condition at Site</i> .....	13
ARTICLE 5 - BONDS AND INSURANCE .....	14
5.01 <i>Performance, Payment, and Other Bonds</i> .....	14
5.02 <i>Licensed Sureties and Insurers</i> .....	15
5.03 <i>Certificates of Insurance</i> .....	15
5.04 <i>Contractor's Liability Insurance</i> .....	15
5.05 <i>Owner's Liability Insurance</i> .....	16
5.06 <i>Property Insurance</i> .....	16
5.07 <i>Waiver of Rights</i> .....	17
5.08 <i>Receipt and Application of Insurance Proceeds</i> .....	17
5.09 <i>Acceptance of Bonds and Insurance; Option to Replace</i> .....	17
5.10 <i>Partial Utilization, Acknowledgment of Property Insurer</i> .....	18
ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES .....	18
6.01 <i>Supervision and Superintendence</i> .....	18
6.02 <i>Labor; Working Hours</i> .....	18
6.03 <i>Services, Materials, and Equipment</i> .....	18
6.04 <i>Progress Schedule</i> .....	18
6.05 <i>Substitutes and "Or-Equals"</i> .....	19
6.06 <i>Concerning Subcontractors, Suppliers, and Others</i> .....	20
6.07 <i>Patent Fees and Royalties</i> .....	21
6.08 <i>Permits</i> .....	21
6.09 <i>Laws and Regulations</i> .....	21
6.10 <i>Taxes</i> .....	22
6.11 <i>Use of Site and Other Areas</i> .....	22
6.12 <i>Record Documents</i> .....	22
6.13 <i>Safety and Protection</i> .....	22
6.14 <i>Safety Representative</i> .....	23
6.15 <i>Hazard Communication Programs</i> .....	23

6.16	<i>Emergencies</i> .....	23
6.17	<i>Shop Drawings and Samples</i> .....	23
6.18	<i>Continuing the Work</i> .....	24
6.19	<i>Contractor's General Warranty and Guarantee</i> .....	24
6.20	<i>Indemnification</i> .....	24
6.21	<i>Delegation of Professional Design Services</i> .....	25
ARTICLE 7 - OTHER WORK AT THE SITE .....		25
7.01	<i>Related Work at Site</i> .....	25
7.02	<i>Coordination</i> .....	26
7.03	<i>Legal Relationships</i> .....	26
ARTICLE 8 - OWNER'S RESPONSIBILITIES .....		26
8.01	<i>Communications to Contractor</i> .....	26
8.02	<i>Replacement of Engineer</i> .....	26
8.03	<i>Furnish Data</i> .....	26
8.04	<i>Pay When Due</i> .....	26
8.05	<i>Lands and Easements; Reports and Tests</i> .....	26
8.06	<i>Insurance</i> .....	26
8.07	<i>Change Orders</i> .....	26
8.08	<i>Inspections, Tests, and Approvals</i> .....	26
8.09	<i>Limitations on Owner's Responsibilities</i> .....	27
8.10	<i>Undisclosed Hazardous Environmental Condition</i> .....	27
8.11	<i>Evidence of Financial Arrangements</i> .....	27
ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION.....		27
9.01	<i>Owner's Representative</i> .....	27
9.02	<i>Visits to Site</i> .....	27
9.03	<i>Project Representative</i> .....	27
9.04	<i>Authorized Variations in Work</i> .....	27
9.05	<i>Rejecting Defective Work</i> .....	27
9.06	<i>Shop Drawings, Change Orders and Payments</i> .....	28
9.07	<i>Determinations for Unit Price Work</i> .....	28
9.08	<i>Decisions on Requirements of Contract Documents and Acceptability of Work</i> .....	28
9.09	<i>Limitations on Engineer's Authority and Responsibilities</i> .....	28
ARTICLE 10 - CHANGES IN THE WORK; CLAIMS .....		28
10.01	<i>Authorized Changes in the Work</i> .....	28
10.02	<i>Unauthorized Changes in the Work</i> .....	29
10.03	<i>Execution of Change Orders</i> .....	29
10.04	<i>Notification to Surety</i> .....	29
10.05	<i>Claims</i> .....	29
ARTICLE 11 - COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK.....		30
11.01	<i>Cost of the Work</i> .....	30
11.02	<i>Allowances</i> .....	31
11.03	<i>Unit Price Work</i> .....	31
ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES.....		32
12.01	<i>Change of Contract Price</i> .....	32
12.02	<i>Change of Contract Times</i> .....	33
12.03	<i>Delays</i> .....	33
ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK.....		33
13.01	<i>Notice of Defects</i> .....	33
13.02	<i>Access to Work</i> .....	33
13.03	<i>Tests and Inspections</i> .....	33
13.04	<i>Uncovering Work</i> .....	34
13.05	<i>Owner May Stop the Work</i> .....	34
13.06	<i>Correction or Removal of Defective Work</i> .....	34
13.07	<i>Correction Period</i> .....	34
13.08	<i>Acceptance of Defective Work</i> .....	35
13.09	<i>Owner May Correct Defective Work</i> .....	35
ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION .....		36
14.01	<i>Schedule of Values</i> .....	36
14.02	<i>Progress Payments</i> .....	36
14.03	<i>Contractor's Warranty of Title</i> .....	37
14.04	<i>Substantial Completion</i> .....	37

14.05	<i>Partial Utilization</i> .....	38
14.06	<i>Final Inspection</i> .....	38
14.07	<i>Final Payment</i> .....	38
14.08	<i>Final Completion Delayed</i> .....	39
14.09	<i>Waiver of Claims</i> .....	39
ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION .....		39
15.01	<i>Owner May Suspend Work</i> .....	39
15.02	<i>Owner May Terminate for Cause</i> .....	39
15.03	<i>Owner May Terminate For Convenience</i> .....	40
15.04	<i>Contractor May Stop Work or Terminate</i> .....	40
ARTICLE 16 - DISPUTE RESOLUTION .....		41
16.01	<i>Methods and Procedures</i> .....	41
ARTICLE 17 - MISCELLANEOUS .....		41
17.01	<i>Giving Notice</i> .....	41
17.02	<i>Computation of Times</i> .....	41
17.03	<i>Cumulative Remedies</i> .....	41
17.04	<i>Survival of Obligations</i> .....	41
17.05	<i>Controlling Law</i> .....	41
17.06	<i>Headings</i> .....	41

## GENERAL CONDITIONS

### ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

---

#### 1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*--The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*--The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order*--A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*-- Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*--The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*--The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*--See Paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *Engineer*--The individual or entity named as such in the Agreement.

20. *Field Order*--A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

22. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

23. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

24. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*--The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *Notice to Proceed*--A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. *Owner*--The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*--Polychlorinated biphenyls.

31. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

32. *Progress Schedule*--A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

35. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. *Related Entity* -- An officer, director, partner, employee, agent, consultant, or subcontractor.

37. *Resident Project Representative*--The authorized representative of Engineer who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Schedule of Submittals*--A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

40. *Schedule of Values*--A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

41. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

42. *Site*--Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

43. *Specifications*--That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain

administrative requirements and procedural matters applicable thereto.

44. *Subcontractor*--An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

45. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

46. *Successful Bidder*--The Bidder submitting a responsive Bid to whom Owner makes an award.

47. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

48. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

49. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

50. *Unit Price Work*--Work to be paid for on the basis of unit prices.

51. *Work*--The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

52. *Work Change Directive*--A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times

but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

## 1.02 Terminology

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

### B. Intent of Certain Terms or Adjectives

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

### C. Day

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

### D. Defective

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

- a. does not conform to the Contract Documents, or
- b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or
- c. has been damaged prior to Engineer's - recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

*E. Furnish, Install, Perform, Provide*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

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2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement

or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule; indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

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3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or

responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of, their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work

(unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

### 3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;

2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or

3. Engineer's written interpretation or clarification.

### 3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or

2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaption by Engineer.

B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

### 3.06 *Electronic Data*

A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's

sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party..

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

## ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

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### 4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

#### 4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

#### 4.03 *Differing Subsurface or Physical Conditions*

A. *Notice*: If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review*: After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

#### C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

#### 4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

#### B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will

promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

#### 4.05 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

#### 4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to

entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06. G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 5 - BONDS AND INSURANCE

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### 5.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified

in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

#### 5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

#### 5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

#### 5.04 *Contractor's Liability Insurance*

A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection

from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.

a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

#### 5.05 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

#### 5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, (other than caused by flood) and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any

deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

#### 5.07 *Waiver of Rights*

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

#### 5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order .

B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

#### 5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract

Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

#### 5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

## ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

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#### 6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or

received from the superintendent shall be binding on Contractor.

#### 6.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

#### 6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

#### 6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

#### 6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole,

3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times, and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

#### 2. Substitute Items

a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) perform adequately the functions and achieve the results called for by the general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;

b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

3) will identify:

a) all variations of the proposed substitute item from that specified, and

b) available engineering, sales, maintenance, repair, and replacement services;

4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change,

*B. Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

*C. Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

*D. Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

*E. Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract

Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

*F. Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

#### 6.06 Concerning Subcontractors, Suppliers, and Others

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor

2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual

or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

#### 6.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

#### 6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

#### 6.09 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

## 6.10 Taxes

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

## 6.11 Use of Site and Other Areas

### A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

*B. Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

*C. Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

*D. Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

## 6.12 Record Documents

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

## 6.13 Safety and Protection

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Draw-

ings or Specifications or to the acts or omissions of Owner or Engineer or , or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

#### 6.14 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

#### 6.15 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

#### 6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### 6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

##### 1. Shop Drawings

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples*: Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals , any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

##### C. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and

d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents

with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

#### *D. Engineer's Review*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

#### *E. Resubmittal Procedures*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

#### *6.18 Continuing the Work*

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or

disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

#### *6.19 Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

#### *6.20 Indemnification*

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or

arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

#### 6.21 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal

shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

## ARTICLE 7 - OTHER WORK AT THE SITE

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### 7.01 *Related Work at Site*

A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and
2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and

properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

#### 7.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
2. the specific matters to be covered by such authority and responsibility will be itemized; and
3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

#### 7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.

C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

## ARTICLE 8 - OWNER'S RESPONSIBILITIES

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### 8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

### 8.02 *Replacement of Engineer*

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

### 8.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

### 8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

### 8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

### 8.06 *Insurance*

A. Owner's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

### 8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

### 8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

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9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep

Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show

partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to, the Resident Project Representative, if any, and assistants, if any.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

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10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall

promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

#### 10.02 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

#### 10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

#### 10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any bond to be given to a surety, the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

#### 10.05 *Claims*

A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim, shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part,

2. approve the Claim, or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

## ARTICLE 11 - COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

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### 11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and

Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have

resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expresses, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

**B. Costs Excluded:** The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

**C. Contractor's Fee:** When all the Work is performed on the basis of cost-plus, Contractor's fee shall

be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

**D. Documentation:** Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

## 11.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

### B. Cash Allowances

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

### C. Contingency Allowance

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

## 11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

## ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

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### 12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an

allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

### 12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted

by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

### 12.03 *Delays*

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

## ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

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### 13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

### 13.02 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

### 13.03 *Tests and Inspections*

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and

3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to

be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

#### 13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

#### 13.05 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

#### 13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

#### 13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
2. correct such defective Work; or
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications .

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

#### 13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

#### 13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

### ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

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#### 14.01 *Schedule of Values*

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress

payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

#### 14.02 *Progress Payments*

##### A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

##### B. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

a. to supervise, direct, or control the Work, or

b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent

inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Change Orders;
- c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
- d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

*C. Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

*D. Reduction in Payment*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

- a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
- b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
- c. there are other items entitling Owner to a set-off against the amount recommended; or
- d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

*14.03 Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

*14.04 Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, , Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial

Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

#### 14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

#### 14.06 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals

that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 14.07 *Final Payment*

##### A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;

b. consent of the surety, if any, to final payment;

c. a list of all Claims against Owner that Contractor believes are unsettled; and

d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

##### B. *Engineer's Review of Application and Acceptance*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations

under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

### C. Payment Becomes Due

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and , will be paid by Owner to Contractor.

#### 14.08 *Final Completion Delayed*

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

#### 14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance

with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

## ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

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### 15.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

### 15.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety ) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

#### 15.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

#### 15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

## ARTICLE 16 - DISPUTE RESOLUTION

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### 16.01 *Methods and Procedures*

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be

governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or

2. agrees with the other party to submit the Claim to another dispute resolution process, or

3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

## ARTICLE 17 - MISCELLANEOUS

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### 17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

### 17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

### 17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

### 17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

### 17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

### 17.06 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

**SUPPLEMENTARY CONDITIONS**

**SECTION 4**

Table of Contents

<u>Article Number</u>	<u>Title</u>	<u>Page</u>
Introductory Statement		1

**PART I**

**AMENDMENTS AND SUPPLEMENTS TO GENERAL CONDITIONS**

SC-1	Defined Terms	2
------	---------------	---

**PART II**

**STATUTORY CONTRACT REQUIREMENTS**

SC-2	. Amendments to EJCDC General Conditions	2-5
SC-3	. Amendments to SCDOT Standard Specifications	5-10

**EXHIBITS**

Exhibit SC-A A Listing of Duties, Responsibilities and Limitations of Authority of The Resident Project Representatives (4 pages)

**SUPPLEMENTARY CONDITIONS**

Introductory Statement

Part I of these Supplementary Conditions amend or supplement the General Conditions and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

**PART I**  
**AMENDMENTS AND SUPPLEMENTS**  
**TO GENERAL CONDITIONS**

SC-1 Defined Terms

The terms used in these Supplementary Conditions which are defined in the General Conditions have the meanings assigned to them in the General Conditions.

Add the following terms to the definitions in Article 1 of the General Conditions:

"Bidder" - One who submits a Bid directly to Owner, as distinct from a sub-bidder, who submits a

bid to a Bidder.

"General Conditions" - Refers to Standard General Conditions of the Construction Contract, as

included in the Contract Documents.

"General Requirements" - Refers to the General Requirements of the Specifications which is the part of the Contract Documents which amends or supplements the General Conditions with regard to Specifications.

"Successful Bidder" - The lowest, qualified, responsible and responsive Bidder to whom Owner makes an award.

**SC-2 PART 2- AMENDMENTS - The following Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC-2002 Edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.**

**The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings indicated herewithin, which are applicable to both the singular and plural thereof.**

SC-2.05 B-4 Add the Following new paragraph to the General Conditions after paragraph 2.05 B-3:

4. "a schedule of anticipated shipping dates for materials and equipment. It is intended that equipment and materials be so scheduled as to arrive at the job site just prior to time for installation to prevent excessive material on hand for inventory and necessity for extensive storage facilities at the job site."

SC-4.02 A& B No reports of exploration and testing of subsurface conditions and or drawings of physical conditions related to subsurface conditions have been done or exist for Phase 2 of the Duke Street Streetscape.

SC-5.04 B-8 Add the following new paragraph to the General Conditions after paragraph 5.04 B-7:

8. Bonding surety shall be located in the state in which the work is being performed. The Contractor shall not commence work under this contract until he has obtained all the insurance required under this paragraph and such insurance has been accepted by the Owner, nor shall the Contractor allow any Subcontractor to commence work on his subcontract until the insurance required of the Subcontractor has been so obtained and accepted.

- a. Compensation and Employer's Liability Insurance: The Contractor shall take out and maintain during the life of the contract the statutory Worker's Compensation and Employer's Liability Insurance for all of his employees to be engaged in work

on the project under the contract and, in case such work is sublet, the Contractor should require the Subcontractor similarly to provide Worker's Compensation and Employer's Liability Insurance for all the latter's employees to be engaged in such work.

- b. Bodily Injury Liability and Property Damage Liability Insurance: The Contractor shall take out and maintain during the life of the contract Bodily Injury Liability and Property Damage Liability Insurance to protect him and any subcontractor performing work covered by the contract from claims for damages or personal injury, including accidental death, as well as from claims for property damage, which may arise from operation under the contract, whether such operations be by himself or by a Subcontractor or by anyone directly or indirectly employed by either of them and the amount of such insurance should be not less than:
- (1) Bodily Injury Liability Insurance, in an amount not less than \$1,000,000.00 for injuries, including wrongful death to any one person and subject to the same limit for each person in an amount not less than \$500,000.00 on account of one accident.
  - (2) Property Damage Insurance in an amount not less than \$500,000.00 for damages on account of any one accident, and in an amount not less than \$1,000,000.00 for damages on account of all accidents.
- c. Builder's Risk Insurance (Fire and Extended Coverage): The Contractor shall have adequate fire and standard extended coverage, with a company or companies acceptable to the Owner, in force on the project.  
The provisions with respect to Builder's Risk Insurance shall in no way relieve the Contractor of his obligation of completing the work covered by the Contract.
- d. Proof of Carriage of Insurance: The Contractor shall furnish the Owner with certificates showing the type, amount, class of operations, effective dates and date of expiration of policies. Such certificates shall contain substantially the following statement: "The insurance covered by this certification shall not be canceled or materially altered, except after 10 days written notice has been received by the Owner."

SC-6.08 Add the following:

The Contractor shall not proceed until all encroachment permits, curb cut permits, highway crossing permits, and railroad crossing permits have been secured. Contact Owner to ascertain status of permits.

SC-6.09 D Add a new paragraph after paragraph 6.09 C of the General Conditions which is to read as follows:

- D. The Contractor shall comply with the Department of Labor Safety and Health Regulations for Construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91-596) and under Section 107 of the Contract Work and Safety Standards Act (PL 91-54). The regulations are administered by the Department of Labor and the Contractor shall allow access to the project to personnel from that Department.

The Bidder's attention is directed to the fact that all applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout and they will be deemed to be included in the contract the same as though herein written in full.

The Contractor shall keep himself fully informed of all laws, ordinances and regulations of Federal, State, City and County, in any manner affecting those

engaged or employed in the work, or the materials used in the work, or in any way affecting the conduct of the work, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over same. He shall at all times, observe and comply with all such existing and future laws, ordinances, and regulations.”

SC-6.12 B Add a new paragraph after paragraph 6.12 A of the General Conditions which is to read as follows:

B. Record Data Drawings:

1. The Contractor shall keep accurate, legible records of the locations, types, and sizes of sanitary sewage lines, service laterals, manholes, cleanouts, water lines, fittings, valves, hydrants, drainage pipes, drainage structures and other related work performed under this project. On a set of project prints provided by the Owner, the Contractor shall prepare a set of “record” drawings from the data stated above. The horizontal locations of all portions of items installed on this project shall be accurately tied down to features that are physical and visible, such as property corner markers and/or permanent type structures. Invert and frame elevations of all manholes, storm sewers and structures, sanitary sewers and lift stations shall be clearly indicated. These “record” drawings shall be kept clean and dry and maintained in a current state with the progress of the work. If at any time, a copy of this plan or portion of it is requested by the Owner, such copy shall be made available within 24 hours after the request is made.
2. Before final acceptance of the completed installation and before final payment by the owner, the Contractor shall deliver to the Engineer a completed set of “record” drawings accurately depicting the data described above. The horizontal and vertical locations as shown on the “record” drawings for the items installed on this project shall be certified by a licensed surveyor, registered in the State in which the project is located. “Record” Drawings shall be submitted on a marked up set of project construction prints and electronically in an AutoCADD compatible format. When completed, Engineer shall have the Contractor’s licensed surveyor stamp and sign the original “record” drawings before making copies available to the Owner or other appropriate agencies.

SC-6.13 A-3 Add the following:

“Safely guard the Owner’s property from damages or injury or loss in connection with this contract. Contractor shall at all times guard and protect his own work and all materials of every description both before and after being used in the work, and all work performed by him.

Contractor shall provide any enclosing or special protection from weather deemed necessary by Engineer without additional cost to the Owner. Partial payments under the contract will not relieve the Contractor from responsibility for protection of material, work, and property. “

SC-9.02 C Add a new paragraph after paragraph 9.02 B of the General Conditions which is to read as follows:

“C. If at any time before the commencement or during the progress of the work, tools, plant or equipment appear to the Engineer to be insufficient inefficient, or inappropriate to secure the quality of the work required or the proper rate of progress, the Engineer may order the Contractor to increase their efficiency, to improve their character, to augment their number, or to substitute new tools, plant or equipment as the case may be, and the Contractor must conform to such order; but a failure of the Engineer to demand such increase or efficiency, number, or improvements, shall not relieve the Contractor of his obligation to secure the quality

of work and the rate of progress necessary to complete the work within the time required by his contract to the satisfaction of the Owner.”

SC-9.06 Add the following sentence at the end of paragraph 9.06 of the General Conditions:

“Owner and Engineer have the right to reject defective materials. Defective materials shall not be used in the work.”

SC-13.03 A Add the following sentences to paragraph 13.03 A of the General Conditions:

“The Contractor will be required to maintain all work in a condition acceptable to the Engineer for a 30-day operating period after the same has been completed as a whole, and the Engineer has notified the Contractor in writing that the work has been finished to his satisfaction. The Contractor shall give the Project Engineer or Project Representative a minimum of 48 hour notice for all required observations and tests.”

**SC-3                    PART 3- AMENDMENTS - MODIFICATION OF STANDARD SPECIFICATIONS OF THE STATE OF SOUTH CAROLINA HIGHWAY DEPARTMENT**

**SECTION 101    DEFINITIONS AND TERMS**

Section 101.04 - Award

Delete Reference to the Director & substitute the following in its place:

City of Beaufort Project Engineer

Section 101.09 - Change Order

Add the following at the end of last sentence:

A Change Order shall be considered executable only after being approved & signed by the City Manager.

Section 101.11 - Commission

Delete as written and substitute the following:

City Council of Beaufort County, or City

Section 101.12 - Construction Estimate

Add the following at the end of the last sentence:

The Construction Estimate shall be prepared by the Project Engineer with Quantities mutually agreed upon by the City and the Contractor.

Section 101.19 - City

Delete as written & substitute the following:

City Party of the first part to the Contract Owner, City Council of Beaufort County.

Section 101.22 - Department

Delete as written & substitute the following:

City of Beaufort Public Works Department

Section 101.23 – Director

Delete as written and substitute the following:

City Manager

Section 101.24 - Engineer

Delete as written & substitute the following:

City of Beaufort Project Engineer, acting directly or through his/her duly authorized representative, such representative acting within the scope of particular duties assigned to him/her and of the authority given him/her.

Section 101.27

Add the following after existing reference to the State Engineer:  
or City of Beaufort Project Engineer.

Section 101.46 - Proposal

Here and in all other referred instances as referenced to, shall also be known as the Bid Documents, Sections 1.0 - 1.10.

Section 101.47 - Proposal Form

As referred to, shall be known as the Bid Documents, Sections 1.0 - 1.10.

Section 101.61 - Special Provisions

Delete reference to "Proposal Form and Contract". Substitute in their place "Contract Documents".

Section 101.74 - Supplemental Agreement

Add the following sentence - A Supplemental Agreement shall be deemed executable only after being approved and signed by the City Manager.

Section 101.83 - Work, The

Add the following sentence. It shall also where applicable, have the definition, meaning and intent as implied in the Technical Specifications Subsection A - General.

**SECTION 102 BIDDING REQUIREMENTS & CONDITIONS**

Section 102.10

Delete as written and substitute as follows:

No proposal will be considered unless accompanied by a Bid Bond on City's form, in the amount of 5% of the submitted bid, written by a company licensed for surety in the State of South Carolina and assigned a rating of "A" or better by the A.M. Best Company on its most recent *Bests Insurance Report*. The proposal bond shall be made payable to the Beaufort County Treasurer.

Section 102.11

Delete as written and substitute as follows:

Each proposal shall be submitted in a plain business sized envelope (9" x 12"). The envelope shall be marked correctly & clearly as to its contents indicating the following:

Name & address of the Bidder, project number (per Bid Documents), addressed to the City of Beaufort City Manager's Office, 302 Carteret Street Beaufort, SC 29902. Be addressed as above. In order to be considered, all proposals sent by mail must be received by the City Manager's Office prior to the time specified in the Notice to Contractors. Proposals received after the time for opening of Bids will be returned to the Bidder unopened.

**SECTION 103 AWARD & EXECUTION OF CONTRACT**

Section 103.01

Delete reference to "the Director" & substitute the following in its place:  
City Manager

Section 103.02

Revise reference to "30 calendar days" to read: ninety (90) calendar days".

Section 103.03

Delete this section in its entirety.

Section 103.04

Delete in its entirety and refer to Section 7.4 of the Instruction to Bidders.

Section 103.05

Delete reference to "The Department" in the statement ending: of the Department and substitute in its place: City of Beaufort. Change surety company rating to "A".

Section 103.06

Delete reference to "20 calendar days" and substitute in its place:  
Ten (10) business days.

Section 103.07

Delete reference to "The Department" and substitute in its place:  
City of Beaufort.

Section 103.08

Delete in entirety and see General Conditions for Insurance Requirements.

Section 103.09

Delete in entirety and see General Conditions.

Section 103.10

Delete in entirety and see General Conditions.

Section 103.11

Delete in entirety and see General Conditions.

**SECTION 104 SCOPE OF WORK**

Section 104.01

Delete in entirety and see General Conditions

Section 104.02

Delete in entirety and see General Conditions

Section 104.03

Delete in entirety and see General Conditions

Section 104.04

Delete in entirety and see General Conditions

Section 104.05

Delete in entirety and see General Conditions

Section 105.08

Delete in entirety and substitute in its place:

**Section 105.08 Survey and Construction Stakeout Controls.**

**1.0 SCOPE**

1.1 This section covers the field surveying, staking, and maintenance of the same as necessary to properly complete the construction as proposed. The Contractor shall furnish all labor, materials, equipment, etc. necessary to properly do the work.

**2.0 GENERAL**

2.1 Horizontal and vertical control points are identified on the Construction Drawings. The Contractor shall use these control points with Construction Drawings to construct the system accurately. The Contractor shall be responsible for all necessary surveying and construction stake out work and shall use a South Carolina Registered Land Surveyor to do this work. When requested, the Registered Land Surveyor shall certify to the Contractor, the Engineer, and the Owner that the project has been properly surveyed and staked out. When requested, during construction, the surveyor shall check and certify as to the accuracy of the construction.

**3.0 ALIGNMENT AND ELEVATION CHECKS**

3.1 Alignment and elevations shall be checked frequently and stakes shall be maintained throughout the project as needed to complete the construction accurately. It is to be understood that the Contractor has the responsibility to check and maintain and errors greater than allowable shall be corrected at the Contractor's expense to the satisfaction of the Owner and the Engineer before any related construction can continue. Vertical elevations shall be constructed within  $\pm 0.03$  feet of proposed elevations. Grades shall be as specified, within limits allowed the Engineer. Horizontal dimensions of critical items shall be within  $\pm 0.1$  feet of those proposed. Locations of noncritical structures, roads, piping, etc. shall be within  $\pm 0.5$  feet of those proposed, unless otherwise allowed by the Owner or the Engineer. The Contractor shall submit copies of his actual field measurements to the Owner's representative on a daily basis.

3.2 The Contractor shall make checks on the elevation of the ends of each pipe joint, all manhole inverts, etc., to verify that the systems are being constructed according to the Drawings. A laser may be used, but elevation checks with a surveyor's level and rod must also be made on sewer lines.

**4.0 RECORD DRAWINGS**

4.1 The Contractor shall maintain a master set of record drawings that show all changes and deviations from the original drawings. The markups shall be made as the changes occur. Near the conclusion of the project, these master record drawings shall be completed and submitted to the Engineer.

**SECTION 105 CONTROL OF WORK**

Section 105.04

Delete the reference to "In the event of any discrepancy, "; instead substitute the following: Plans shall be considered as an incorporated function of the Technical Specifications. In the event of any discrepancy, Special Provisions shall govern over the Technical Specifications, and Supplemental specifications shall govern over the SCDOT Standard Specifications for Highway Construction.

Section 105.05

Delete the following reference: District Engineering Administrator or Bridge Engineer - Construction as applicable & substitute the following: Engineer (City of Beaufort).

Section 105.09

Add the following: and as described in Exhibit SC-A contain herein elsewhere.

Section 105.11

Delete the first sentence, from the third paragraph as written & substitute the following:

Where horizontal baseline control & a benchmark are necessary, no work shall be done without this horizontal control or benchmark having been given by the engineer, unless approved in writing.

**SECTION 106 CONTROL OF MATERIAL**

Section 106.11

Revise the second paragraph; second, third & fourth sentences to read as follows:

The contractor shall furnish the necessary equipment & operator from a licensed professional company for drilling test holes at locations & to depths designated by the engineer. The Contractor shall obtain the aforesaid samples of the drilled material and submit the samples to a responsible Geo-Technical company for appropriate tests & analysis. These tests shall be made in accordance with standard testing procedures & the test results will be furnished to the department by the contractor.

Third Paragraph - Delete the second sentence.

Fourth Paragraph - Delete the word "Furnishing" and substitute the following: Requirement.

**SECTION 107 LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC**

Section 107.01

First Paragraph - Delete the word "Department" & substitute the word: City of Beaufort.

Section 107.02

Add the following as a second paragraph:

The City permits shall be required as applicable, but the fee shall be waived at the discretion of the applicable agency or department having jurisdiction.

Add the following:

NOTE: The above statements apply to the City of Beaufort permit fees only, and not to any Beaufort County or town permit fees and/or licenses, when applicable.

Section 107.03

Delete from the first paragraph: "Department". Substitute the following:

City of Beaufort & any and/or City Officers, Agents, Employees.

**SECTION 108 PROSECUTION & PROGRESS**

Section 108.01

Revise last sentence of first paragraph by deleting: "Engineer". Substitute the following:

City Manager

Section 108.02

Add a new paragraph stating: At the time of the pre-construction conference, the contractor shall submit a preliminary construction schedule in the computerized format consistent with the schedule requirements addressed in the special provisions. The computerized software to be used will be Microsoft Project, SureTrak/Primavera or equal. The final approved schedule shall be in place and activated prior to the first request for partial payment. Further, any and all other subsequent request for partial payment shall be accompanied by an up to date

project completion schedule. Failure to comply with this request may result in a delay of payment.

Section 108.04

Add third paragraph as follows:

The hours of Work shall be consistent with the hours of normal operation of the City of Beaufort Project Engineer. That is Monday thru Friday from 8:00 a.m. to 5:00 p.m. The City of Beaufort Project Engineer may agree to waive these time requirements upon written request from the contractor. The Contractor is made aware that the hours accumulated by the Engineer and/or his staff processing, working or otherwise attending to the contract as it relates to over time hours generated by the contractors work hours or delinquencies, could be assessed to the contractor. The City of Beaufort pay scale would govern with county employees wage rates applicable. Reimbursement would be processed as a contract reduction via a supplemental agreement or change order.

**End of Section**

## SUPPLEMENTARY CONDITIONS

### SECTION 4

#### EXHIBIT SC-A

A LISTING OF THE DUTIES, RESPONSIBILITIES, AND LIMITATIONS OF AUTHORITY OF THE RESIDENT PROJECT REPRESENTATIVE.

**ENGINEER** shall furnish a Resident Project Representative (RPR), assistants and other field staff to assist **ENGINEER** in observing performance of the Work of the Contractor.

Through more extensive on-site observations of the Work in progress and field checks of materials and equipment by the RPR and assistants, **ENGINEER** shall endeavor to provide further protection for **OWNER** against defects and deficiencies in the Work; but, the furnishing of such services will not make **ENGINEER** responsible for or give **ENGINEER** control over construction means, methods, techniques, sequences or procedures or for safety precautions or programs, or responsibility for **CONTRACTOR'S** failure to perform the Work in accordance with the Contract Documents.

The duties and responsibilities of the RPR are limited to those of **ENGINEER** in the construction Contract Documents, and are further limited and described as follows:

#### A. General

RPR is **ENGINEER'S** agent at the site, will act as directed by and under the supervision of **ENGINEER**, and will confer with engineer regarding RPR's actions. RPR's dealings in matters pertaining to the on-site work shall in general be with **ENGINEER** and **CONTRACTOR** keeping **OWNER** advised as necessary. RPR's dealing with subcontractors shall only be through or with the full knowledge and approval of **CONTRACTOR**. RPR shall generally communicate with knowledge and approval of **CONTRACTOR**. RPR shall generally communicate with **OWNER** with the knowledge of and under the direction of **ENGINEER**.

#### B. Duties and Responsibilities of RPR

1. Schedules: Review the progress schedule, schedule of Shop Drawing submittals and schedule of values prepared by **CONTRACTOR** and consult with **ENGINEER** concerning acceptability.
2. Conferences and meetings: Attend meetings with **CONTRACTOR**, such as preconstruction conferences, progress meetings, job conferences and other project related meetings, and prepare and circulate copies of minutes thereof.
3. Liaison:
  - a. Serve as **ENGINEER'S** liaison with **CONTRACTOR**, working principally through **CONTRACTOR'S** superintendent and assist in understanding the intent of the Contract Documents; and assist **ENGINEER** in serving, as **OWNER'S** a liaison with **CONTRACTOR** when **CONTRACTOR'S** operations affect **OWNER'S** on-site operation.
  - b. Assist in obtaining from **OWNER** additional details or information, when required for proper execution of the Work.
4. Shop Drawings and Samples:
  - a. Record date of receipt of Shop Drawing and samples.
  - b. Receive samples which are furnished at the site by **CONTRACTOR AND NOTIFY ENGINEER** of availability of samples for examination.
  - c. Advise **ENGINEER** and **CONTRACTOR** of the commencement of any Work requiring a Shop Drawing or sample if the submittal has not been approved by **ENGINEER**.

5. Review of Work, Rejection of Defective Work, Inspections and Tests:

- a. Conduct on-site observations of the Work in progress to assist **ENGINEER** in determining if the Work is in general proceeding in accordance with the Contract Documents.
- b. Report to **ENGINEER** whenever RPR believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise **ENGINEER** of Work that RPR believes should be corrected or rejected or should be uncovered for observation, or required special testing, inspection or approval.
- c. Verify that tests, equipment and systems startups and operating and maintenance training are conducted in the presence of appropriate personnel, and that **CONTRACTOR** maintains adequate records thereof; and observe record and report to **ENGINEER** appropriate details relative to the test procedures and startups.
- d. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections and report to **ENGINEER**.

6. Interpretation of Contract Documents:

Report to **ENGINEER** when clarifications and interpretations of the Contract Documents are needed and transmit to **CONTRACTOR** clarifications and interpretations as issued by **ENGINEER**.

7. Modifications:

Consider and evaluate **CONTRACTOR'S** suggestions for modifications in Drawings or Specifications and Report with RPR's recommendations to **ENGINEER**. Transmit to **CONTRACTOR** decisions as issued by **ENGINEER**.

8. Records:

- a. Maintain at the job site orderly files for correspondence, reports of job conferences, Shop Drawings and samples, reproductions of original Contract Documents including all Work Directive Changes, Addenda, Change Orders, and Field Orders, additional Drawings issued subsequent to the execution of the Contract. **ENGINEER'S Clarifications** and interpretations of the contract Documents, progress reports, and other Project related documents.
- b. Keep a diary or logbook, recording **CONTRACTOR** hours on the job site, weather conditions, data relative to questions of Work Directive Changes. Change Orders or changed conditions, list of job site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to **ENGINEER**.
- c. Record names, addresses and telephone numbers of all **CONTRACTORS**, subcontractors and major suppliers of materials and equipment.

9. Reports:

- a. Furnish **ENGINEER** periodic reports as required of progress of the work and of **CONTRACTOR'S** compliance with the progress schedule and schedule of Shop Drawing and sample submittals.
- b. Consult with **ENGINEER** in advance of scheduled major tests, inspections or start of important phases of the Work.
- c. Draft proposed Change Orders and Work Directive Changes obtaining backup material from **CONTRACTOR** and recommend to **ENGINEER** Change Orders, Work Directive Changes and Field Orders.
- d. Report immediately to **ENGINEER** and **OWNER** upon the occurrence of any accident.

10. Payment Requests:

Review applications for payment with **CONTRACTOR** for compliance with the established procedure for their submission and forward with recommendations **ENGINEER**, noting particularly the relationship of the payment requested to the schedule of values. Work completed and materials and equipment delivered at the site but not incorporated in the Work.

11. Certificates, Maintenance and Operation Manuals:

During the course of the work, verify that certificates, maintenance and operation manuals and other data required to be assembled and furnished by **CONTRACTOR** are applicable to the items actually installed and in accordance with the Contract documents, and have this material delivered to **ENGINEER** for review and forwarding to **OWNER** prior to final payment for the WORK.

12. Completion:

- a. When **CONTRACTOR** nears completion of work, submit to **CONTRACTOR** a list of observed items requiring completion or correction.
- b. Conduct final inspection in the company of **ENGINEER/OWNER** and **CONTRACTOR** and prepare a final list of items to be completed or corrected.
- c. Observe that all items on final list have been completed or corrected and make recommendations to **ENGINEER** concerning acceptance.

C. Limitations of Authority Resident Project Representative:

1. Shall not authorize any deviation from the Contract Documents or substitution of materials or equipment, unless authorized by **ENGINEER**.
2. Shall not exceed limitations of **ENGINEER'S** authority as set forth in the Contract Documents.
3. Shall not undertake any of the responsibilities of **CONTRACTOR**, subcontractors or **CONTRACTOR'S** superintendent.
4. Shall not advise on, issue directions relative to or assume control over any aspect of the means, techniques, sequences or procedures of construction unless such advise or directions are specifically required by the Contract Documents.
5. Shall not advise on, issue directions regarding or assume control over safety precautions and programs in connection with the Work.
6. Shall not accept Shop Drawing or sample submittals from anyone other than **CONTRACTOR**.
7. Shall not authorize **OWNER** to occupy the Project in whole or in part.
8. Shall not participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by **ENGINEER**.

**SECTION 5  
GENERAL PROVISIONS  
TABLE OF CONTENTS**

General Provisions .....Sec 5.0  
Schedule of Insurance Requirements Exhibit GR-A .....Sec 5.1

**GENERAL PROVISIONS**

**SECTION FIVE**

The General Provisions of the Contract shall be as listed in the South Carolina State Highway Division, Standard Specifications for Highway Construction, Edition of 2000, Section 100 General Provisions, Sections 101 - 109.08 inclusive, except as noted & amended elsewhere herein.

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**SCHEDULE OF INSURANCE REQUIREMENTS**  
**PART A - LIABILITY INSURANCE**

The limits for the liability insurance required by Paragraph 11.1B of the General Conditions shall provide coverages for not less than the following amounts or greater where required by law or regulations.

All liability insurance shall remain in effect until final payment and at all times thereafter when the **CONTRACTOR** may be correcting, removing or replacing defective Work. In addition, **CONTRACTOR** shall maintain completed operations insurance for at least two years after final payment and furnish owner with evidence on continuation of such insurance at final payment and one year thereafter.

Insurance shall include: Workers Compensation and Employers Liability and Comprehensive General Liability as follows:

Comprehensive General Liability

The CONTRACTOR shall procure and maintain at his own expense during the CONTRACT TIME liability insurance as hereinafter specified:

**CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting him from all claims for personal injury, including death, and all claims for destruction of or damage to property arising out of or in connection with any operations under the CONTRACT DOCUMENTS, whether such operations be by himself or by any SUBCONTRACTOR under him, or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR under him. Insurance shall be written with a limit of liability of not less than \$1,000,000 for all damages arising out of bodily injury, including death, at any time resulting there from, sustained by any one person in any one accident; and a limit liability of not less than \$1,000,000 for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than \$500,000 for all property damages sustained by any one person in any one accident; and a limit liability of not less than \$500,000 for any such damage sustained by two or more persons in any one accident.**

Comprehensive Automobile Liability

Bodily Injury and Property Damage shall be provided in the amount of coverage set forth above for Comprehensive General Liability.

Contract Liability

Contractual Liability shall be provided for the coverage and in the amount of coverage set forth above for Comprehensive General Liability

Additional Liability

Additional Liability coverage for **OWNER, ENGINEER & SCDOT** shall be provided either:

- (a) By endorsement as additional insures on **CONTRACTOR'S** General Liability Policy, or
- (b) By issue of a separate Protective Liability Policy covering **OWNER, ENGINEER & SCDOT** for the coverage an in the amount of coverage set forth above for General Liability.

PART B - PROPERTY INSURANCE

All property insurance shall remain in effect until final payment.

Builders Risk

Coverage shall include: "all-risk" form; fire; extended coverage; and theft. Coverage amount shall be indicated:

The full insurable value of the Work at the Contract Price shall be in form of complete value.

Boiler and Machinery

Object to be Insured: NONE

Limits: Not Applicable

**SECTION SIX**  
**SPECIAL PROVISIONS**

**DEPARTMENT OF COMMERCE**  
**GRANTS ADMINISTRATION**  
**COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM**



**CONTRACT SPECIAL PROVISIONS**

*The following CDBG Contract Special Provisions should be used with all construction contracts, including housing rehabilitation, as applicable, and professional service contracts, where CDBG funds are being used in whole or in part.*

## CONTRACT SPECIAL PROVISIONS

1. **Definitions:** For purposes of this Contract, the following terms shall have the meanings set forth below:
  - (a) **“Assistance”** means the CDBG grant funds provided, or to be provided, to the Grantee by the State, pursuant to the Grant Award Agreement.
  - (b) **“CDBG”** means Community Development Block Grant.
  - (c) **“Contract”** means the contractual agreement between the Owner and the Contractor to which these Contract Special Provisions have been incorporated and made a part thereof.
  - (d) **“Contractor”** means the contractor whose services are retained pursuant to the Contract.
  - (e) **“Grantee”** means the unit of local government designated as the recipient of the Assistance in the Grant Award and signing the acceptance provision of the Grant Award.
  - (f) **“HUD”** means U.S. Department of Housing and Urban Development, which is the federal agency that awards and has authority over CDBG funding to the State.
  - (g) **“Owner”** means the Grantee or Subrecipient, as applicable.
  - (h) **“Project”** means the project for which the services of the Contractor have been retained pursuant to the Contract which are funded, in whole or in part, with CDBG funds.
  - (i) **“State”** means the State of South Carolina, or that agency, agency division, or Office of State government which has been delegated the responsibility for administering the CDBG program for the State of South Carolina, as appropriate.
  - (j) **“Subrecipient”** means the agent of the unit of local government as designated by an agreement.
  - (k) **“Labor Surplus Area”** means a civil jurisdiction that has an unemployment rate at least 20% above the average unemployment rate for all states, the District of Columbia, and Puerto Rico during the previous two calendar years. The Department of Labor issues the labor surplus area list on a fiscal year basis.
2. **Prime Contractor Responsibilities:** The Contractor is required to assume sole responsibility for the complete effort and enforcement of laws and regulations under this Contract. The Owner will consider the Contractor to be the sole point of contact with regard to contractual matters.
3. **Federal and State Laws:** The Contractor agrees to comply with all CDBG requirements as well as other federal and state laws, regulations, or Executive Orders. The State reserves the right to add or delete terms and conditions of this Contract as may be required by revisions and additions or changes in the requirements, regulations, and laws governing the CDBG Program.
4. **Procurement and Contracting:** In accordance with 24 CFR Part 85.36 (f), the cost plus a percentage of cost and percentage of construction cost methods of contracting shall not be used. This provision shall supersede any conflicting provision in an executed contract document or agreement funded in whole or in part with CDBG funds.
5. **Ownership:** Ownership of all real or personal property, acquired in whole or in part with CDBG funds for use on this Project, shall be vested in the Grantee, unless otherwise authorized by the State. When the Grantee determines that the property is no longer required for the purposes of

this Project, the Grantee must notify the State and obtain approval for disposition of the property in accordance with applicable guidelines.

6. **Copyright:** Except as otherwise provided in the terms and conditions of this Contract, the Contractor paid through this Contract is free to copyright any books, publications or other copyrightable materials developed in the course of the Project and under this Contract. However, HUD and the State reserve a royalty-free, non-exclusive and irrevocable license to reproduce, publish or otherwise use and to authorize others to use, for Federal government and State purposes:
  - (a) the copyright in any work developed under this Contract; and
  - (b) any rights of copyright to which a subcontractor purchases ownership with grant support.

The Federal government's rights and the State's rights identified above must be conveyed to the publisher and the language of the publisher's release form must insure the preservation of these rights.
6. **Reporting Requirements:** The Contractor agrees to complete and submit all reports, in such form and according to such schedule, as may be required by the State or HUD. Further, the Contractor agrees to require any subcontractors to submit reports that may be required and to incorporate such language in its agreements. Failure to meet deadlines with the required information could result in sanctions.
7. **Access to Records:** All records with respect to all matters covered by this Contract shall be made available at any time for audit and inspection by HUD, the State or the Grantee or their representatives upon their request.
8. **Maintenance of Records:** Records for non-expendable property purchased totally or partially with Federal funds must be retained for five years after final close-out of the grant. All other pertinent contract records including financial records, supporting documents and statistical records shall be retained for a minimum of five years after the final close-out report. However, if any litigation, claim, or audit is started before the expiration of the five year period, then records must be retained for five years after the litigation, claim or audit is resolved.
9. **Confidential Information:** Any reports, information, data, etc., given to, prepared by, or assembled by the Contractor under this Contract, which the Grantee or the State requests to be kept confidential, shall not be made available to any individual or organization by the Contractor without prior written approval of the Grantee or the State, as applicable.
10. **Reporting of Fraudulent Activity:** If at any time during the term of this Contract anyone has reason to believe by whatever means that, under this or any other program administered by the State, a recipient of funds has improperly or fraudulently applied for or received benefits, monies or services pursuant to this Contract or any other contract, such information shall be reported immediately to the appropriate authorities.
11. **Political Activity:** None of the funds, materials, property or services provided directly or indirectly under this Contract shall be used for any partisan political activity, or to further the election or defeat of any candidate for public office or otherwise in violation of the provisions of Section 8-13-765 of the Code of Laws of South Carolina, 1976, as amended.
12. **Conflicts of Interest and Ethical Standards, South Carolina Consolidated Procurement Code:** The following provisions regarding "conflicts of interest" apply to the use and expenditure of CDBG funds by the Grantee and its subrecipients, including the Contractor.

In the procurement of supplies, equipment, construction and services, the more restrictive conflict of interest provisions of the State of South Carolina Ethics, Government Accountability and Campaign Reform Act of 1991 or of the Contractor shall apply.

In cases not governed by the above, such as the acquisition and disposition of real property and the provision of CDBG assistance to individuals, businesses and other private entities, the following provisions shall apply.

Except for eligible administrative or personnel costs, the general rule is that no person who is an employee, agent, consultant, officer, or elected or appointed official of the State or a unit of general local government or any designated public agencies or subrecipient which are receiving CDBG funds who exercise or have exercised any function or responsibilities with respect to CDBG activities assisted herein or are in a position to participate in a decision making process or gain inside information with regard to such activities, may obtain a financial interest or benefit from the activity, or have an interest in any contract, subcontract or agreement with respect thereto, or the proceeds thereunder either for themselves or those with whom they have family or business ties during their tenure or for one year thereafter. Exceptions may be granted by the State on a case by case basis as requested upon full disclosure in writing.

Should any governmental entity, contractor, subcontractor, employee or official know or perceive any breach of ethical standards or conflict of interest under the CDBG grant awarded to the Grantee or any other CDBG grant, they shall immediately notify in writing the Department of Commerce, Grants Administration, 1201 Main Street, Suite 1600, Columbia, South Carolina, 29201. If the State finds any circumstances that may give rise to a breach of ethical standards or conflict of interest, under any grant, they shall notify the participating governmental entity and the State Ethics Commission as appropriate. The State may undertake any administrative remedies it deems appropriate, where there is a breach of ethical standards or conflict of interest under the regulations governing the CDBG Program and the State policies.

- 13. Applicable Law:** In addition to the applicable Federal laws and regulations, this Contract is also made under and shall be construed in accordance with the laws of the State. By execution of this Contract, the Contractor agrees to submit to the jurisdiction of the State for all matters arising or to arise hereunder, including but not limited to performance of said Contract and payment of all licenses and taxes of whatever kind or nature applicable hereto.
- 14. Limitation of Liability:** The Contractor will not assert in any legal action by claim or defense, or take the position in any administrative or legal procedures that he is an agent or employee of the Owner. This provision is not applicable to contracts for CDBG administration services where the Contractor is a Council of Government. The State shall not be liable for failure on the part of the Grantee or any other party to perform all work in accordance with all applicable laws and regulations. The Grantee agrees to defend, indemnify, and hold harmless the State from and against all claims, demands, judgments, damages, actions, causes of actions, injuries, administrative orders, consent agreement and orders, liabilities, penalties, costs, and expenses of any kind whatsoever, including, without limitation, claims arising out of loss of life, injury to persons, property, or business or damage to natural resources in connection with the activities of the Grantee and any other third parties in a contractual relationship with the Grantee, or a subsidiary, whether or not occasioned wholly or in part by any condition, accident, or event caused by any act or omission of the State as a result of the Assistance.
- 15. Legal Services:** No attorney-at-law shall be engaged through the use of any funds provided under this Contract in any legal action or proceeding against the State, the Grantee, any local public body or any political subdivision.
- 16. Contract:** If any provision in this Contract shall be held to be invalid or unenforceable, the remaining portions shall remain in effect. In the event such invalid or unenforceable provision is considered an essential element of this Contract, the parties shall promptly negotiate a replacement provision, which addresses the intent of such provision.
- 17. Amendments:** Any changes to this Contract affecting the scope of work of the Project must be approved, in writing, by the Owner and the Contractor and shall be incorporated in writing into this Contract. Any amendments of the original contract must have written approval by the State prior to execution.
- 18. Termination for Convenience:** This Contract may be terminated for convenience in accordance with 24 CFR Part 85.44.
- 19. Sanctions:** If the Contractor fails or refuses to comply with the provisions set forth herein, the State or Owner may take any or all of the following actions: cancel, terminate or suspend in

whole or in any part the contract, or refrain from extending any further funds to the Contractor until such time as the Contractor is in full compliance.

**20. Subcontracting:** If any part of the work covered by this Contract is to be subcontracted, the Contractor shall identify the subcontracting organization and the contractual arrangements made therewith to the Owner and to the State. All subcontracts must be approved by the Owner and the State to insure they are not debarred or suspended by the Federal or State governments and to insure the Owner and the State understand the arrangements.

**21. Subcontracting with Small and Minority Firms, Women's Business Enterprise and Labor Surplus Areas:** It is national policy to award a fair share of contracts to disadvantaged business enterprises (DBEs), small business enterprises (SBEs), minority business enterprises (MBEs) and women's business enterprises (WBEs). Accordingly, affirmative steps must be taken to assure that DBEs, SBEs, MBEs and WBEs are utilized when possible as sources of supplies, equipment, construction and services. Affirmative steps shall include the following:

- (a) Including qualified DBEs, SBEs, MBEs and WBEs on solicitation lists;
- (b) Assuring that DBEs, SBEs, MBEs and WBEs are solicited whenever they are potential sources;
- (c) Whenever economically feasible, dividing total requirements into smaller tasks or quantities so as to permit maximum participation by DBEs, SBEs, MBEs and WBEs;
- (d) Where the requirement permits, establishing delivery schedules which will encourage participation by DBEs, SBEs, MBEs and WBEs;
- (e) Using the services and assistance of the Small Business Administration, Minority Business Development Agency, the State Office of Small and Minority Business Assistance, the U.S. Department of Commerce and the Community Services Administration as required; and
- (f) Requiring the subcontractor, if any, to take the affirmative actions outlined in (1) – (5) above.

**22. Debarment Certification:** The Contractor must comply with Executive Order 11246 regarding Federal debarment and suspension regulations prior to entering into a financial agreement for any transaction as outlined below.

- (a) Any procurement contract for goods and services, regardless of type, expected to equal or exceed the Federal procurement small purchase threshold (which is \$100,000 and is cumulative amount from all federal funding sources).
- (b) Any procurement contract for goods and services, regardless of amount, under which the Contractor will have a critical influence on or substantive control over the transaction.

In addition, no contract may be awarded to any contractors who are ineligible to receive contracts under any applicable regulations of the State.

**23. South Carolina Illegal Immigration Reform Act:** The Owner and the Contractor are required to comply with the South Carolina Illegal Immigration Reform Act (signed June 4, 2008) requiring verification of lawful presence in the United States of any alien eighteen years of age or older who has applied for state or local public benefits, as defined in 8 U.S.C. Section 1621, or for federal public benefits, as defined in U.S.C. Section 1611.

**24. Equal Employment Opportunity:** The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the State.

In carrying out the Project, the Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor must take affirmative action to insure that applicants for employment are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor shall post in conspicuous places, available to employees and applicants for employment, notices to be provided by the State setting forth the provisions of this non-

discrimination clause. The Contractor shall state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin. The Contractor will, in all solicitations or advertisements for employees by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin. The Contractor shall incorporate the foregoing requirements of this paragraph in all of its subcontracts for the Project unless exempted by rules, regulations, or orders of the State issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor.

The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the State advising the said labor union or workers' representatives of the Contractor's commitment under this Section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations, and orders of the State, or pursuant thereto, and will permit access to its books, records, and accounts by HUD and the State for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

In the event of the Contractor's noncompliance with the non-discrimination clauses of this Contract or with any of such rules, regulations, or orders, this Contract may be canceled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further State government contracts or federally assisted construction contract procedures authorized in Executive Order 11246 of September 24, 1965, or by rules, regulations, or orders of the State, or as otherwise provided by law.

- 25. Age Discrimination:** In accordance with 45 CFR, Parts 90 and 91, the Contractor agrees there shall be no bias or age discrimination as to benefits and participation under this Contract.
- 26. Section 109 of the Housing and Community Development Act of 1974:** No person in the United States shall on the grounds of race, color, national origin or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under the CDBG program of the State.
- 27. Section 504 of the Rehabilitation Act of 1973, as amended:** The Contractor agrees that no otherwise qualified individual with disabilities shall, solely by reason of his disability, be denied the benefits, or be subjected to discrimination including discrimination in employment, any program or activity that receives the benefits from the Assistance.
- 28. Section 3, Compliance and Provision of Training, Employment and Business Opportunities:** The work to be performed under this Contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, (12 USC § 1701u). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by Section 3 shall, to the greatest extent feasible be directed to low and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

The parties to this said Contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement Section 3. As evidenced by their execution of this Contract, the parties to this Contract certify that they are under no contractual or other impediment that would prevent them from complying with the 24 CFR Part 135 regulations.

The contractor agrees to send to each labor organization or representative of workers with which the Contractor has a collective bargaining agreement or other understanding, if any, a notice advising the organization or workers' representative of the contractor's commitments under this Section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the Section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions; the qualifications for each; and

the name and location of person(s) taking applications for each of the positions; and the anticipated date the work shall begin. The Contractor agrees to include this Section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this Section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The Contractor will not subcontract with any subcontractor where the Contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.

The Contractor will certify that any vacant employment positions including training positions, that are filled (1) after the Contractor is selected but before this Contract has been executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the Contractor's obligations under 24 CFR Part 135.

The Contractor agrees to submit such reports as required to document compliance with 24 CFR Part 135. Noncompliance with the regulations in 24 CFR Part 135 may result in sanctions, termination of this Contract for default, and debarment or suspension from future HUD assisted contracts.

**29. Lead-Based Paint:** The construction or rehabilitation of residential structures with any portion of the Assistance is subject to the HUD Lead-Based Paint regulations found at 24 CFR Part 35. Any grants or loans made by the Grantee for the rehabilitation of residential structures with any portion of the Assistance shall be made subject to the provisions for the elimination of lead-base paint hazards under subpart B of said regulations, and the Grantee shall be responsible for the inspections and certifications required under Section 35.14(f) thereof.

**30. Compliance with Air and Water Acts:** (Applicable to construction contracts and related subcontracts exceeding \$100,000) This Contract is subject to the requirements of the Clean Air Act, as amended, 42 USC § 7401 et seq., the Federal Water Pollution Control Act (Clean Water Act), as amended, 33 USC § 1251 et seq., and the regulations of the Environmental Protection Agency with respect to 40 CFR Part 15, as amended from time to time, and the South Carolina Stormwater Management and Sediment Reduction Act. In particular, the following are required:

- (a) A stipulation by the Contractor or subcontractor that any facility to be utilized in the performance of any nonexempt contract or subcontract is not listed on the List of Violating Facilities, issued by the Environmental Protection Agency (EPA) pursuant to 40 CFR § 15.20.
- (b) Agreement by the Contractor to comply with all the requirements of Section 114 of the Clean Air Act, as amended (42 USC § 7414) and Section 308 of the Federal Water Pollution Control Act, as amended (33 USC § 1318) relating to inspection, monitoring, entry, reports and information, as well as all other requirements specified in said Sections 114 and 308, and all regulations and guidelines issued thereunder.
- (c) A stipulation that as a condition of award of contract prompt notice will be given of any notification received from the Director, Office of Federal Activities, EPA, indicating that a facility utilized or to be utilized for the contract under consideration is to be listed on the EPA list of Violating Facilities.
- (d) Agreement by the Contractor that the Contractor will include or cause to be included the criteria and requirements in these subparagraphs (1) through (4), in every nonexempt subcontract and requiring that the Contractor will take such action as the State may direct as a means of enforcing such provisions.

In no event shall any amount of the Assistance be utilized with respect to a facility which has given rise to a conviction under section 113(c)(1) of the Clean Air Act or Section 309(c) of the Federal Water Pollution Control Act.

**31. Federal Labor Standards Provisions:** *(Applicable to construction contracts in excess of \$2,000 or residential rehabilitation contracts involving more than eight units)*

The Project or program to which the construction work covered by this Contract pertains is being assisted by the United States of America and the Federal Labor Standards Provisions as set forth

on Attachment 1 are included in this Contract pursuant to the provisions applicable to such Federal assistance. These provisions must be complied with or sanctions will be instituted.

### Attachment 1

U.S. Department of Housing and Urban Development, Office of Labor Relations form HUD-4010 (07/2003) ref. Handbook 1344.1

**A. 1.(i) Minimum Wages.** All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached thereto and made a part thereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5 (a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification of the time actually work therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification an wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

**(ii) (a)** Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1)** The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2)** The classification is utilized in the area by the construction industry; and
- (3)** The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

**(b)** If the contractor and the laborers and mechanics to be employed I the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1214-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

**2. Withholding.** HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federal-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension or any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for an on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

**3. (i) Payrolls and basic records.** Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section I (b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section I(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment of provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices and trainee programs, the registration of the apprentices and trainees, and the ratios and wage

rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) the contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, DC 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget Under OMB Control Number 1215-0129.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays for supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be maintained under 29 CFR 5.5 (a)(3)(i) and that such information is correct and complete'

(2) That each laborer or mechanic (including each apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

#### **4. Apprentices and Trainees.**

(i) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment Training Administration, Office of Apprenticeship Training, Employer and Training Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen in any craft classification shall not be greater than the ratio permitted to the contractor as to his entire work force under the registered program. Any worker listed on a payroll at an apprentice

wage rate, who is not registered or otherwise employed as state above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ration permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved

**(ii) Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every Trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

**(iii) Equal employment opportunity.** The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

**5. Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract.

**6. Subcontracts.** The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 of this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

**7. Contract termination; debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act Requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

**9. Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

**10. (i) Certification of Eligibility.** By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provided in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration..... makes, utters or publishes any statement knowing the same to be false..... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

**11. Complaints, Proceedings, or Testimony by Employees.** No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

**B. Contract Work Hours and Safety Standards Act.** The provisions of this paragraph B are applicable only where the amount of the prime contract exceeds \$100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

**(1) Overtime Requirements.** No Contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

**(2) Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violations of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without

payment of the overtime wages required by the clause set forth in sub paragraph (1) of this paragraph.

(3) **Withholding for unpaid wages and liquidated damages.** HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract, or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

**C. Health and Safety.** The provisions of this paragraph C are applicable only where the amount of the prime contract exceeds \$100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to this health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, 40 USC 3701 et. seq.

(3) The Contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The Contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

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## SECTION 6.1 - GENERAL SPECIAL PROVISION

### SPECIAL PROVISIONS: Road Reconstruction for Duke Street Phase 2-Streetscape.

1. **The ENGINEER shall verify the amount of work completed on the above referenced reconstruction projects with the CONTRACTOR before Progress Payments are issued.**
2. **There shall be no pre-qualifications of the Bidders.**
3. **Progress and Shop Drawing Schedules**

Before starting construction the **CONTRACTOR** shall be required to submit a progress schedule and shop drawings as follows:

- A. Before commencement of work the **CONTRACTOR** shall submit a computerized schedule in an approved tracking format of the work necessary to complete the project to the **ENGINEER** for review at the time of the preconstruction meeting. The computerized software to be used will be Microsoft Project, SureTrac/Primavera or equal. The schedule shall be a form approved by the **ENGINEER** indicating the estimated start time and end dates of each major item or phase of the work. Also the progress schedule may be a bar chart of type acceptable to the **ENGINEER** as to form and substance. All costs for furnishing and updating the progress schedule shall be included in the price bid for the various Pay Items scheduled in the Bid Document.
  - B. The **CONTRACTOR** shall also submit to the **ENGINEER** a schedule of Shop Drawing submissions for all fabricated materials which are to be incorporated into permanent construction and which are not furnished by the County. Such Detail drawings shall become property of the City of Beaufort.
4. **Progress and Job-Site Meetings**
    - A. A **mandatory** Construction Progress Meeting attended by the **CONTRACTOR** and **ENGINEER** will be conducted two weeks after the Notice To Proceed has been issued to the **CONTRACTOR**, followed by **semi-monthly (twice a month)** progress meetings. The meeting time and place will be determined at the Preconstruction meeting prior to the start of construction.
  5. **Survey and Stakeouts**
    - A. A horizontal "Control Plan" sheet establishing all controls necessary to construct each road is included in the drawings. The **CONTRACTOR** shall do all surveying and stakeout work required to construct all elements of the Project as stated in the **Supplemental Conditions, Section 104** of the Contract Documents. The **CONTRACTOR** is responsible for the accuracy of all survey and stakeout work including verification of existing reference points. The **CONTRACTOR** shall furnish any copies of survey notes requested by the **ENGINEER**. This work shall include finish grade and offset stakes, to be set throughout the project and shall be provided by the **CONTRACTOR's** Land Surveyor.
    - B. A final "as-built" drawing will be supplied by the **CONTRACTOR** to the **ENGINEER** before final payment is received. The as-built will be stamped by a **Registered Land Surveyor, R.L.S.** The survey will include, but is not limited to final road grades (center and edge of pavement), finished grade, drainage structures, ditches, and property lines.

6. **Supervision and Superintendence**

The work and the work site shall be under the direct charge and direction of the **CONTRACTOR**. The **CONTRACTOR** shall give sufficient superintendence to the Work, using the best skill and attention. The **CONTRACTOR** shall at all times keep on the site, during its progress, a necessary Forepersons and

Assistants, all satisfactory to the **ENGINEER**. The Superintendent shall represent and have full authority to act for the **CONTRACTOR** in the latter's absence, and the directions given to the Superintendent shall be as binding as though given to the **CONTRACTOR**. The same shall apply

to the Forepersons during the absence of both the **CONTRACTOR** and the Superintendent. The Superintendent shall not be changed during the performance of the Work covered by the Contract Documents except with written consent of the **ENGINEER** unless the Superintendent proves to be unsatisfactory to the **CONTRACTOR** and ceases to be in its employ.

- A. Should the **ENGINEER**, at any time, give notice in writing to the **CONTRACTOR** or its representative on the Work that any employee is insolent, disorderly, careless, unobservant of the instructions, dishonest, or in any way a detriment to the satisfactory progress of the Work, such employee shall at once be removed from the Project and not again be allowed to engage in any part of the Work.
- B. The **CONTRACTOR** shall be required to organize, manage, and supervise its own work and to coordinate the work of its subcontractors. On all multi-contract projects, all prime contractors shall be required to organize, manage, and supervise their own work. On all multi-contract projects, all prime contractors shall cooperate with the City and other prime contractors in the overall coordination and supervision of the project.

7. **Construction Notes – Duke Street Phase 2**

- A. **CONTRACTOR** to contact all utility companies before any work commences. Verify utilities within project area.
- B. All work shall conform to the applicable Federal, State, and Local requirements and codes.
- C. Temporary control of storm water drainage shall be the responsibility of the general contractor, and shall be maintained through out the period of the construction.
- D. Where existing pavement is shown to be matched, edge or contact face with existing pavement shall be saw cut to a real vertical line.
- E. Adjustment, relocation, or replacement of existing telephone, electric, cable television, and other private utilities shall be done in conjunction with the time frame of the contract schedule, this work shall be coordinated by the **CONTRACTOR**.
- F. All radii are 10' unless otherwise shown. The **CONTRACTOR** shall be responsible for coordinating with the owners and occupants the closure of driveways to residences and businesses. The **CONTRACTOR** shall provide adequate notice to the owners of his schedule for driveway improvements and for how long access to the driveway may be closed.
- G. All traffic control devices shall be in accordance with: South Carolina Department of Highways and Public Transportation, The South Carolina Manual on Uniform Traffic Control Devices for Streets and Highways, Edition 2000.
- H. In the event of a conflict with a sewer, water, drainage, or other utility lines or services, the **CONTRACTOR** shall coordinate with the affected utility and the **ENGINEER** and shall field adjust as directed.
- I. Any utilities that are damaged and are not to be removed shall be paid for or replaced at the **CONTRACTOR'S** expense.
- J. Location, existence, or non-existence of any utility does not constitute responsibility of the **ENGINEER**.
- K. The location of any shown utilities is approximate.
- L. Should the **CONTRACTOR** find any discrepancies in the drawings or in the field prior to beginning work or during construction, the **CONTRACTOR** shall immediately notify the **ENGINEER**.
- M. The **CONTRACTOR** is responsible to replace/reset any property corner by a registered land surveyor that is lost or disturbed. See section 6.20 and 6.16 of the general conditions.

8. **Control & Acceptance of Hot Laid Asphalt for City of Beaufort Road Projects Under Section 401 of SCDOT Standard Specifications**

- A. Field inspection which includes placement, temperature, load tickets, etc.

- B. Testing at plant (outside agency), including nuclear density along the road at randomly selected locations by the **ENGINEER**.
- C. Asphalt cores shall be obtained by outside agencies Contractor to hire and pay for an accredited/approved Asphalt Testing Agency.

9. **Existing Water Location**

**CONTRACTOR** to coordinate existing water main location with the following agency.

Beaufort Jasper Water & Sewer Authority – 987-9220.

10. **Other Pertinent Utility Agencies for This Contract**

SCE&G (electric) – 525-7742.

Sprint (Telephone) – 525-7932

Charter (Cable) – 986-2360

SCDOT – 524-7255.

Hargray (Cable, Telephone) 815-1697

11. **Stabilized Aggregate Base Road Repair (306A)**

- A. If proposed road subbases shall develop pot hole depressions or become unusable prior to paving, the stabilized aggregate base is to be repaired, as per attached detail drawings (In this section). Any additional material, labor, or equipment needed shall already be included in the appropriate bid item.

12. **Right-of-Way and Suspension of Work**

- A. The **OWNER** shall furnish all land and rights-of-way necessary for the carrying out of this contract and the completion of the work herein contemplated. It is possible that all rights-of-way may not be obtained as herein contemplated before construction begins, in which event the **CONTRACTOR** shall begin his work upon such rights-of-way as the **OWNER** may have previously acquired and no claim for damages whatsoever will be allowed by reason of the delay in damages whatsoever will be allowed by reason of the delay in obtaining the remaining rights-of-way. Should the **OWNER** be prevented or enjoined from proceeding with the work, or from authorizing its prosecution, either before or after the commencement, by reason of any litigation, or by reason of its inability to procure any rights-of-way for the said work, the **CONTRACTOR** shall not be entitled to make or assert claim the damage by reason of said delay, or inability to proceed with portions of their work, or to withdraw from the work within the contract except by consent of the **OWNER**; but time for completion of the work will be extended to such time as the **OWNER** determines necessary for the time lost by such delay, such determination to be set forth in writing.

13. **Maintenance and Maintaining Traffic**

- A. Unless otherwise provided, an existing road while undergoing improvements shall be kept open to all traffic by the **CONTRACTOR**. The **CONTRACTOR** will be required, without direct compensation, to maintain in good condition and satisfactory to the **ENGINEER**, the entire section or sections of highway or roadway, within the limits of the contract from the time he first begins work until all work has been completed and accepted.

14. **Street Lighting**

A. Street Lighting

- 1. The Unit Price Bid for the Street Lighting, if scheduled to be part of the Contract, shall include (but not limited to) all costs for all labor, equipment, and material for installing the items indicated on the drawings and in the details to provide a complete conduit system. The unit price shall include all cost for trenching conduit, pull strings, backfill, patching, and any other item of work to install the conduit system to serve the street light locations shown on the drawings. It shall include all costs for coordination to install the system as much as possible within the limits of project demolition and in accordance with all applicable electrical codes.

2. Measurement will be on linear feet basis of 2" PVC Street Lighting Conduit installed.
  3. Payment, at the Unit Price Bid, will be full compensation for the work completed
- B. Conduits and Fittings (Schedule 40 PVC)
1. The Unit Price Bid for conduits, if scheduled to be part of the Contract, shall include all costs for furnishing all labor and equipment to install conduits at locations shown on the drawings. This does not include conduits in duct banks. The price shall include all fittings. Conduits shall be properly terminated where necessary and completely mandreled, cleaned, and pull lines installed, with ends sealed from the weather. No additional compensation will be given for fittings and sweeps. The unit price for this item shall include all costs for furnishing all material, labor, and equipment to provide trenching, back filling with flowable fill and patching for miscellaneous conduits extending from the duct banks. Use common trench where more than one conduit is shown.
  2. Measurement will be on a per linear foot basis for each type of conduit installed.
  3. Payment, at the Unit Price Bid, will be full compensation for the work satisfactorily completed.
- C. Street Light Foundations
1. The Unit Price Bid for Street Lighting-Foundations, if scheduled to be part of the Contract, shall include (but not limited to) furnishing all material, labor, and equipment required to install light pole bases or foundations (including concrete and reinforcement) as shown on the Drawings. Street Light Foundations that are not set at the correct elevation will not be measured for payment.
  2. Measurement will be in the number of light pole bases or foundations in place, and accepted.
- D. Street Lighting Poles And Bases/Light Fixtures/Lamps
1. The Unit Price Bid for Furnishing Street Lighting-Poles & Fixtures, if scheduled to be part of the Contract, shall include (but not limited to) furnishing all material, labor, and equipment required to allow for the installation of light poles and fixtures as shown on the Drawings. Street Light Poles and fixtures that are not fully operational will not be measured for payment.
  2. SCE&G will install the light poles, fixtures, and do the electrical wiring.
  3. Measurement will be in the number of light poles with fixtures in place, and accepted.
  4. The amount to be paid, if scheduled to be part of the Contract, under this item shall be the actual direct cost to the Contractor for furnishing the selected street light poles and bases, light fixtures, and lamps. All other costs associated with this work, including but not limited to charges for overhead, profit, insurance, and incidental expenses, shall be included in the bid item for Street Lighting
  5. The light poles and fixtures shall be per the following tables.

Catalog Number WA 250PM MA B 4 B 4 F S-64320 CHA 14 F4J 12 P07 ABG BK	
Type:	Notes:

**SPECIFICATIONS**

**FIXTURE**

Washington Postlite  
 [WA 250PM MA B 4 B 4 F S-64320]  
 Prefix: WA  
 Source/Wattage: 250W Pulse Metal Halide, Mogul Base  
 Voltage: Multivolt 120, 208, 240, 277V Factory wired for 120V Only. UL listed  
 Finish: Black  
 Optic: Asymmetric, Type IV  
 Trim Finish: Black  
 Decorative Trim: Spike Finial  
 Cover: Full Cover  
 Control: None  
 Starter: None  
 Leads: None  
 Fuse Kits: None  
 Shields: None

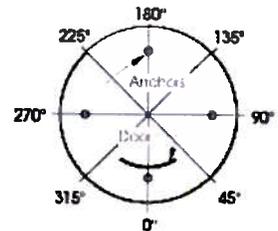
**POLE**

Charleston Aluminum Pole  
 [CHA 14 F4J 12 P07 ABG BK ]  
 Prefix: Charleston, Aluminum Pole  
 Height: 14 feet  
 Shaft Style: F4J 4 inch diameter Fluted, .25 wall  
 Base: 12 inch Round Base  
 Tenon: 3 X 3 Tenon  
 Pole Mounting: Anchor bolts, galvanized steel  
 Finish: Powder Coat Paint Finish, Black

**Charleston Aluminum Pole  
 Washington Postlite**



**Anchorage/Orientation Plan**



Customer Approval:

Job Name: Product Basket  
 Client Name:

signature

date

Created By:

Date: 20-Dec-11



**Job Name:** street scape  
**Quote #:** 2092-11-10192-6  
**Quote Label:** Duke Street Washington  
**Job Location:** Beaufort, South Carolina  
**Issue Date:** 12/20/2011  
**Bid Date:** 10/21/2011

**Quoted By:** Barry Thomas  
 912.429-6610  
 BThomas@Holophane.com

Type	Qty	Catalog #	Unit \$	Ext \$
	12	<b>WA 250PM MA B 4 B 4 F S-64320 CHA 14 F4J 12 P07 ABG BK</b> Washington Postlite (WA): WA, 250W Pulse Metal Halide, Mogul Base, Multivolt 120, 208, 240, 277V Factory wired for 120V Only. UL listed, Black, Asymmetric, Type IV, Black, Spike Finial, Full Cover Charleston Aluminum Pole (CHA): Charleston, Aluminum Pole, 14 feet, F4J 4 inch diameter Fluted, .25 wall, 12 inch Round Base, 3 X 3 Tenon, Anchor bolts, galvanized steel, Powder Coat Paint Finish, Black with Sylvania (M250/PS/U) 250MH Clear Mogul "E" Pulse Start Lamp		

**Estimated Lead Time: 24 days** **Grand Total:**

**Notes**

**Terms**

HOLOPHANE: This quote is valid for 90 calendar days from date of quote. Shipment lead times begin the day after the order is released and are based on working days only. Shipments are FOB Shipping Point on all orders. Holophane shall pay the freight on orders of \$3,000 or more (\$750 for replacement ballast kits) to all points in the continental United States and Canada. Upon release of your order, poles and non-standard material cannot be cancelled or returned. Terms are subject to revision. Items with "Hold" status have not been allocated any labor, material, or scheduled production time. The lead time to shipment will begin when Holophane receives your clarification or approval to release your purchase order item(s) from "Hold" status. Prices in this acknowledgement are firm for release within a period of four months from the date of order. At the end of four months, Holophane, at its option, shall either increase prices by 3% or renegotiate pricing. Thereafter, escalation of 1-1/2% per three month period will be added. In the event of an extraordinary change in raw material costs, Holophane reserves the right to renegotiate pricing. Pricing will be reevaluated and confirmed upon receipt of your clarification or approval to release the purchase order item(s) from "Hold" status.

### LUMINAIRE SCHEDULE

Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF	Watts
	A	12	AW250PM00X4NXXWASHINGTON TB	POSTLITE - ACRYLIC	250PM	AW15AHP00X 4NXXTB.ies	23000	0.81	188

### STATISTICS

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	+	1.4 fc	3.0 fc	0.8 fc	3.8:1	1.8:1



Duke Street  
250PS Touscon  
14 foot mt ht

Designer

Date  
Dec 12 2011

Scale

Drawing No.

1 of 1

## 15. Technical Section

### 15.1 Cleaning Up Work Site

- A. During progress of the work, keep the site and affected adjacent areas cleaned up. Remove all rubbish, surplus materials, and unneeded construction equipment and repair all damages so that the public and property owners will be inconvenienced as little as possible
- B. Where materials or debris has washed or flowed into or has been placed in existing water-courses, ditches, gutters, drains, pipes, structures, by work done under this contract, or elsewhere during the course of the Contractor's operations, remove and satisfactorily dispose of such material or debris during the progress of the work. Upon completion of the work, leave all ditches, channels, drains, pipes, structures, and work, etc in clean and neat conditions.
- C. On or before the completion of the work, unless otherwise directed or permitted in writing, tear down all temporary buildings and structures built by the Contractor for his own use. Remove all temporary works, tools, and machinery or other construction equipment furnished by Contractor. Remove all rubbish from any grounds which have been occupied by the Contractor; leave the roads and all parts of the premises and adjacent property affected by Contractor's operations in a neat and satisfactory condition.
- D. Remove, acceptably disinfect, and cover all organic matter and materials containing organic matter in, under and around all privies, houses, and other buildings used.
- E. Restore or replace, when and as directed, any public or private property damaged by Contractor's work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of the operations. Perform, as required, all necessary highway or driveway reshaping of shoulders and ditches, walks and landscaping work. Use suitable materials, equipment and methods for such restoration. The Contractor shall be responsible for obtaining releases from the various property owners, stating that all restoration work is satisfactory.

## 16. Landscaping

### 16.1 Landscape and Irrigation Specifications

#### A. General

1. All specified trees to be B&B. Any trees displaying girdling or circling roots, poor branching structure, recent pruning cuts, wounds, etc. will be rejected on site. Awarded Contractor to provide nursery source information to City Landscape Architect prior to digging of trees. Photos of trees selected provided at time of bid submittal are appreciated.
2. Soil to be removed from top of rootball as needed to expose root flare **prior** to digging of tree pit.
3. Tree pit to be excavated to a depth not exceeding depth of measured rootball, less 2 inches. Bottom of tree pit must remain undisturbed.
4. Trees to be planted 1" to 2" above finish grade.
5. Berm, forming tree saucer to be formed at outer edge of rootball. Saucer and berm to be mulched with 3" layer pine bark mulch.
6. All trees to be staked following installation.

#### B. Irrigation

1. All spray heads and nozzles to be Hunter.
2. Irrigation to consist of 4" pop up sprays displaying head to head coverage and one flood type bubbler per tree.
3. All pipe placement to be at a **minimum** 12" depth and located at back of curb.

4. Irrigation contractor responsible for providing conduit for sleeving, identifying the location(s) of all sleeving and the installation of sleeving as shown on irrigation plan.
5. Irrigation contractor responsible for procurement of Model 35 meter from Beaufort Jasper Water Authority and installation of backflow. Contractor to provide certificate of inspection of backflow to City Landscape Architect prior to final payment.
6. Any field changes to layout of irrigation pipe, valves, meter, etc. to be recorded on irrigation plan and submitted to City Landscape Architect. It is a provision of this Contract that an asbuilt irrigation drawing is required to be submitted to the City Landscape Architect and approved prior to issuance of final payment.
7. Contractor responsible for procurement of irrigation controller and installation including provision of electrical hookup and coordination with SCEG.

## 16.2 Installation-Trees and Grass

### A. General-Trees

1. All trees to meet or exceed ANSI Z60.1 standards for caliper, height, spread and quality.
2. Trees to be *Lagerstroemia indica* 'Arapaho', unless otherwise specified elsewhere herein, with a minimum 10' ht. x 6' spr., multi-trunk. All trees to match in height of clear trunk from grade to lowest branching point.
3. Excavate planting hole for trees at least two times the diameter of the rootball and 2" shallower than the root ball. Contractor responsible to contact City Landscape Architect for inspection of tree planting holes prior to actual tree planting.
4. Each tree to receive 3 bags mushroom compost (approximately 3 cubic feet total) incorporated into existing excavated soil from tree pit. This material to be utilized in the top half of root ball area. Total bags required: 162
5. Handle tree only by root ball. After placement of tree in planting hole and backfilling to no more than 1/2 the depth of the root ball, saturate the planting hole with water to aid removal of air from backfill. Remove all wire and burlap from top 50% of ball and any circling roots. Complete the backfill and thoroughly saturate with water.
6. Trees to display a 4' x 5' rectangle of 3" depth pine bark mulch. No mulch shall be placed within 2" of tree trunk. All tree and plant bed areas to be mulched with a 3" layer of pine bark mulch. Total quantity of mulch required: 27 CY.
7. Tree lawn: Remove all rubble, debris, trash, etc. as found in top 12" of tree lawn area. Incorporate and till to a 6" depth, a 2" layer of topsoil, removing existing soil as needed to allow topsoil addition. Grade to a consistent 1" below top of sidewalk and roll. Total quantity of topsoil required: 51 CY. Topsoil to be approved by City Landscape Architect prior to delivery to site.

### B. Tree Planting Specifications

1. Plantings shall be installed to current industry standards (ANSI A300 Part 6) and the published Best Management Practices of the International Society of Arboriculture.
2. These specifications are guided by the American National Standard for Tree Care Operations, ANSI A300 Part 6: *Tree, Shrub and Other Woody Plant Maintenance—Standard Practices (Transplanting)* and Part 3 (*Supplemental Support Systems*).
3. The "planting area" includes the root ball, hole, backfill, and outside rim of the berm (if applicable) to a minimum diameter of three times the root ball diameter.
4. The soil in the planting area will be tilled or otherwise aerated to a depth of at least 12 inches to a diameter at least two times the diameter of the root ball or container and amended with **mushroom compost** as specified elsewhere herein. Amended soil to be restricted to top 1/3 of root ball.

5. The planting hole shall be dug no deeper than two inches less than the depth of the root ball, defined as the distance from the topmost primary roots to the bottom of the rooted area with the container or root ball.  
**Note: Contractor shall inspect and reveal tree root flare, if necessary, prior to depth determination of root ball and resulting depth of planting hole.**
6. Any circling roots or kinked roots will be cut smoothly using a sharp knife or pruner. The root system shall be inspected for kinked, circling or girdling roots and root defects shall be corrected prior to planting. If significant root pruning must be done to correct such problems, the tree shall be rejected.
7. The tree shall be placed in the hole two inches higher than the depth of the root ball, as defined above. Under no circumstances should the trees be planted any deeper than the depth of the root ball.
8. Fertilizer will not be used at planting time.
9. The tree shall be set on undisturbed or compacted soil, to reduce settling.
10. Maintain the tree with forks in a straight and plumb position while backfilling to no more than ½ the depth of the root ball.
11. Saturate the planting hole with water after backfill is ½ complete to aid removal of air from the backfill.
12. After initial backfill, watering and the tree is plumb, then add backfill as specified to just below the top horizontal ring of the wire basket, completely saturating planting hole.
13. Remove all trunk wraps, labels, supporting stakes, ties, twine, etc. and top portion of the wire basket down to and including the first horizontal ring and the burlap from the top portion of the root ball.
14. Immediately after backfill has settled and the tree is straight and plumb, **stake tree** using soft strapping material such as Arbor-tie.
15. Berms shall be constructed around the perimeter of the root ball, to a compacted height of 3 to 4 inches and covered with mulch.
16. A three inch layer of shredded **pine bark mulch** shall be placed over the planting area from the outside of the berm to just outside of the base of the trunk. Do not place mulch against the trunk.

C. Grass/Sod

1. Install 8388 SF Celebration Bermuda sod. Soil surface to be rolled to remove depressions prior to laying of sod.
2. Sod to be thoroughly soaked and rolled following installation. Any depressions following rolling to be repaired through removal of sod and filling with topsoil to grade. Reroll repaired areas. Apply clean builders sand in sufficient quantities following installation and rolling to completely fill joints and seams.

16.3 MEASUREMENT

- A. The quantity for Irrigation is measured by the Lump Sum (LS), as noted in the Schedule of Prices [Section 1.8], complete, in place and accepted in accordance with the Plans and Specifications.
- B. The quantity for Arapaho Crape Myrtles is measured by Each (EA) ), as noted in the Schedule of Prices [Section 1.8], complete, in place and accepted in accordance with the Plans and Specifications.
- C. The quantity for Drift Rose is measured by Each (EA) ), as noted in the Schedule of Prices [Section 1.8], complete, in place and accepted in accordance with the Plans and Specifications.

- D. The quantity for Evergreen Giant Liroipe is measured by Each (EA) ), as noted in the Schedule of Prices [Section 1.8], complete, in place and accepted in accordance with the Plans and Specifications.
- E. The quantity for Asiatic Jasmine is measured by Each (EA) ), as noted in the Schedule of Prices [Section 1.8], complete, in place and accepted in accordance with the Plans and Specifications.
- F. The quantity for Grassing-Celebration Bermuda Sod is measured by the Square Foot (SF), as noted in the Schedule of Prices [Section 1.8], complete ,in place and accepted in accordance with the Plans and Specifications.

#### 16.4 PAYMENT

- A. Payment for the accepted quantity for Irrigation Rain, measured in accordance with Subsection 16.3 (above), is determined using the contract unit price for such items of the size and type specified, or as;
- B. Payment for the accepted quantity for Arapaho Crape Myrtles, measured in accordance with Subsection 16.3 (above), is determined using the contract unit price for such items of the size and type specified, or as;
- C. Payment for the accepted quantity for Drift Rose, measured in accordance with Subsection 16.3 (above), is determined using the contract unit price for such items of the size and type specified, or as;
- D. Payment for the accepted quantity for Evergreen Giant Liroipe, measured in accordance with Subsection 16.3 (above), is determined using the contract unit price for such items of the size and type specified, or as;
- E. Payment for the accepted quantity for Asiatic Jasmine, measured in accordance with Subsection 16.3 (above), is determined using the contract unit price for such items of the size and type specified, or as;
- F. Payment for the accepted quantity for Grassing-Celebration Bermuda Sod, measured in accordance with Subsection 16.3 (above), is determined using the contract unit price for such items of the size and type specified, or as;
- G. May be specified elsewhere in the contract documents.
- H. Payment for items A through F above is full compensation for procuring, delivery, installation and maintenance (until final contract payment has been completed) as specified or as directed and includes furnishing and placing specified materials, excavating; providing and placing bedding material and backfilling; disposing of surplus material; and all other materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, Industry Standards and other terms of the Contract.

### 17. STORM DRAINAGE PIPE-VIDEO

#### 17.1 GENERAL

- A. All drainage pipe installed as part of the contract for Duke Street- Phase 2 Streetscape shall be required to comply with the SCDOT Drainage Video Inspection of Pipe per section S-M-714 1.310 (RCP) & 3.3.10 (HDPE) Installation Inspection of the SCDOT Supplemental Technical Specifications for Permanent Pipe Culverts.
- B. In addition to normally anticipated site inspections, the RCE and/or the Owner will be provided the opportunity to inspect 100% of pipe under the roadbed, 100% of pipe in a closed drainage system, and a minimum of 10.0% (random locations) of all other locations via a video inspection of the system being constructed under this contract.

- C. In addition to the requirement that the RCE or Owner be present for the video inspection when it is being done, the Contractor shall also be required to provide a written log/report and video (either in compatible tape format or on a computer disk (CD) in two counter parts).
- D. The video inspection(s) shall be performed to ensure proper jointing of pipe, clear flow, and that line, grade, and that deformations (if applicable) do not exceed SCDOT's allowable limits. The Contractor shall perform these inspections with a combination of either:
  - 1. Video Camera (condition, jointing, & obstructions) & Laser Profiler/Deflectometer (line, grade & shape)
  - 2. 9-Fin Mandrel (shape) for pipes 48-inch diameter and smaller or Direct Measurement (shape) for pipes larger than 48-inch diameter.

## 17.2 QUALITY ASSURANCE

- A. It shall be the responsibility of the Contractor to hire and schedule a reputable, licensed (in South Carolina), experienced video company with a minimum of three (3) years experience in videoing and inspecting storm drainage piping systems to perform the work of this section of the Contract.
- B. Video Inspection(s) of completed pipe installations will be performed after the embankment is in place and all non-asphalt bases and/or subgrades have been completed for at least 30 days. In cases where the Contractor's accepted CPM Schedule indicates that paving operations will be conducted in less than 30 days, upon receipt of a written request, the RCE can allow for an early video inspection to be performed for acceptance. If an early inspection or inspections are performed and the paving does not commence as scheduled, an additional inspection may be performed at the RCE's or SCDOT's discretion.
- C. When third party surveys and inspections are performed by a sub-contractor on behalf of the Contractor, a written report documenting and identifying, in detail, all deviations and non-conforming items shall accompany the submittal of the video survey and documented inspection results to the RCE/Owner. The written report, at a minimum, shall include a dated copy of all video taken from each video camera inspection, pipe location identification, equipment used for inspection, inspector name, inspector field notes regarding deviations or discrepancies, measurements from the pipe inspection (at a minimum to include the following: deviation from design grade, deviation from line, deflection [expressed in inches and % of pipe diameter]), and survey data for all installed pipe.
- D. For HDPE pipe, when installed pipe deflections exceeding 5.0% of the inside diameter have been encountered, The Contractor shall prepare a written report for submittal to the RCE/Owner and/or SCDOT as part of the video inspection requirements for a piped storm drainage system. The submitted written report must address/verify: structural integrity, environmental conditions, design service life of the pipe, and recommended remediation, if required.
- E. Upon acceptance of the documented findings in the written report and video by the Owner/RCE and/or SCDOT, in the event of deviations or deficiencies, the Contractor, at a minimum, shall be required to implement the following:
  - 1. Replace the pipe at locations where the measured deflection exceeds 7.5% of the nominal inside diameter of the pipe.

2. Repair or remediate locations as recommended in the report or required by the Owner/RCE or SCDOT.
3. Replace deficient pipe or product in locations where directed by the Owner/RCE or SCDOT.

### 17.3 MEASUREMENT

- A. The quantity for Video Survey and Report of Piped Storm Drainage System is measured by the Lump Sum (LS), as noted in the Schedule of Prices [Section 1.8], complete, in place and accepted in accordance with the Plans and Specifications.
- B. If the pay item Video Survey and Report of Piped Storm Drainage System is not included in the Contract, the Video Survey and Report of Piped Storm Drainage System work is not measured for payment directly and is considered included in contract unit bid price of either the work of the Contract for Section 310714 and/or Section 310719 of the Contract documents and also as such, maybe directly or indirectly be related to various other items of work in the Contract.

### 17.4 PAYMENT

- A. Payment for the accepted quantity for Video Survey and Report of Piped Storm Drainage System Irrigation Rain, measured in accordance with Subsection 16.3 (above), is determined using the contract unit price for such items of the size, scope and type specified, or as;
- B. Specified elsewhere within the contract documents.
- C. Until the work of this section (video(s) and report) is completed, reviewed by RCE/Owner and/or SCDOT, accepted and/or an approved remediation or replacement plan is in place, if required, along with the RCE/Owner having received a detailed written cost estimate of the work of the remediation/replacement plan, and as such that plan approved and implemented to address identified deficiencies within the installed Storm Drainage Piping System, none of the retainage monies for the work of the Contract related to Section 310714-Storm Sewers and Pipe Culverts or Section 310719 Storm Drainage Structures-Catch Basins, Drop Inlets, Storm Manholes, Junction Boxes and Spring Boxes shall be released.
- D. If the value of the replacement/remediation work as identified by the Contractor's detailed written cost estimate exceeds the amount of retainage being withheld for the work of Section 310714 and/or Section 310719, then the Contractor shall be required to post a separate bond in the amount of the difference in value between the retainage and the presented cost to replace or remediate the piped storm drainage system. The bond shall be in place and in full force and effect until such time as the identified remedial work/replacement work of these sections is completed, in full and accepted by the RCE/Owner and SCDOT.
- E. Payment, whether direct or indirect, is full compensation for the Video Survey and Report of Piped Storm Drainage System as specified or directed and includes all materials, labor, equipment, tools, testing, supplies, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract.

END OF SECTION



**TECHNICAL REQUIREMENTS  
for  
DUKE STREET-PHASE 2 STREETScape**

**CITY of BEAUFORT  
SOUTH CAROLINA**

<u><b>SECTION</b></u>	<u><b>TITLE</b></u>
	Table of Contents
<u>Division 31- SITEWORK</u>	
Section 310100	RECORD DRAWINGS
Section 310201	CLEARING & GRUBBING within RIGHT-OF-WAY
Section 310202	REMOVAL of STRUCTURES and OBSTRUCTIONS
Section 310203	ROADWAY and DRAINAGE EXCAVATION
Section 310208	SUBGRADE
Section 310209	SHOULDERS and SLOPES
Section 310210	FLOWABLE FILL
Section 310305	GRADED AGGREGATE BASE
Section 310403	HMA SURFACE COURSE
Section 310600	MAINTENANCE and TRAFFIC CONTROL
Section 310625	PERMANENT PAVEMENT MARKINGS-PAINT
Section 310627	THERMO-PLASTIC PAVEMENT MARKINGS
Section 310714	STORM SEWER and PIPE CULVERTS
Section 310719	STORM DRAINAGE STRUCTURES
Section 310720	CONCRETE SIDEWALKS, DRIVEWAYS and CURB
Section 310808	MOVING ITEMS-SHRUBBERY & FENCES
Section 310810	SEEDING-GRASSING
Section 310815	EROSION and SEDIMENT CONTROL
Section 310818	INTERLOCKING CONCRETE BRICK PAVERS



## SECTION 310100

### RECORD DOCUMENTS

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. The work under this Section includes, but is not necessarily limited to, the compiling, maintaining, recording and submitting of project record documents as herein specified.
- B. Record documents include, but are not limited to:
  - 1. Drawings;
  - 2. Specifications;
  - 3. Change orders and other modifications to the Contract;
  - 4. Engineer field orders or written instructions, including requests for Information (RFI) and Clarification Memorandums;
  - 5. Reviewed shop drawings, product data and samples;
  - 6. Test records;
  - 7. Copy of Stamped & Approved OCRM Plans;
  - 8. Copy of Notice of Intent (NOI);
  - 9. Copy of Charted Daily Rainfall Amounts;
  - 10. Copy of Weekly Stormwater Pollution Prevention Plan Report;
  - 11. Copy of Monthly Stormwater Pollution Prevention Plan Report Summary;
- C. The Contractor shall maintain an up-to-date set of Record Drawings on the Project site throughout the Contract Time.

##### 1.02 DEFINITIONS

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

Equipment: *page 8 of SCDOT Standard Specifications*  
Materials: *page 8 of SCDOT Standard Specifications*  
Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*  
(the) Specifications: *page 13 of SCDOT Standard Specifications*  
Subbase: *page 14 of SCDOT Standard Specifications*  
Subgrade: *page 14 of SCDOT Standard Specifications*  
Traffic Lane: *page 15 of SCDOT Standard Specifications*  
Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

##### 1.03 RELATED SECTIONS or DOCUMENTS

###### 1.03.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 Specification Sections, apply to this Section.
- B. The Storm Water Pollution and Prevention Plan (C-SWPPP and OS-SWPPP) in effect for this project. The General Contractor and each site or sub-contractor shall be required to attend a preconstruction conference and receive a certificate of attendance for attending, a copy of which shall be kept on site with the required OS-SWPPP Documents.

###### C. 1.03.2 RELATED SECTIONS

###### Division 31:-Sitework

Section 310201- Clearing and Grubbing.  
Section 310203- Roadway and Drainage Excavation  
Section 310208- Subgrade  
Section 310209- Shoulders and Slopes  
Section 310305- Graded Aggregate Base  
Section 310403- Hot Mix Asphalt-Surface Course  
Section 310600- Maintenance and Traffic Control  
Section 310625- Permanent Pavement Markings-Paint

- Section 310627- Thermoplastic Pavement Markings
- Section 310714- Storm Sewers and Culvert Pipes.
- Section 310719- Storm Drainage Structures
- Section 310720- Concrete Curbing, Sidewalk & Driveways.
- Section 310808- Moving Items-Shrubbery, Fences
- Section 310810- Seeding
- Section 310815- Soil Erosion & Sediment Control
- Section 310818- Interlocking Concrete Brick Pavers

#### **1.04 QUALITY ASSURANCE**

##### **1.04.1 MAINTENANCE OF DOCUMENTS AND SAMPLES**

- A. Storage
  - 1. Store documents and samples in the Contractor's field office, apart from documents used for construction.
  - 2. Provide files and racks for storage of documents.
  - 3. Provide locked cabinet or secure storage space for storage of samples.
- B. File documents and samples in accordance with the format and requirements of these Specifications and Contact Documents.
- C. Maintenance
  - 1. Maintain documents in a clean, dry, legible condition and in good order.
  - 2. Do not use record documents for construction purposes.
  - 3. Maintain one copy of all record documents at the site for the Owner or his agent.
- D. Make documents and samples available at all times for inspection by Engineer or other State, Local or Federal Authority of jurisdiction.
- E. Provide a safe, secure and dry location on the site where the required OS-SWPPP documents and weekly inspection reports can be kept and where they can easily and readily be accessed during normal working hours in compliance with the stipulated conditions of the issued NPDES Stormwater Permit to Construct (CGP 2012).
- F. Failure to maintain the Record Documents in a satisfactory manner may be cause for withholding of a certificate for payment or may result in enforcement actions or fines by governing agencies.

##### **1.04.2 RECORD DRAWINGS**

- A. Unless noted otherwise, Record Drawings shall provide dimensions, distances and coordinates to the nearest 0.1 foot.
- B. Unless noted otherwise, Record Drawings shall provide elevations to the nearest 0.01 foot for all pertinent items constructed by the Contractor.

#### **1.05 SUBMITTALS**

- A. At contract/project closeout, the Contractor shall deliver all stipulated Record Documents to the Owner.
- B. Accompany submittal with transmittal letter, in duplicate, containing:
  - 1. Date
  - 2. Project title and number
  - 3. Contractor's name and address
  - 4. Title and number of each individual record document
  - 5. Signature of Contractor or Contractor's authorized representative

## **PART 2 MATERIALS or PRODUCTS**

### **2.01 GENERAL**

Not applicable this Section

## **PART 3 EXECUTION**

### **3.01 GENERAL**

#### **3.01.1 RECORDING**

- A. Label each document "PROJECT RECORD" in neat, large printed letters.
- B. Recording:
  - 1. Record information concurrently with construction progress.
  - 2. Do not conceal, backfill or bury any work until required information is recorded.

#### **3.02 RECORD DRAWINGS**

- A. Record Drawings shall be reproducible, shall have a title block indicating that the drawings are Record Drawings, the name of the company preparing the Record Drawings, and the date the Record Drawings were prepared. The Contractor will provide Mylar copies of the Record Drawings, or it may elect to provide reproducible drawings via another method that is approved by the Owner or the Owner's representative.
- B. Reproducible shall be defined as being translucent so as to allow a blueline or blackline print to be produced of the Record drawing(s).
- C. Legibly mark drawings to record actual construction, including:
  - 1. All Construction
    - a. Changes of dimension and detail.
    - b. Changes made by Requests for Information (RFI), field order, clarification memorandums or by change order.
    - c. Details not on original Drawings.
  - 2. Site Improvements, Including Underground Utilities
    - a. Horizontal and vertical locations of all exposed and underground utilities and appurtenances, both new facilities constructed and those utilities encountered, referenced to permanent surface improvements.
    - b. Location of and dimensions of roadways and parking areas, providing dimensions to back of curb when present.
    - c. The locations shall be referenced to at least two easily identifiable, permanent landmarks (e.g., power poles, valve markers, etc.) or benchmarks and shall be in State Plane Coordinates.
  - 3. Structures
    - a. Depths of various elements of structure/foundation in relation to finish first floor datum or top of wall or finished grade.
    - b. Location of internal and buried utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
    - c. Inverts, lengths and rims of all storm drainage and sanitary sewer pipes and structures and components of the potable water system.

#### **3.03 SPECIFICATIONS - RECORD DRAWINGS**

- A. Legibly mark each section to record:
  - 1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment/structure actually installed if and where required.
  - 2. Number and identify changes to the project's sitework made by Requests for Information (RFI), field order, clarification memorandums, or by change order.

## **PART 4 MEASUREMENT**

### **4.01 GENERAL**

- A. If the pay item for Record Documents is not included in the Contract, then the work related

to Record Documents shall not be considered for payment directly and is considered included in contract unit bid price of the various other applicable items of work.

**PART 5 PAYMENT**

**5.01 GENERAL**

- A. Payment for Record Documents shall be as determined using the contract unit bid price for the pay item, or as;
- B. Specified elsewhere in the contract documents.
- C. Payment is full compensation for Record Documents as specified or directed and includes all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract.

**END OF SECTION**

## SECTION 310201

### CLEARING & GRUBBING

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 Specification Sections, apply to this Section.
- B. This Section contains specifications for the materials, equipment, construction, measurement, and payment for the clearing and grubbing the site in preparation for the implementation work of other Sections of the Contract.
- C. Work of this Section consists of all necessary clearing and grubbing as shown on the Plans and specified herein.
- D. The work of this Section shall not be scheduled until the RCE has inspected the installation of the silt fence, other required soil erosion and sediment protection measures to be installed in compliance with the OS-SWPPP and the required tree protection, provided written notification to the Beaufort County Engineer that all required silt fence and tree protection has been installed and is ready for their inspection and subsequently received notification from the Beaufort County Engineer that the site is in compliance and the tree removal and land disturbance activities may commence.
- E. The work of this Section shall not commence until after all applicable Soil Erosion and Sediment Control measures delineated in the Plans and permits and as required by all Federal, State, County or Local permitting agencies are fully in-place and inspected.

##### 1.02 DEFINITIONS

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

Equipment: *page 8 of SCDOT Standard Specifications*  
Materials: *page 8 of SCDOT Standard Specifications*  
Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*  
(the) Specifications: *page 13 of SCDOT Standard Specifications*  
Subbase: *page 14 of SCDOT Standard Specifications*  
Subgrade: *page 14 of SCDOT Standard Specifications*  
Traffic Lane: *page 15 of SCDOT Standard Specifications*  
Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

##### 1.03 RELATED SECTIONS and DOCUMENTS

###### 1.03.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 and 33 Specification Sections, apply to this Section.

###### 1.03.2 RELATED SECTIONS

Other Sections of the Specifications related to this Section include the following:

Division 31: Sitework

Section 310203- Roadway and Drainage Excavation  
Section 310208- Subgrade  
Section 310209- Shoulders and Slopes  
Section 310305- Graded Aggregate Base  
Section 310403- Hot Mix Asphalt–Surface Course  
Section 310600- Maintenance and Traffic Control  
Section 310625- Permanent Pavement Markings-Paint  
Section 310627- Thermoplastic Pavement Markings  
Section 310714- Storm Sewers and Culvert Pipes.  
Section 310719- Storm Drainage Structures  
Section 310720- Concrete Curbing, Sidewalk & Driveways.  
Section 310808- Moving Items-Shrubbery, Fences  
Section 310810- Seeding

Section 310815- Soil Erosion & Sediment Control  
Section 310808- Interlocking Concrete Brick Pavers

**1.04 QUALITY ASSURANCE**

- A. The Contractor shall have the horizontal layout and flagging of the limits of clearing for the work of this section performed by a surveyor that is duly licensed by the State of South Carolina.
- B. The Contractor shall provide the RCE with a copy of the surveyor's layout plan and allow the RCE sufficient reasonable time to field verify the accuracy and correctness of the limits of clearing prior to the commencement of the clearing and grubbing of the site(s).

**1.05 SUBMITTALS**

- A. None –This Section

**PART 2 MATERIALS or PRODUCTS**

**2.01 MATERIALS**

- A. None specified

**PART 3 EXECUTION**

**3.01 CLEARING AND GRUBBING:**

- A. General: The Contractor shall consult with the Owner and RCE prior to beginning clearing, and a full understanding is to be reached as to procedure. The Contractor shall then conduct clearing and grubbing operations in strict accordance with these agreements.
  - 1. The Contractor's operations shall be conducted with full consideration of all proper and legal rights of the Owner, adjacent property owners and the public, and with the least possible amount of inconvenience to them.
- B. Construction Site(s): The work shall consist of clearing and grubbing within the limits of construction site(s), road right(s)-of-way and elsewhere as indicated or necessary to complete the work of the contract. All trees, stumps, roots, shrubs and brush shall be removed as required for construction. Stumps and roots shall be grubbed and completely removed. The resulting depressions shall be filled with suitable material placed and compacted in accordance with Section 310203. Sound trees and shrubs which do not interfere with construction shall remain in place, and shall be adequately protected from damage. Cleared and grubbed material, including debris and rubbish, shall be removed from the project site/lands and disposed of off-site at an approved location in compliance with all Federal, State or Local Laws, Ordinances or requirements or completely burned or otherwise dispose of as directed by the RCE.
- C. Pipelines: Clearing and grubbing along pipelines shall be done prior to pipe installation, and shall be confined to the right-of-way limits or easements as specified below. Adjacent property outside the right-of-way limits shall be protected against damage. All trees, stumps, roots, shrubs and brush shall be removed as required for construction. Stumps and roots shall be grubbed and completely removed. Sound trees and shrubs which do not interfere with construction shall remain in place, and shall be adequately protected from damage. Cleared and grubbed material, including debris and rubbish, shall be disposed of off-site at an approved location in compliance with all Federal, State or Local Laws, Ordinances or requirements as directed by the RCE; no burning within pipeline right-of-way will be allowed.
  - 1. Felled trees 6-inches and larger in diameter shall be trimmed into normal 63-inch lengths, unless otherwise directed by the RCE. The logs shall be neatly stacked along the edge of the right-of-way or on the site in accessible locations for removal from site.
  - 2. Limits of the pipe laying operation shall be confined to the right-of-way or easements or areas noted on the plans. The width of clearing shall be held to a minimum and shall be no more than specified on the plans, without written consent of the RCE.

- D. Minor Structures: Minor Structures shall be removed and disposed of as noted on the plans or as directed by the RCE.
- E. Burning: Burning of cleared material shall be accomplished in strict compliance with all applicable Local, State and Federal regulations pertaining to open burning and smoke abatement.

#### **PART 4 MEASUREMENT**

##### **4.01 GENERAL**

- A. The quantity for the pay item Clearing and Grubbing within Roadway or Clearing and Grubbing within Right-of-Way/Easement or the Clearing and Grubbing within the Site or Project Boundaries is measured in accordance with the pay unit specified in the Contract.
- B. If the pay unit specified is acre, the quantity is the surface area over which the clearing and grubbing operations were performed and is measured by the acre (ACRE), complete, and accepted by the RCE.
- C. If the unit of payment is lump sum (LS), no specific measurement is required or made.
- D. If a pay item Clearing and Grubbing within Roadway or Clearing and Grubbing within Right-of-Way/Easement is not included in the Contract, the Clearing and Grubbing within Roadway or Clearing and Grubbing within Right-of-Way/Easement or the Clearing and Grubbing within the Site or Project Boundaries is not measured for payment directly and is considered included in contract unit bid price of the various other items of work.

#### **PART 5 PAYMENT**

##### **5.01 GENERAL**

- A. Payment for the accepted quantity for Clearing and Grubbing within Roadway or Clearing and Grubbing within Right-of-Way/Easement or the Clearing and Grubbing within the Site or Project Boundaries, measured in accordance with subsection 201.5 of the SCDOT Standard Specifications-2007 edition, is determined using the contract unit bid price for the pay item or as;
- B. Specified elsewhere in the contract documents for Clearing and Grubbing within Roadway or Clearing and Grubbing within Right-of-Way/Easement or the Clearing and Grubbing within the Site or Project Boundaries.
- C. Payment is full compensation for Clearing and Grubbing within Roadway or Clearing and Grubbing within Right-of-Way/Easement or the Clearing and Grubbing within the Site or Project Boundaries as specified or directed and includes all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract.

**END OF SECTION**

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## SECTION 310202

### REMOVAL OF STRUCTURES AND OBSTRUCTIONS

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. This section contains specifications for the material, equipment, construction, measurement, and payment for the removal, wholly or in part, and satisfactory disposal of buildings, fences, guardrail, structures, old pavements, abandoned pipelines, underground storage tanks, and other obstructions that are not designated or permitted to remain, except for the obstructions removed and disposed of under other items in the Contract.
- B. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 Specification Sections, apply to this Section.
- C. This Section contains specifications for the materials, equipment, construction, measurement, and payment for the Removal of Structures and Obstructions within the rights-of ways within the sites in preparation for the implementation work of other Sections of the Contract.
- D. Work of this Section consists of all necessary Removal of Structures and Obstructions as shown on the Plans and specified herein.
- E. The work of this Section shall not commence until after all applicable Soil Erosion and Sediment Control measures delineated in the Plans and permits and as required by all Federal, State, County or Local permitting agencies are fully in-place and inspected.

##### 1.02 DEFINITIONS

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

- Equipment-page 8 of SCDOT Standard Specifications, 2007 edition
- Materials-page 8 of SCDOT Specifications
- Road, Roadbed & Roadway-page 11 of SCDOT Specifications
- (the) Specifications page 13 of SCDOT Specifications
- Traffic Lane-page 15 of SCDOT Specifications
- Travelway or Traveled Way-page 15 of SCDOT Specifications

##### 1.03 RELATED SECTIONS and DOCUMENTS

###### 1.03.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 and 33 Specification Sections, apply to this Section.

###### 1.03.2 RELATED SECTIONS

Other Sections of the Specifications related to this Section include the following:

Division 31:-Sitework

- Section 310100- Record Documents
- Section 310201- Clearing and Grubbing.
- Section 310203- Roadway and Drainage Excavation
- Section 310208- Subgrade
- Section 310209- Shoulders and Slopes
- Section 310305- Graded Aggregate Base
- Section 310403- Hot Mix Asphalt-Surface Course
- Section 310600- Maintenance and Traffic Control
- Section 310625- Permanent Pavement Markings-Paint
- Section 310627- Thermoplastic Pavement Markings
- Section 310714- Storm Sewers and Culvert Pipes.
- Section 310719- Storm Drainage Structures

Section 310720- Concrete Curbing, Sidewalk & Driveways.  
Section 310808- Moving Items-Shrubbery, Fences  
Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control  
Section 310818- Interlocking Concrete Brick Pavers

#### 1.04 QUALITY ASSURANCE

- A. The Contractor shall have the items to be removed clearly flagged and inspected by the RCE prior to the commencement of their demolition or removal.
- B. All materials generated by the work of this section shall be disposed of off-site at an approved disposal site that is in compliance with all state, Federal and/or Local Laws, and Regulations. Disposal shall be at no extra cost to the Owner other than the prices bid in the Contract.

#### 1.05 SUBMITTALS

- A. None –This Section

### PART 2 MATERIALS or PRODUCTS

#### 2.01 MATERIALS

- A. None specified
- B. Equipment: Ensure that the equipment necessary for the proper construction of the work is on site, in acceptable working condition, and approved by the RCE as to both type and condition before the start of work under this section. Provide sufficient equipment to enable prosecution of the work in accordance with the project schedule and completion of the work in the specified time.

### PART 3 EXECUTION

#### 3.01 REMOVAL OF STRUCTURES and OBSTRUCTIONS:

- A. General: The Contractor shall consult with the Owner and RCE prior to beginning clearing, and a full understanding is to be reached as to procedure. The Contractor shall then conduct clearing and grubbing operations in strict accordance with these agreements.
  - I. The Contractor's operations shall be conducted with full consideration of all proper and legal rights of the Owner, adjacent property owners and the public, and with the least possible amount of inconvenience to them.
- B. Execution: Raze and dispose of all buildings, foundations, structures, guardrail, fences, and any other obstructions that are on the right-of-way and are not designated to remain. Include structures (buildings) to be cut off at the right-of-way line and structures (buildings) and appurtenances located entirely outside the right-of-way limits when such items are indicated on the Plans as items to be demolished.
- C. Construction Site(s): The work shall consist of clearing and grubbing within the limits of construction site(s), road right(s)-of-way and elsewhere as indicated or necessary to complete the work of the contract. Cleared and grubbed material, including debris and rubbish, shall be removed from the project site/lands and disposed of off-site at an approved location in compliance with all Federal, State or Local Laws, Ordinances or requirements or completely burned or otherwise dispose of as directed by the RCE.
- D. Minor Structures: Minor Structures shall be removed and disposed of as noted on the plans or as directed by the RCE.
- E. Removal and Disposal of Bridges, Culverts, and Other Drainage Structures: Do not remove bridges, culverts, or other drainage structures in use by traffic until satisfactory arrangements have been made to accommodate traffic. Adequately shore any excavation adjacent to the structure or to its approaches to avoid damage to them or to traffic.
- F. Removal and Disposal of Pipe and Tile Drains: When noted on the Plans or when required by the RCE, remove existing pipes, pipe arches, tile drains, or other drainage devices located within the extreme limits of the project, including bridge sites. Remove pipe and tile in a careful manner and neatly store them at locations designated by the RCE unless it is to be re-laid as a part of the

Contract. Any damage to pipe or tile during removal and storage because of negligence or improper handling or storing methods is the responsibility of the Contractor. Properly dispose of pipe removed and designated by the RCE as having no value.

- G. Removal and Disposal of Pavements, Sidewalks, and Curbs: If so designated, remove and dispose of the following items unless such material is suitable for use in constructing embankments: existing Portland cement concrete, brick, or stone pavements with or without asphalt overlays, concrete, brick or stone sidewalks, concrete gutter or integral curb and gutter curb, asphalt concrete pavement, or asphalt curb. If suitable and approved by the RCE, this material may be used to construct embankments.
- H. Removal and Disposal of Pavement: As directed by the RCE, saw cut pavement as necessary to produce a uniform line between the pavement to be retained and to be removed.
  - I. Remove pipe or tile if any part of which conflicts with the installation of a new drainage structure. If not otherwise specified, include the cost of removal in the contract price bid for the new structure. Likewise, no direct payment will be made for the removal of pipe or tile that is to be re-laid at the same or other locations on the project.

#### **PART 4 MEASUREMENT**

##### **4.01 GENERAL**

- A. Unless otherwise specified, the pay items Removal of Structures and Obstructions, Removal and Disposal Item (if numbered), and Removal and Disposal of Existing Bridge are paid for on a lump sum (LS) basis; and therefore, there is no specific measurement of quantities for these items.
- B. The quantity of material used to backfill areas that is excavated is included in the lump sum price of the work of the Contract.

#### **PART 5 PAYMENT**

##### **5.01 GENERAL**

- A. Payment for the accepted quantity for each pay item, measured in accordance with Subsection 202.5 of the SCDOT Specifications, or as modified above in Part 4 is determined using the contract unit bid price for the applicable item. Payment includes all direct and indirect costs and expenses necessary to complete the work.
- B. Payment for lump sum pay item Removal of Structures and Obstructions is full compensation for removing and disposing of structures and obstructions as specified or directed and includes all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract.
- C. If there is no pay item for the removal and disposal of a structure or obstruction indicated on the Plans, no direct payment is made for work necessary to remove and dispose of the structure or obstruction, and the cost for the work is considered included in the contract unit bid price of various other pay items of the Contract.

**END OF SECTION**

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## SECTION 310203

### UNCLASSIFIED EXCAVATION

#### ROADWAY AND DRAINAGE EXCAVATION

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 and 33 Specification Sections, apply to this Section.
- B. This section contains the specifications for the materials, equipment, construction, measurement, and payment for the removal, placement, compaction, and satisfactory disposal of all materials encountered within the limits of the right(s)-of-way, easement(s), project site and borrow pit(s) necessary for the construction of the roadway and site as well as associated site improvements.
- C. This work also consists of the removal and replacement of unsuitable material in the subgrade or under structures, the stripping of the roadway and site as well as material pits, and the excavation work necessary for the formation, compaction, and shaping of embankments, subgrade, shoulders, slopes, and intersections.
- D. The work of this section consists of all labor, materials, and equipment necessary for earthwork and operations related to Roadway and Drainage Excavation. This work includes, but is not limited to, excavating all classes of material encountered, handling, storage, transportation and disposal of all excavated and unsuitable material, construction of fills and embankments, backfilling around structures, backfilling trenches and pits, compacting, sheeting, shoring and bracing, preparation of subgrade, surfacing and grading, and any other similar, incidental, or appurtenant earthwork operations which may be necessary to properly complete the work of this section.

##### 1.02 DEFINITIONS

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

Equipment: *page 8 of SCDOT Standard Specifications*  
Materials: *page 8 of SCDOT Standard Specifications*  
Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*  
(the) Specifications: *page 13 of SCDOT Standard Specifications*  
Subbase: *page 14 of SCDOT Standard Specifications*  
Subgrade: *page 14 of SCDOT Standard Specifications*  
Traffic Lane: *page 15 of SCDOT Standard Specifications*  
Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

##### 1.03 RELATED SECTIONS and DOCUMENTS

###### 1.03.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 and 33 Specification Sections, apply to this Section.

###### 1.03.2 RELATED SECTIONS

###### Division 31:-Sitework

Section 310201- Clearing and Grubbing.  
Section 310208- Subgrade  
Section 310209- Shoulders and Slopes  
Section 310305- Graded Aggregate Base  
Section 310403- Hot Mix Asphalt–Surface Course  
Section 310600- Maintenance and Traffic Control  
Section 310625- Permanent Pavement Markings-Paint  
Section 310627- Thermoplastic Pavement Markings  
Section 310714- Storm Sewers and Culvert Pipes.  
Section 310719- Storm Drainage Structures

Section 310720- Concrete Curbing, Sidewalk & Driveways.  
Section 310808- Moving Items-Shrubbery, Fences  
Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control  
Section 310808- Interlocking Concrete Brick Pavers

#### 1.04 QUALITY ASSURANCE

- A. Benchmarks: The Contractor shall establish and maintain a minimum of two corresponding permanent bench marks on the site for reference. All vertical dimensions shall be checked from these benchmarks.
- B. Finish Grades: Finished grades, as used herein, mean the final grade elevations indicated on the drawings. Should finished grades shown on spot elevations conflict with those shown by the contours, the spot elevations shall govern.
- C. Preliminary Earthwork: Contractor shall remove soft organic type material from the wet areas within the construction areas. This material, if suitable, may be used, after reaching near optimum moisture content, as topsoil for final dressing.
- D. Borrow Pits: Submit representative samples of all fill material requiring compaction to the Designated Testing Laboratory. Material and borrow pits shall be approved by the RCE prior to the commencement of filling operations. If the quantity available from site grading is not sufficient, purchasing, hauling, and blending of fill shall be done by the Contractor.
- E. Controlled Fill:
1. Class I Fill: Is all structural fill to be used underside of slabs and to support foundations or footings.
  2. Class II Fill: Is all fill below finish grade immediately behind walls and in trenches and embankments under walks, drives, parking areas, and all areas to be paved. Top two-feet of this fill shall be Class I Fill or as recommended by Geo-technical Engineer or as directed by the RCE.
  3. Class III Fill: Is all backfill used for filling trenches not under paved areas, slabs, foundations or footings.
- F. Insufficient Fill Material: If quantity of grading material is insufficient to provide finish grade elevations indicated on drawings, Contractor shall have anticipated obtaining additional fill material of specified quality in the Bid.
- G. Excess Cut Material: If quantity of grading material is in excess of quantities necessary to provide finish grade elevations indicated on drawings, any excess material shall be removed from the site by the Contractor and disposed of at no additional cost to the Owner or if approved by the RCE, it may be deposited and dressed on site in locations directed by the RCE.
- H. Elevations shown on the Drawings as existing are taken from the best existing data and are intended to convey reasonably accurate information about existing elevations. The Contractor should satisfy himself as to exact quantities of excavation and fill materials required to complete the work as part of the Bid.
- I. Safety: The Contractor shall perform all earthwork operations in a safe and proper manner. All applicable OSHA regulations shall be observed and practiced by the Contractor. Safety on the jobsite is the Contractor's responsibility. The Contractor shall comply with all local regulations and with the Manual of Accident Prevention in Construction of the Associated General Contractors of America, Inc.
- J. Storage: Temporary stockpile locations shall be coordinated with the Owner. Stockpiles shall not block existing surface drainage or access to existing equipment, valves, hydrants, etc. Practice effective erosion control measures around all stockpiles in accordance with the OCRM Stormwater Permit and the SWPPP.
- K. Sheeting, Shoring and Bracing: The Contractor shall furnish, place and maintain all sheeting, shoring, bracing and timbering required to properly support any excavation or trenching to prevent all movement of soil, pavement, structures or utilities outside of the excavation or trench. Sheeting, shoring and bracing shall be placed to allow the work to be constructed to the lines and grades

shown on the drawings. All sheeting, shoring and bracing shall be removed from the excavation, unless otherwise directed by the RCE.

- L. Soils Report: The recommendations found in the Soils Investigation and Geotechnical Report shall be followed. This document, if available, is incorporated by reference as part of these specifications. See the Supplemental General Conditions for identification of the geotechnical report.

**1.05 SUBMITTALS**

- A. If requested by the RCE, the Contractor shall provide analysis of questionable fill material from the project or fill material imported from offsite.

**PART 2 MATERIALS or PRODUCTS**

**2.01 FILL MATERIAL**

- A. Sand Fill: Material shall consist of a clean sand with a fineness modulus of 1.6 to 3.1 and containing not more than 10 percent by weight any material finer than No. 200 U.S. Standard Sieve.
- B. Earth Fill: Material shall consist of inorganic material free of roots, cobbles and boulders and classified as GM, GC, SW, SP, SM, ML, SC, or CL by ASTM D2487-85 "Standard Methods for Classification of Soils for Engineering Purposes". Earth Fill shall also conform to the following:
  - 1. Liquid Limit = 50 maximum
  - 2. Plasticity Index = 25 maximum
  - 3. Dry Unit Weight = 100 pcf minimum maximum density
- C. Pervious Fill: Material shall consist of crushed stone or gravel. Size and gradation shall be #7 size as defined by ASTM C33-86, "Standard Specification for Concrete Aggregates" (Nominal size 3/4" to #4 Sieves).

Total Percent Passing Sieve (By Weight):

Square Sieve	1-1/2"	1"	3/4"	1/2"	3/8"	#4	#8
Size #7 (% passing)	100	100	100	90-100	40-70	0-15	0-5

**2.02 UNSUITABLE SITE FILL MATERIAL**

- A. Material which does not conform to the above classifications (soil classification MH, OH, OL and PT) may be used as Site Fill material identified on the drawings as "spoil areas" and under topsoil to establish site grades only when approved by the RCE.

**2.03 TOPSOIL**

- A. Topsoil shall be dark organic weed free loam which is free of muck.

**PART 3 EXECUTION**

**3.01 ROADWAY and DRAINAGE EXCAVATION/GRADING**

- A. Remove all organic matter, stumps and other deleterious matter. Predensify the areas to be filled or upon which structures are to be placed. A loaded dump truck or other rubber tired equipment should be used for the predensification. Overlapping passes of the vehicle should be made across the site in one direction and then at right angles to the original direction of rolling.
- B. Any yielding, pumping or soft areas should be cut out and replaced with fill compacted as described herein.
- C. Finish grading outside of building, where not shown otherwise, shall be given uniform slopes between points for which finished grades are shown, or between points and existing established grade.
- D. Provide drainage away from building walls, where not shown otherwise on the drawings, at a grade of at least 3-inches in 10-feet. If required, provide shallow swales where indicated on plans at a minimum width of 6-feet and minimum depth of 3-inches with a minimum flow line grade of not less than 1/8-inch per foot. Provide rounding at top and bottom of banks and at other breaks in grade.

### **3.02 RAINWATER, SURFACE WATER, AND BACKUP**

- A. Protect all work, including excavations and trenches, from rainwater, surface water, and back-up of drains and sewers. Furnish all labor, pumps, shoring, enclosures, and equipment necessary to protect and to keep work free of water.

### **3.03 UNDERCUTTING**

- A. During construction, soils classified MH, OH, OL and PT shall be undercut to a depth as shown on the drawings and replaced with compacted structural fill.
- B. Stockpile material by Fill Material classification in on site locations where it will not interfere with construction operations. Materials stockpiled shall be placed in a manner to afford drainage. Protect all stockpiled material against erosion.

### **3.04 PREDENSIFICATION**

- A. After undercutting and prior to filling, the newly exposed subgrade enclosed by a line drawn 5'-0" outside the building/construction area shall be scarified and predensified by rolling the surface with compaction equipment. This work shall be performed in the presence of the RCE.
- B. Rolling shall consist of a minimum of eight (8) overlapping coverages in each of two perpendicular directions and shall be continued until density tests at a depth of 6-inches below the surface indicate the attainment of 98% of the Standard Proctor Maximum Dry Density (ASTM D698).
- C. Subgrades where footings for structures and/or the pavement/roadway structure shall bear on expansive soils should not be allowed to dry or to become excessively wet prior to the placement of fill and final build out of the structure/pavement/roadway. The filling shall begin on the same day excavations are made.

### **3.05 INSPECTION OF SUBGRADE**

- A. During predensification, the Designated Testing Laboratory shall inspect the newly exposed subgrade to detect soft, loose, or unstable zones.
- B. Replace soft, loose, or unstable zones with well grade A-1 [Class 1] (AASHTO M 145) soils.

### **3.06 INSTALLATION OF CLASS I FILL**

- A. Class I Fill shall be Earth Fill material.
- B. Compact within  $\pm 3$  percent of optimum moisture content in maximum 12 inch lifts so as to be not less than 98 percent of the Standard Proctor maximum density (ASTM D 698).

### **3.07 INSTALLATION OF CLASS II FILL:**

- A. Class II Fill shall be Earth Fill materials except that fill immediately behind walls and under floor slabs, only, shall be Sand Fill or Pervious Fill material as indicated on drawings.
- B. Compact within  $\pm 3$  percent of optimum moisture content in maximum 12 inch lifts so as to be not less than 95 percent of the Standard Proctor maximum density (ASTM D698).

### **3.08 INSTALLATION OF CLASS III FILL**

- A. Compact fill in utility trenches not under buildings or paved areas to not less than 90 percent of the Standard Proctor maximum density (ASTM D698). Documented compaction testing in 12" lifts shall be required to be provided upon request by the RCE.

### **3.09 GROUNDWATER CONTROL**

- A. Maintain water table not less than 3-feet below subgrades during operations which require heavy wheeled or roller equipment and below excavation level during placement of structural fill or crushed aggregate subgrade stabilization as directed by the Engineer.
- B. Provide temporary ditches as necessary during construction to control seepage from springs and direct the water away from the fill areas. If so required by contract conditions, the Contractor shall be responsible for updating and implementing the project's Stormwater Prevention and Pollution Plan (SWPPP) to include any and all temporary ditching and associated installation of required BMPs (Best Management Practices).
- C. Install storm sewers, sanitary sewers, potable water lines and dedicated fire lines as shown on the

drawings and in compliance with Sections 330901 and 33902 of these specifications.

### **3.10 EXCAVATION STABILIZATION**

- A. Where groundwater control cannot be accomplished, stabilize bottom of excavation with the installation of 1-foot of crushed aggregate Size #57 (1" to #4) prior to placement of compacted fill.
- B. After stabilization of excavation bottom, initial 1-foot "bridge-lift" of fill may be granular (SP, SW, GP OR GW) fill followed by placement of Controlled Fill.

### **3.11 COMPACTION TESTING**

- A. Field density tests shall be made by a qualified and accredited Designated Testing Laboratory selected and paid by the Contractor.
- B. Class I Fills: One field density test for each 2000 SF of area after each one-foot lift or one test per 300 linear feet of trench or roadway per one foot lift.
- C. Class II Fills: One field density test for each 2000 SF of area after each two-foot lift or one test per 300 linear feet of trench or roadway per one foot lift.
- D. Class III Fill: One field density test per 300 lineal feet of trench at a depth two feet below finish grade.
- E. Exact locations of tests shall be as directed by the RCE. Two copies of all test results shall be submitted to the RCE. The Contractor shall be responsible for maintaining a copy of all test results on file at the jobsite.
- F. The Contractor shall be responsible for:
  - 1. Notifying the laboratory on conditions requiring testing.
  - 2. Coordinating the laboratory for field testing.
  - 3. Providing representative fill soil samples to the laboratory for testing purposes. Provide 50 pound samples for each fill soil.

## **PART 4 MEASUREMENT**

### **4.01 GENERAL**

- A. Measurement for the work of this Section shall be in accordance with Section 203.5 of the SCDOT Standard Specifications, most current edition. It shall address the following categories of work:
  - 1. The quantity for the pay item Unclassified Excavation, Rock Excavation, or Borrow Excavation when included in the Contract. The method of measurement shall be the volume of material excavated as prescribed and measured by the cubic yard (CY).
    - a. The quantity shall be the material acceptably excavated.
    - b. The quantity shall be as measured in its original position and determined from cross-sections by the method of average-end-areas, complete, and accepted.
  - 2. The volume measured for the construction of a watercourse (i.e. ditch or channel excavation) is the material removed from the end of the structure to the end of the watercourse.
  - 3. Unclassified Excavation- On all projects where the Plan quantity of Unclassified Excavation is computed from cross-sections included in the Plans, no field measurement is needed unless an error in the Plans or calculations is found, there are different site conditions, or a revision to the work is required. Revision to the computed plan quantity is made in accordance with Subsection 203.5 (3) subsections A through G of the SCDOT Standard Specifications.
  - 4. Muck Excavation- the quantity for Muck excavation is the volume of the material excavated as prescribed and is measured by the cubic yard (CY), complete, and accepted. The volume is calculated per Subsection 203.5 (4) of the SCDOT Standard Specifications.
  - 5. Station Grading- The quantity for the pay item Station Grading is the length of the roadway where material excavation at intersections, driveways, private entrances, or other miscellaneous excavation is necessary for the roadway construction and is measured by the station (STA) along the length of the centerline of the road (a station is 100 feet), complete, and accepted. See Subsection 203.5 (5) of the SCDOT Standard Specifications for exceptions.

6. Site Excavation-when the Contract includes the pay item Site Excavation, the Contractor is responsible for inspecting the site to determine the quantities of material necessary to construct the roadway to the required typical section. No field measurement is made for this item because payment is made on a lump sum (LS) basis.
7. Pipe Excavation-no payment will be made for the excavation of pipe or associated structures. That cost shall be included in the price bid in the contract for those items of work related to the installation of those improvements.

## **PART 5 PAYMENT**

### **5.01 GENERAL**

- A. Unless otherwise specified, payment for the accepted quantity of material excavated as specified herein, measured in accordance with Subsection 203.5 of the SCDOT Standard Specifications for Highway Construction is determined using the contract bid unit price for the applicable pay item, or as;
- B. Specified elsewhere in the contract documents for Roadway and Drainage Excavation.
- C. Payment is full compensation for performing the earthwork prescribed in this section, including all costs of dewatering within the right-of-way, easement(s) or project site and, if applicable, includes excavating of material; forming and compacting embankments; disposing of surplus or unsuitable material; striping, preparing, and compacting of subgrade and shoulders; dewatering borrow pits (when necessary), terracing borrow pits; removing and resetting of mail boxes, guide signs, etc.; and all other materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to satisfactorily complete the work in accordance with the Plans, the specifications, and other terms of the Contract.
- D. Borrow Pits- For explanation of payment see Subsection 203.6-(2) of the SCDOT Standard Specifications for Highway Construction, current edition.
- E. Muck Excavation- For explanation of payment see Subsection 203.6-(3) of the SCDOT Standard Specifications for Highway Construction, current edition.
- F. Payment for acceptable quantity for Station Grading- for explanation of payment for this item see Subsection 203.6-(6) of the SCDOT Standard Specifications for Highway Construction, current edition.
- G. Site excavation- for explanation of payment see Subsection 203.6-(7) of the SCDOT Standard Specifications for Highway Construction, current edition.

**END OF SECTION**

## SECTION 310208

### SUBGRADE

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. This Section contains specifications for the materials, equipment, construction, measurement, and payment for the construction and preparation of the subgrade intended to receive the pavement structure, sidewalk, curb, curb and gutter, and shoulders.

##### 1.02 DEFINITIONS

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

Equipment: *page 8 of SCDOT Standard Specifications*  
Materials: *page 8 of SCDOT Standard Specifications*  
Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*  
(the) Specifications: *page 13 of SCDOT Standard Specifications*  
Subbase: *page 14 of SCDOT Standard Specifications*  
Subgrade: *page 14 of SCDOT Standard Specifications*  
Traffic Lane: *page 15 of SCDOT Standard Specifications*  
Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

##### 1.03 RELATED SECTIONS and DOCUMENTS

###### 1.03.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Divisions 31 and 33 Specification Sections, apply to this Section.

###### 1.03.2 RELATED SECTIONS

Other Sections of these Specifications related to this Section include the following:

Division 31:-Sitework

Section 310201- Clearing and Grubbing.  
Section 310203- Roadway and Drainage Excavation  
Section 310209- Shoulders and Slopes  
Section 310305- Graded Aggregate Base  
Section 310403- Hot Mix Asphalt–Surface Course  
Section 310600- Maintenance and Traffic Control  
Section 310625- Permanent Pavement Markings-Paint  
Section 310627- Thermoplastic Pavement Markings  
Section 310714- Storm Sewers and Culvert Pipes.  
Section 310719- Storm Drainage Structures  
Section 310720- Concrete Curbing, Sidewalk & Driveways.  
Section 310808- Moving Items-Shrubbery, Fences  
Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control  
Section 310808- Interlocking Concrete Brick Pavers

##### 1.04 QUALITY ASSURANCE

- A. The Contractor shall have the vertical and horizontal layout of the work of this section performed by a surveyor that is duly registered and licensed by the State of South Carolina.
- B. The Contractor shall provide the RCE with a copy of the surveyor's layout plan and cut sheet prior to the commencement of the preparation of the subgrade.

##### 1.04 SUBMITTALS

- A. None –This Section

**PART 2 MATERIALS or PRODUCTS**

**2.01 MATERIALS**

- A. None specified- This Section

**PART 3 EXECUTION**

**3.01 GENERAL**

- A. Identify and remove all soft, unstable or unsuitable material that does not compact readily and meet minimum specified standards. Replace this material with satisfactory material as directed by the RCE or Geo-technical Engineer. Fill all holes, ruts or depressions that develop in the subgrade with approved material, bring the subgrade to line and grade, and properly compact.
- B. If the subgrade is too dry to compact properly, sprinkle with water to wet it, if deemed desirable by the RCE or Geo-technical Engineer, to secure proper compaction.
- C. Compact the subgrade to a minimum of 18 inches horizontally outside the area occupied by the pavement/roadway structure, including curb and gutter and sidewalk as applicable, to not less than 95.0% of maximum density. Maximum densities are to be determined by either SC-T-25 (Method A or C as applicable) or SC-T-29.
- D. The subgrade shall be protected and maintained in accordance with SCDOT 208.4.2.
- E. The subgrade shall be fine graded in accordance with SCDOT 208.4.3.

**PART 4 MEASUREMENT**

**4.01 GENERAL**

- A. The quantity for the pay item Fine Grading is the surface area of the subgrade that is constructed and prepared for the intended pavement structure, sidewalk, and shoulders and is measured by the square yard (SY), complete, and accepted.
- B. If the pay item Fine Grading is not included in the Contract, the grading work is not measured for payment directly and is considered included in contract unit bid price of the various other items of work.

**PART 5 PAYMENT**

**5.01 GENERAL**

- A. Payment for the accepted quantity for Fine Grading, measured in accordance with Subsection 208.5 of the SCDOT Standard Specifications-2007 edition, is determined using the contract unit bid price for the pay item or as;
- B. Specified elsewhere in the contract documents.
- C. Payment is full compensation for grading and forming the subgrade as specified or directed and includes all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract.

**END OF SECTION**

## SECTION 310209

### SHOULDERS AND SLOPES

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. This section contains specifications for the materials, equipment, construction, measurement and payment for the excavating, hauling, placing, and maintaining of approved materials on shoulders in accordance with these specifications, and in conformity with the lines, grades, and typical cross-sections shown on the Plans or as specified. It also includes excavating, hauling, placing, and maintaining approved material on cut and fill slopes or other designated areas.
- B. It is the intent of this specification that the best available materials be utilized in the construction of shoulders and slopes in order to enhance and achieve the establishment of permanent vegetation and minimize the effects of erosion.

##### 1.02 DEFINITIONS

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

Equipment: *page 8 of SCDOT Standard Specifications*  
Materials: *page 8 of SCDOT Standard Specifications*  
Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*  
(the) Specifications: *page 13 of SCDOT Standard Specifications*  
Subbase: *page 14 of SCDOT Standard Specifications*  
Subgrade: *page 14 of SCDOT Standard Specifications*  
Traffic Lane: *page 15 of SCDOT Standard Specifications*  
Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

##### 1.03 RELATED SECTIONS and DOCUMENTS

###### 1.03.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 Specification Sections, apply to this Section.

###### 1.03.2 RELATED SECTIONS

Other Sections of the Specifications that relate to this Section are as follows:

Division 31:-Sitework

Section 310201- Clearing and Grubbing.  
Section 310203- Roadway and Drainage Excavation  
Section 310208- Subgrade  
Section 310305- Graded Aggregate Base  
Section 310403- Hot Mix Asphalt-Surface Course  
Section 310600- Maintenance and Traffic Control  
Section 310625- Permanent Pavement Markings-Paint  
Section 310627- Thermoplastic Pavement Markings  
Section 310714- Storm Sewers and Culvert Pipes.  
Section 310719- Storm Drainage Structures  
Section 310720- Concrete Curbing, Sidewalk & Driveways.  
Section 310808- Moving Items-Shrubbery, Fences  
Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control  
Section 310808- Interlocking Concrete Brick Pavers

#### 1.04 QUALITY ASSURANCE

- A. Benchmarks: Establish and maintain two corresponding permanent bench marks on the site for reference. All vertical dimensions shall be checked from these benchmarks.
- B. Finish Grades: Finished grades, as used herein, mean the final grade elevations indicated on the drawings. Should finished grades shown on spot elevations conflict with those shown by the contours, the spot elevations shall govern.
- C. Preliminary Earthwork: Contractor shall remove soft organic type material from the wet areas within the construction areas. This material shall be used after reaching near optimum moisture content as topsoil for final dressing.
- D. Borrow Pits: Submit representative samples of all fill material requiring compaction to the Designated Testing Laboratory. Material and borrow pits shall be approved by the Engineer prior to filling operations. If the quantity available from site grading is not sufficient, purchasing, hauling, and blending of fill shall be done by the Contractor.

##### CONTROLLED FILL

- 1. Class I Fill: Is all structural fill to underside of slabs and to support foundations or footings.
  - 2. Class II Fill: Is all fill below finish grade immediately behind walls and in trenches and embankments under walks, drives, parking areas, and all areas to be paved. Top two-feet of this fill shall be Class I Fill.
  - 3. Class III Fill: Is all backfill used for filling trenches not under paved areas, slabs, foundations or footings.
- E. Insufficient Fill Material: If quantity of grading material is insufficient to provide finish grade elevations indicated on drawings, Contractor shall obtain additional fill material of specified quality at no additional cost to the Owner in accordance with the terms of the Contract and SCDOT Standard Specifications.
  - F. Excess Cut Material: If quantity of grading material is in excess of quantities necessary to provide finish grade elevations indicated on drawings, any excess suitable material shall be deposited and dressed on site as directed by the RCE. Any excess cut material that is deemed unsuitable shall be removed from the Site at no additional cost to the Contract.
  - G. Elevations shown on the Drawings as existing are taken from the best existing data and are intended to convey reasonably accurate information about existing elevations. The Contractor should satisfy himself as to exact quantities of excavation and fill materials required to complete the work.
  - H. Safety: The Contractor shall perform all earthwork operations in a safe and proper manner. All applicable OSHA regulations shall be observed and practiced by the Contractor. Safety on the jobsite is the Contractor's responsibility. The contractor shall comply with all local regulations and with the Manual of Accident Prevention in Construction of the Associated General Contractors of America, Inc.
  - I. Storage: Temporary stockpile locations shall be coordinated with the RCE. Stockpiles shall not block existing surface drainage or access to existing equipment, valves, hydrants, etc. Practice effective erosion control measures around all stockpiles. Stockpiled materials that are to be left without disturbance for greater than 14 calendar days shall be stabilized by means of temporary seeding. The costs associated with temporary seeding of stockpiled materials shall be included in the unit price bid for this Section.
  - J. Sheeting, Shoring and Bracing: The Contractor shall furnish, place and maintain all sheeting, shoring, bracing and timbering required to properly support any excavation or trenching to prevent all movement of soil, pavement, structures or utilities outside of the excavation or trench. Sheeting, shoring and bracing shall be placed to allow the work to be constructed to the lines and grades shown on the drawings. All sheeting, shoring and bracing shall be removed from the excavation upon completion of the work.
  - K. Soils Report: The recommendations found in the Soils Investigation and Geotechnical Report shall be followed. This document is incorporated by reference as part of these specifications. See the Supplemental General Conditions for identification of the geotechnical report.

**1.05 SUBMITTALS**

At the request of the RCE, the Contractor may be required to submit Test Lab results for materials being imported from borrow pits or of on-site material in order to verify that those materials meet the standards specified for its intended use or the Contractor's implied use within the site.

**PART 2 MATERIAL or PRODUCTS**

**2.01 MATERIALS**

- A. Obtain the material used in the construction of shoulders and slopes from the following locations, only:
  - 1. Stockpiles of material stripped from within the right-of-way or the project site in the grading operation,
  - 2. Areas outside of the cut or fill slopes of the right-of-way or project site,
  - 3. Stockpiles of material stripped from approved borrow pits,
  - 4. Select material pits, or
  - 5. Areas of roadway and drainage excavation within the right-of-way or project site.

**2.02 FILL MATERIAL**

- A. Sand Fill: Material shall consist of a clean sand with a fineness modulus of 1.6 to 3.1 and containing not more than 10 percent by weight finer than No. 200 U.S. Standard Sieve.
- B. Earth Fill: Material shall consist of inorganic material free of roots, cobbles and boulders and classified as GM, GC, SW, SP, SM, ML, SC, or CL by ASTM D2487-85 "Standard Methods for Classification of Soils for Engineering Purposes". Earth Fill shall also conform to the following:
  - 1. Liquid Limit = 50 maximum
  - 2. Plasticity Index = 25 maximum
  - 3. Dry Unit Weight = 100 pcf minimum maximum density
- C. Pervious Fill: Material shall consist of crushed stone or gravel. Size and gradation shall be #7 size as defined by ASTM C33-86, "Standard Specification for Concrete Aggregates" (Nominal size 3/4" to #4 Sieves).

Total Percent Passing Sieve (By Weight):

Square Sieve	1-1/2	1	3/4	1/2	3/8	#4	#8
Size #7 (3/4")	100	100	100	90-100	40-70	0-15	0-5

**2.02 UNSUITABLE SITE FILL MATERIAL**

- A. Material which does not conform to the above classifications (soil classification MH, OH, OL and PT) may be used as Site Fill material identified on the drawings as "spoil areas" and under topsoil to establish site grades.

**2.03 TOPSOIL**

- A. Dark organic weed free loam which is free of muck.

**PART 3 EXECUTION**

**3.01 SITE GRADING**

- A. Remove all organic matter, stumps and other deleterious matter. Predensify the areas to be filled or upon which structures are to be placed. A loaded dump truck or other rubber tired equipment should be used for the predensification. Overlapping passes of the vehicle should be made across the site in one direction and then at right angles to the original direction of rolling.
- B. Any yielding, pumping or soft areas should be cut out and replaced with fill compacted as described herein.
- C. Finish grading outside of building, where not shown otherwise, shall be given uniform slopes

between points for which finished grades are shown, or between points and existing established grade.

- D. Provide drainage away from building walls, where not shown otherwise on the drawings, at a grade of at least 3-inches in 10-feet. Provide shallow swales where indicated on plans at a minimum width of 6-feet and at plan depth to provide a positive hydraulic gradient and a minimum flowline grade that at no time shall be less than plan grade. Provide rounding at top and bottom of banks and at other breaks in grade.

### **3.02 RAINWATER, SURFACE WATER, AND BACKUP**

- A. Protect all work, including excavations and trenches, from rainwater, surface water, and back-up of drainage and sewers. Furnish all labor, pumps, shoring, enclosures, and equipment necessary to protect and to keep work free of water.

### **3.03 UNDERCUTTING**

- A. During construction, soils classified MH, OH, OL and PT shall be undercut to a depth as shown on the drawings and replaced with compacted structural fill.
- B. Stockpile material by Fill Material classification in on site locations where it will not interfere with construction operations. Materials stockpiled shall be placed in a manner to afford drainage. Protect against erosion. Stockpiled materials that are to be left without disturbance for greater than 14 calendar days shall be stabilized by means of temporary seeding.

### **3.04 PREDENSIFICATION**

- A. After undercutting and prior to filling, the newly exposed subgrade enclosed by a line drawn 5'-0" outside the building area or at a minimum of 24" (2'-0") beyond the limit of disturbance/edge of roadway slopes or shoulders shall be scarified and predensified by rolling the surface with compaction equipment. This shall be performed in the presence of the RCE.
- B. Rolling shall consist of a minimum of eight (8) overlapping coverages in each of two perpendicular directions and shall be continued until density tests at a depth of 6-inches below the surface indicate the attainment of 98% of the Standard Proctor Maximum Dry Density (ASTM D698).
- C. Subgrades where footings for structures and paving that will bear on expansive soils should not be allowed to dry or to become excessively wet prior to the placement of fill and final build out of the structure(s) or pavement. Placement of fill shall begin on the same day excavations are made.

### **3.05 INSPECTION OF SUBGRADE**

- A. During predensification, the Designated Testing Laboratory shall inspect the newly exposed subgrade to detect soft, loose, or unstable zones.
- B. The Contractor shall be responsible for the replacement of soft, loose, or unstable zones encountered with Class I Fill.

### **3.06 INSTALLATION OF CLASS I FILL**

- A. Class I Fill shall be Earth Fill material from available sources within the limits of the project's site or as provided from an approved borrow pit that meets the terms and stipulations of these specifications and/or the SCDOT Standard Specifications, most current edition.
- B. Compaction shall be done only when the Class I Fill is within  $\pm 3$  percent of optimum moisture content. Placement shall be in maximum 12" loose lifts. Compaction shall achieve not less than 98 percent of the Standard Proctor maximum density (ASTM D 698).

### **3.07 INSTALLATION OF CLASS II FILL:**

- A. Class II Fill shall be Earth Fill materials except that fill immediately behind walls and under floor slabs shall be Sand Fill or Pervious Fill material as indicated on drawings.
- B. Compaction shall be done only when the Class II Fill is within  $\pm 3$  percent of optimum moisture content. Placement shall be in maximum 12" loose lifts. Compaction shall achieve not less than 95 percent of the Standard Proctor maximum density (ASTM D698).

### **3.08 INSTALLATION OF CLASS III FILL**

- A. Compact fill in utility trenches not under buildings or paved areas to not less than 90 percent of the

Standard Proctor maximum density (ASTM D698). Documented compaction testing in 12" lifts shall be required to be provided upon request by the RCE.

### **3.09 INSTALLATION OF BACKFILL**

#### **A. BUILDINGS**

1. Shore foundation walls which are to be tied into floor slabs prior to installation of Backfill and until slabs have been in place sufficient time to achieve strength and provide structural stability against overturning.
2. Where Backfill is required on both sides of walls it shall be brought up in even lifts so as not to provide an unequal lateral load.
3. Install Backfill against Foundation Walls only when directed by the RCE, and elsewhere as construction progress permits.

#### **B. TRENCHES and SITE EXCAVATIONS**

1. Place initial lift of backfill up to the springline of the pipe and thoroughly haunch the pipe prior to placement additional lifts of backfill.
2. Place initial lift of backfill at/over the pipe to a maximum of 12" above pipe, or in the excavated area and compact.
3. Place additional lifts of backfill, in 12" lifts, in the trench or the excavated area and compact in 12" increments.

### **3.10 EXCAVATION**

- A. Excavate to the required elevations and dimensions, plus space to permit erection of forms, sheathing, shoring or trench boxes and/or as required for waterproofing and installation of drains, pipes etc. All bottoms shall be clean cut, true, level, and sound. Any water softened soils in foundation excavations shall be removed prior to steel and concrete placement. Any water saturated soils encountered in the bottom of a pipe trench shall be removed to a depth sufficient to accommodate specified bedding stone (Minimum 12" depth).

### **3.11 GROUNDWATER CONTROL**

- A. Maintain water table not less than 3-feet below subgrades during operations which require heavy wheeled or roller equipment and below excavation level during placement of structural fill or crushed aggregate subgrade stabilization as directed by the RCE.
- B. Provide temporary ditches as necessary during construction to control seepage from springs and/or direct the water away from the fill areas. If so required by contract conditions, the Contractor shall be responsible for updating and implementing the project's Stormwater Prevention and Pollution Plan (OS-SWPPP) to include any and all temporary ditching and associated installation of required BMPs (Best Management Practices).
- C. Install storm sewers, sanitary sewers, potable water lines and dedicated fire lines and related structures as shown on the Plans.

### **3.12 EXCAVATION STABILIZATION**

- A. Where Groundwater Control cannot be accomplished, stabilize bottom of excavation with the installation of 1-foot of crushed aggregate Size #57 (1" to #4) prior to placement of compacted fill.
- B. After stabilization of excavation bottom, initial 1-foot "bridge-lift" of fill may be granular (SP, SW, GP OR GW) fill followed by placement of Controlled Fill.

### **3.13 COMPACTION TESTING**

- A. Field density tests shall be made by a Designated Testing Laboratory selected and paid by the Owner.
- B. Class I Fills: One field density test for each 2000 SF of area after each one-foot (12") lift or one test per 300 linear feet of trench or roadway per lifts, not totaling more than two feet (24").
- C. Class II Fills: One field density test for each 2000 SF of area after each one-foot (12") lift or one test per 300 linear feet of trench or roadway per two-foot (24") lift.

- D. Class III Fill: One field density test per 300 lineal feet of trench at a depth two feet below finish grade.
- E. Exact locations of tests shall be as directed by the RCE. Two copies of all test results shall be submitted to the RCE. The Contractor shall be responsible for maintaining a copy of all test results on file at the jobsite.
- F. The Contractor shall be responsible for:
  - 1. Notifying the laboratory on conditions requiring testing.
  - 2. Coordinating the laboratory for field testing.
  - 3. Providing representative fill soil samples to the laboratory for testing purposes. Provide 50 pound samples for each fill soil.

#### **PART 4 MEASUREMENT**

##### **4.01 GENERAL**

- A. The quantity for pay item Select Material for Shoulders and Slopes is the volume of the approved materials placed and compacted to bring the shoulders and slopes up to the required lines, grades, and cross-section and is measured by the cubic yard (CY) of material, complete in-place, and accepted.
- B. In cases where it is not feasible to measure the compacted in-place volume, see SCDOT Standard Specifications, Subsection 209.5 (2) for clarification on measurement of this item.
- C. In cases where selected material for shoulders and slopes is placed on irregular areas where it is not feasible to determine the volume of the soil compacted in-place, see SCDOT Standard Specifications, Subsection 209.5 (3) for clarification on measurement of this item.
- D. Material used in the construction of shoulders and slopes, other than that obtained from sources specified in Subsection 209.2 of the SCDOT Standard Specifications, is not measured or paid under the item Select Material for Shoulders and Slopes. For further clarification see SCDOT Standard Specifications, Subsection 209.5 (4).

#### **PART 5 PAYMENT**

##### **5.01 PRE-QUALIFICATION FOR PAYMENT**

- A. Material in shoulders and slopes is paid under this item only when the select material placed consists of material described and measured as provided in Subsection 209.5 of The SCDOT Standard Specifications, most current edition or elsewhere herein this Section.

##### **5.02 GENERAL**

- A. Payment for the accepted quantity for Select Material for Shoulders and Slopes, measured in accordance with subsection 209.5 of the SCDOT Standard Specifications, most current edition, is determined using the contract unit bid price for the pay item.
- B. When a pay item for Shoulders and Slopes is not included in the Contract or the material is not as specified, payment is determined using the unit bid price for Unclassified Excavation or Borrow Excavation, as applicable.
- C. When the Contract requires the contractor to furnish the shoulder material, the payment also includes the cost of material pits, haul roads and hauling of materials.
- D. Payment for this item includes all direct and indirect costs and expenses necessary to complete the work.
- E. Payment for dewatering of work performed under this Section shall be included in the Contract unit bid price for this item, whether specified or not.

**END OF SECTION**

## SECTION 310210

### FLOWABLE FILL

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. This Section contains specifications for the materials, equipment, construction, measurement, and payment for the use of flowable fill, its application, materials, proportioning, handling, maintenance, and protection.
- B. By definition, flowable fill is a controlled low strength material (CLSM) that can be placed in a self-leveling consistency or in a less flowable state to reduce pressures exerted by the material.
- C. Use: Flowable fill shall be used for routine backfilling for bridge abutments, utility trenches, pipes, catch basins, drop inlets, manholes, etc., bedding and encasement of pipes, filling voids of abandoned below ground structures including pipelines, culverts, and storage tanks; structural backfilling beneath foundations; and other applications specified by the Plans or as directed by the RCE.

##### 1.02 DEFINITIONS

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

Equipment: *page 8 of SCDOT Standard Specifications*

Materials: *page 8 of SCDOT Standard Specifications*

Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*

(the) Specifications: *page 13 of SCDOT Standard Specifications*

Subbase: *page 14 of SCDOT Standard Specifications*

Subgrade: *page 14 of SCDOT Standard Specifications*

Traffic Lane: *page 15 of SCDOT Standard Specifications*

Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

##### 1.03 RELATED SECTIONS and DOCUMENTS

###### 103.1 RELATED DOCUMENTS

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

###### 103.2 RELATED SECTIONS

Other Sections of the Specifications related to this Section include the following:

Division 31:-Sitework

- Section 310201- Clearing and Grubbing.
- Section 310203- Roadway and Drainage Excavation
- Section 310208- Subgrade
- Section 310209- Shoulders and Slopes
- Section 310210- Flowable Fill
- Section 310305- Graded Aggregate Base
- Section 310402- HMA Intermediate Course
- Section 310403- Hot Mix Asphalt-Surface Course
- Section 310506- Pervious Concrete Pavement
- Section 310600- Maintenance and Traffic Control
- Section 310625- Permanent Pavement Markings-Paint
- Section 310627- Thermoplastic Pavement Markings
- Section 310714- Storm Sewers and Culvert Pipes.
- Section 311714- Underground Drainage Systems
- Section 310719- Storm Drainage Structures
- Section 310720- Concrete Curbing, Sidewalk & Driveways.
- Section 310810- Seeding
- Section 310815- Soil Erosion & Sediment Control

Section 310808- Interlocking Concrete Brick Pavers

**QUALITY ASSURANCE**

- A. The Contractor shall provide the RCE with a drawing identifying the location of all areas where flowable fill is required to be placed or where the Contractor opts to place flowable fill. That drawing shall include the length, width and depth of the extents of the flowable fill.
- B. The drawing shall be presented to the RCE as a required part of the most current payment request and shall be accompanied by load/delivery tickets that clearly identify the location that the load was placed. Each load/delivery ticket shall contain an approximation of the quantity of flowable fill placed at each location, as well as the following information:
  - Project designation
  - Date
  - Time
  - Class and quantity of flowable fill
  - Quantity of water with held

**1.04 SUBMITTALS**

- A. Contractor shall provide mix designs for review to the Structural Materials Engineer or RCE at least 14 days prior to need. The mix design shall conform to the requirements of SCDOT SC-M-210
- B. Only flowable fill from a State Certified supplier/plant shall be approved for use on the Project. Approval must be in place prior to the placement of the Flowable Fill.
- C. Contractor shall provide mix designs for review to the Structural Materials Engineer or RCE at least 14 days prior to need. The mix design shall conform to the requirements of SCDOT SC-M-210
- D. Only flowable fill from a State Certified supplier/plant shall be approved for use on the Project. Approval must be in place prior to the placement of the Flowable Fill.

**PART 2 MATERIALS or PRODUCTS**

**2.01 MATERIALS**

- A. All materials to be used for flowable fill shall be in conformance with SCDOT SC-M-210 materials requirements, section 4.

**PART 3 EXECUTION**

**3.01 GENERAL**

- A. The area to receive flowable fill shall be free and clear of all objectionable materials. The excavated area to receive flowable fill shall be uniformly formed/shaped as to width, length and verticality.
- B. All use of flowable fill shall conform to Section 210.4.2–SCDOT Standard Specifications, 2007 edition or most current edition for Preparation and Placement of Flowable Fill.

**PART 4 MEASUREMENT**

**4.01 GENERAL**

- A. The quantity for Flowable fill is the volume of flowable fill furnished and placed as prescribed and is measured by the cubic yard (CY) of flowable fill delivered to the job and incorporated into the work as shown on the Plans or otherwise directed by the RCE, or opted to be used by the Contractor with the RCE's written approval for its use and payment for such, complete, and accepted.

**PART 5 PAYMENT**

**5.01 GENERAL**

- A. Payment for the accepted quantity for Flowable Fill, measured or determined in accordance with Subsection 210.5 of the SCDOT Standard Specifications-2007 edition, is determined using the contract unit bid price for the pay item with payment being full compensation for furnishing and placing the flowable fill as specified or directed and includes proportioning, mixing, handling, hauling, placing, maintenance, and protection of flowable fill; providing admixtures, shoring, transportation, and incidentals

necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract or as;

- B. Specified elsewhere in the contract documents and/or included as part of the bid unit price of another item of work of the Contract.

**END OF SECTION**

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## SECTION 310305

### GRADED AGGREGATE BASE

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. This section contains specifications for materials, equipment, construction, measurement, and payment for construction of a base course composed of the graded aggregate materials specified herein on a properly prepared foundation (subgrade or Subbase) in conformance with the lines, grades, dimensions, and cross-sections shown on the Plans or as directed by the RCE.

##### 1.02 DEFINITIONS

Equipment: *page 8 of SCDOT Standard Specifications*  
Materials: *page 8 of SCDOT Standard Specifications*  
Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*  
(the) Specifications: *page 13 of SCDOT Standard Specifications*  
Subbase: *page 14 of SCDOT Standard Specifications*  
Subgrade: *page 14 of SCDOT Standard Specifications*  
Traffic Lane: *page 15 of SCDOT Standard Specifications*  
Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

##### 1.03 RELATED SECTIONS and DOCUMENTS

###### 103.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 Specification Sections, apply to this Section.

###### 103.2 RELATED SECTIONS

###### Division 31:-Sitework

Section 310201- Clearing and Grubbing.  
Section 310203- Roadway and Drainage Excavation  
Section 310208- Subgrade  
Section 310209- Shoulders and Slopes  
Section 310403- Hot Mix Asphalt–Surface Course  
Section 310600- Maintenance and Traffic Control  
Section 310625- Permanent Pavement Markings-Paint  
Section 310627- Thermoplastic Pavement Markings  
Section 310714- Storm Sewers and Culvert Pipes.  
Section 310719- Storm Drainage Structures  
Section 310720- Concrete Curbing, Sidewalk & Driveways.  
Section 310808- Moving Items-Shrubbery, Fences  
Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control  
Section 310808- Interlocking Concrete Brick Pavers

##### 1.04 QUALITY ASSURANCE

- A. Use only materials which are furnished by a bulk aggregate producer regularly engaged in production of graded aggregate base material and that is on the SCDOT List of Qualified Suppliers.
- B. Comply with applicable requirements of South Carolina Department of Transportation, Standard Specifications, 2007 edition.
- C. Weather Limitations:
1. Do not conduct base placement operations when surface is wet, frozen or contains excess of moisture which would prevent uniform distribution and required penetration.
  2. Place base course when air temperature is above 35 degrees F and rising. No base course shall be placed on a frozen or muddy subgrade.
- D. Grade Control: Establish and maintain the required lines and grades for each course during construction operations and upon request provide the RCE with a cut sheet of the grades or

elevations that have been set.

#### **1.04.1 INSPECTION AND TESTING**

- A. Base testing will be performed by an independent testing laboratory provide by the Contractor and approved by the Engineer/Owner.
- B. The testing agency shall test in-place courses for compliance with specified compaction, thickness and surface smoothness requirements.
- C. Graded Aggregate Base Compaction: Minimum acceptable density shall be ninety five (95%) percent of maximum dry density in accordance with ASTM D 1557, Method D. Conduct one test for each 500 square yards of in-place material, but in no case less than one daily for each layer. Test density of graded aggregate base according to ASTM D 2167.
- D. Base Thickness: Inspect the cores of the base course to determine the average thickness of the course. If the average thickness exceeds the allowable variation below, additional cores shall be made at the Contractor's expense to determine the area of deficient thickness. The deficient area shall be corrected by overlay with the same type base to the limits as determined by the Engineer.
- E. Base Course: Deviation shall be  $\pm 1/2$ -inch from plan elevation or plan depth, if acceptable to the RCE.
- F. Surface Smoothness: Test finished surface of the base course for smoothness using a 19 foot straightedge. Intervals of tests shall be as directed by the Engineer. Surfaces will not be acceptable if the base course exceeds 1/4-inch in 10 feet.
- G. Contractor's Duties Relative to Testing
  - 1. Notifying laboratory of conditions requiring testing.
  - 2. Coordinating with laboratory for field testing.
  - 3. Paying costs for additional testing performed beyond the scope of that required and for all additional retesting where initial tests reveal non-conformance with specified requirements.
  - 4. Providing RCE with copies of a relevant test result of the base material prior to requesting payment for installed material and before the commencement of paving operations

#### **1.05 SUBMITTALS**

- A. Provide certificates stating that materials supplied comply with Specifications. Certificates shall be signed by the Producer and the Contractor.

### **PART 2 MATERIALS or PRODUCTS**

#### **2.01 MATERIALS**

- A. Graded Aggregate Base Course: Graded aggregate base course shall be of uniform quality throughout and shall meet the requirements of Section 305.2 of the South Carolina Department of Transportation Standard Specifications, 2007 edition.

### **PART 3 EXECUTION**

#### **3.01 SURFACE PREPARATION**

- A. Graded Aggregate Base Course
  - 1. Check subgrade for conformity with elevations and section immediately before placing aggregate base material.
  - 2. Place aggregate base material in compacted layers not more than 6-inches thick, unless continuing tests indicate that the required results are being attained with thicker layers.
  - 3. In no case shall more than 6-inches of compacted base be placed in one lift.
  - 4. Spread, shape, and compact all aggregate base material deposited on the subgrade during the same day.
  - 5. The compacted base shall have sufficient stability to support construction traffic without pumping.
  - 6. If compacted base becomes unstable as a result of too much moisture, the base material and underlying subgrade, if necessary, shall be dried and reworked to a moisture content that can be recompacted.

### **3.02 EQUIPMENT**

- A. Provide size and quantity of equipment to complete the work specified within the Project time schedule.
- B. Spreaders shall be self-propelled that spread graded aggregate mixtures without mounding, segregation or gouging surfaces, and control edges to true lines.
- C. Rolling equipment shall be self-propelled, steel-wheeled and pneumatic-tired rollers that can reverse direction without backlash.
- D. Provide rakes, shovels, tampers, and other miscellaneous small tools to complete the work specified.

### **3.03 SUPERVISION AND APPROVAL**

- A. Failure of Roadway: Should any roadway fail or settle or deemed to be of substandard quality during the life of the contract, including the bonded period, the Contractor shall be responsible for promptly restoring or repairing defects such that the area addressed meets or exceeds the minimum SCDOT standards for acceptance by the RCE.

## **PART 4 MEASUREMENT**

### **4.01 GENERAL**

- A. The quantity for the pay item Graded Aggregate Base is measured by the square yard (SY) and is the surface area of the base constructed as specified and measured by the square yard of base course in-place, complete, and accepted.
- B. If the pay item Graded Aggregate Base is not included in the Contract, the Graded Aggregate Base work is not measured for payment directly and is considered included in contract unit bid price of the various other items of work.

## **PART 5 PAYMENT**

### **5.01 GENERAL**

- A. Payment for the accepted quantity for Graded Aggregate Base, measured in accordance with subsection 305.5 of the SCDOT Standard Specifications-2007 edition, is determined using the contract unit bid price for the pay item, or as;
- B. Specified elsewhere in the contract documents.
- C. Payment is full compensation for Graded Aggregate Base as specified or directed and includes all materials, labor, equipment, tools, testing, supplies, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract.

**END OF SECTION**

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**SECTION 310403**  
**HOT MIXED ASPHALT**  
**SURFACE COURSE**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This section contains specifications for the materials, equipment, construction, measurement, and payment for hot mixed asphalt (HMA) surface courses composed of mineral aggregate and asphalt binder, mixed in an approved asphalt plant, constructed on a prepared surface or base course, and in conformance with the lines, grades, dimensions, and typical cross-section shown on the Plans or as otherwise specified.

**1.02 DEFINITIONS**

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction, 2007 edition-Section 101-Definition and Terms for some items related to the work of this Section, such as:

- Base Course: *page 5 - SCDOT Standard Specifications*
- Equipment: *page 8 of SCDOT Standard Specifications*
- Materials: *page 8 of SCDOT Standard Specifications*
- Pavement Structure: *page 10 - SCDOT Standard Specifications*
- Plans: *page 10 - SCDOT Standard Specifications*
- Roadbed: *page 11 - SCDOT Standard Specifications*
- Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*
- (the) Specifications: *page 13 of SCDOT Standard Specifications*
- Subbase: *page 14 of SCDOT Standard Specifications*
- Subgrade: *page 14 of SCDOT Standard Specifications*
- Traffic Lane: *page 15 of SCDOT Standard Specifications*
- Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

- B. Hot-Mix Asphalt Paving Terminology: Refer to ASTM D 8 for definitions of terms.

**1.03 RELATED SECTIONS**

**1.03.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 and 33 Specification Sections, apply to this Section.

**1.03.2 RELATED SECTIONS**

Division 31:-Sitework

- Section 310201- Clearing and Grubbing.
- Section 310203- Roadway and Drainage Excavation
- Section 310208- Subgrade
- Section 310209- Shoulders and Slopes
- Section 310305- Graded Aggregate Base
- Section 310600- Maintenance and Traffic Control
- Section 310625- Permanent Pavement Markings-Paint
- Section 310627- Thermoplastic Pavement Markings
- Section 310714- Storm Sewers and Culvert Pipes.
- Section 310719- Storm Drainage Structures
- Section 310720- Concrete Curbing, Sidewalk & Driveways.
- Section 310808- Moving Items-Shrubbery, Fences
- Section 310810- Seeding
- Section 310815- Soil Erosion & Sediment Control
- Section 310808- Interlocking Concrete Brick Pavers

#### 1.04 QUALITY ASSURANCE

- A. Asphalt Plant providing product shall be on the SCDOT approved list of suppliers.
- B. Testing Agency Qualifications: The Contractor shall provide for the services of a testing agency or Laboratory with qualifications that meet the requirements of ASTM D 3666 for testing as indicated.
- C. Verification of the finished surface requirements of the HMA surface course shall be in accordance with subsection 401.4.27 of the SCDOT Standard Specifications.
- D. Prior to the placement of the product, the Contractor shall provide Material Certificates to the RCE from each supplier for each component of the paving materials to be used in the production of the HMA Surface Course.
- E. Contractor shall provide Material Test Reports to the RCE for each paving material.
- F. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of Section 401 & 402 of the SCDOT Standard Specifications for asphalt paving work.
- G. Minimum Project Conditions for placing Asphalt Surface Course
  - 1. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:
  - 2. Tack Coat: Minimum surface temperature of 60 deg F (15.6 deg C).
  - 3. HMA Surface Course: Minimum surface temperature of 40 deg F (4.4 deg C) and rising at time of placement.

#### 1.05 SUBMITTALS

- A. Product Data: The Contractor shall provide the RCE a data or catalogue sheet for each type of product indicated to be used in the execution of the material for the work of this Section. The submittal shall include technical data and tested physical and performance properties.
- B. Job-Mix Designs: The Contractor shall provide the RCE with Certification that the Job-Mix Design meets minimum SCDOT Standards for the manufacture and placement of the HMA Surface Course to be supplied to and used to complete the work of this project.
- C. Job-Mix Designs: The contractor shall provide the RCE with individual Job-Mix design certifications and Job Mix formulas for each job mix proposed for the Work of this Contract.
- D. Upon completion of the installation of the work of this Section, the Contractor shall provide the RCE the written testing documentation, done to the standards and at the frequency required to comply with SCDOT Standard Specifications, latest edition for the work of this Section.

### PART 2 MATERIALS/PRODUCT

#### 2.01 MATERIALS

- A. Provide and use materials that meet the applicable requirements of Subsection 401.2 and SC-M-402 of the SCDOT Standard Specification, latest edition.
- B. The composition of the mixture for HMA Surface Course shall combine the mineral aggregates and binder in such proportions so that the composition by weight of the finished HMA is within the composition limits shown in SC-M-402 of the SCDOT Standard Specifications, latest edition.
- C. The Contractor shall provide asphalt materials from a source listed on the most current and up-to-date SCDOT list of approved vendors and suppliers

### PART 3 EXECUTION

#### 3.01 SURFACE PREPARATION

- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that in accordance with Subsection 401.4.16 of the SCDOT Standard Specifications that the prepared subgrade or base course is ready to receive paving.
- B. The Prime or Tack coat shall be done in accordance with Subsection 401.4.18 of the SCDOT Standard Specifications, latest edition.

- C. The application rate for the prime coat shall be applied uniformly over surface of the base course at a rate of 0.15 gal./sq. yd. Apply enough material to penetrate and seal but not flood surface. Allow prime coat to cure.
- D. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
- E. Protect primed substrate from damage until ready to receive paving.
- F. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd. (0.2 L/sq. m).
- G. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
- H. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

### **3.02 EQUIPMENT and PERSONNEL**

- A. The Contractor shall use proper equipment in good working condition and well maintained to perform the work of this Section.
- B. The Contractor shall provide sufficient equipment of the type necessary to enable safe and expeditious prosecution of the work of the Section in accordance with the project schedule and completion of the work in the specified time.
- C. All placement of asphalt pavement shall be done in accordance with SCDOT Standard Specifications, latest edition.
- D. The Contractor shall provide experienced, trained and qualified personnel to perform the work of this Section.

### **3.02 JOINTS**

- A. Construct joints to ensure a continuous bond between adjoining paving sections.
- B. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
- C. Clean contact surfaces and apply tack coat to joints.
- D. Offset longitudinal joints, in successive courses, a minimum of 6 inches (150 mm).
- E. Offset transverse joints, in successive courses, a minimum of 24 inches (600 mm).
- F. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either bulkhead or papered method according to AI MS-22, for both Ending a Lane and Resumption of Paving Operations. Compact joints as soon as asphalt product will bear roller weight without excessive displacement.
- G. Compact asphalt at joints to a density within two (2%) percent of specified course density.

### **3.03 COMPACTION**

- A. General: Begin compaction as soon as placed hot-mix asphalt will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
- B. Complete compaction before mix temperature cools to 185 ° F (85 ° C).
- C. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
- D. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
- E. Average Density: Shall be ninety six (96%) percent of reference laboratory density according to ASTM D 6927 or AASHTO T 245, but not less than ninety four (94%) percent nor greater than one hundred (100%) percent.

- F. Average Density: Shall be ninety two (92%) percent of reference maximum theoretical density according to ASTM D 2041, but not less than ninety (90%) percent nor greater than ninety six (96%) percent.
- G. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- H. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.
- I. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- J. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

### **3.04 INSTALLATION**

#### **3.04.1 EQUIPMENT**

- A. The Equipment used for the work of this Section shall comply with Subsection 401.3 of the SCDOT Standard Specifications, latest edition.
- B. The method employed in performing work and all equipment, plants, machinery, tools, etc., used in handling the materials and performing any part of the work of this Section or the placement of asphalt product is subject to the approval of the RCE before work is started. The method will be changed or improved as required when found unsatisfactory.
- C. The Contractor, approved Subcontractors, and their representatives shall maintain all equipment, tools, machinery, and plants used in satisfactory working condition. And provide sufficient equipment to enable prosecution of the work in accordance with the project schedule and completion of the work in the specified time.

#### **3.04.2 INSTALLATION TOLERANCES**

- A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
  - 1. Surface Course: Plus 1/4 inch (6 mm), no minus.
- B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot (3-m) straightedge applied transversely or longitudinally to paved areas:
  - 1. Surface Course: 1/8 inch (3 mm).
- C. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch (6 mm).

### **3.05 FIELD QUALITY CONTROL**

- A. The Contractor shall provide a qualified testing agency to perform tests and inspections of the paving operation.
- B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.
- C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
- D. In-Place Density: The approved Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to ASTM D 979.
- E. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
- F. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.
- G. One core sample will be taken for every 1000 sq. yd. (836 sq. m) or less of installed pavement, with no fewer than 3 cores taken.

- H. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.
- I. Replace and compact hot-mix asphalt where core tests were taken.
- J. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified Contract requirements.

**PART 4 MEASUREMENT**

**4.01 GENERAL**

- A. The measurement of the quantity for HMA Surface Course Type (A,B, CM,C, D, or E) is performed in accordance with Subsection 401.5 of the SCDOT Standard Specifications, latest edition.
  - When the item HMA Surface Course for Ditch Paving is included in the Contract, the cost of the binder in the ditch paving mixture is not measured for separate payment.
- B. Unless otherwise noted or agreed upon, the asphalt surface mix to be used for the work of this contract shall be Surface Type 'C' produced and installed in accordance with the SCDOT Standard Specifications, 2007 edition.

**PART 5 PAYMENT**

**5.01 GENERAL**

- A. Payment for the accepted quantity for HMA Surface Course Type (A, B, CM, C, D or E) is determined in accordance with Subsection 401.6 of the SCDOT Standard Specifications, latest edition.
  - When the item HMA Surface Course for Ditch Paving is included in the Contract, the cost of the binder material in the ditch paving mixture is considered in the contract unit price for the work and is not paid separately.
- B. Payment for each item includes all direct and indirect costs and expenses required to complete the work of this Section.

**END OF SECTION**

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**SECTION 310600**

**MAINTENANCE and TRAFFIC CONTROL**

**~ WORK ZONE~**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. This Section contains specifications for the materials, equipment, construction, measurement, and payment for work zone traffic control conducted within the highway right-of-way in conformity with the Plans, the Specifications, or a directed by the RCE.

**1.02 DEFINITIONS**

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

Equipment: *page 8 of SCDOT Standard Specifications*  
Materials: *page 8 of SCDOT Standard Specifications*  
Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*  
(the) Specifications: *page 13 of SCDOT Standard Specifications*  
Subbase: *page 14 of SCDOT Standard Specifications*  
Subgrade: *page 14 of SCDOT Standard Specifications*  
Traffic Lane: *page 15 of SCDOT Standard Specifications*  
Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

**1.03 RELATED SECTIONS and DOCUMENTS**

**1.03.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 and 33 Specification Sections, apply to this Section.

**1.03.2 RELATED SECTIONS**

Other Sections of these Specifications that relate to this Section are as follows:

Division 31:-Sitework

Section 310201- Clearing and Grubbing.  
Section 310203- Roadway and Drainage Excavation  
Section 310208- Subgrade  
Section 310209- Shoulders and Slopes  
Section 310305- Graded Aggregate Base  
Section 310403- Hot Mix Asphalt-Surface Course  
Section 310600- Maintenance and Traffic Control  
Section 310609- Temporary Pavement Markings  
Section 310625- Thermoplastic Pavement Markings  
Section 310714- Storm Sewers and Culvert Pipes.  
Section 310719- Storm Drainage Structures  
Section 310720- Concrete Curbing, Sidewalk & Driveways.  
Section 310808- Moving Items-Shrubbery, Fences  
Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control  
Section 310808- Interlocking Concrete Brick Pavers

**1.04 SUBMITTALS**

- A. Traffic Safety Plan prepared by the Contractor is to be reviewed by RCE prior to its implementation.

**1.05 QUALITY ASSURANCE**

- A. The Contractor shall provide adequately trained, skilled and qualified personnel to put the Traffic Safety Plan into operation.
- B. The Contractor shall provide the RCE with an ongoing daily verbal update and a weekly written update of any changes or deviations made to the original Traffic Safety Plan during the duration of the Contract.
- C. The Traffic Safety Plan shall at a minimum be sufficient to account for and protect the safety of all anticipated Contractor or Sub-Contractor employees or laborers, the general travelling public and any qualified visitors to the project site.
- D. If and where deemed necessary, the Contractor shall supply adequate flaggers, portable lighting and illuminated or non-illuminated portable signage to sustain the intent of the Traffic Safety Plan either during work hours or after work hours.

**PART 2 MATERIALS or PRODUCTS**

**2.01.1 MATERIALS**

- A. Material specifications for all anticipated temporary signage and traffic control devices shall be made available to the RCE on request, whether it be a verbal or written request, prior to their inception into the Traffic Safety Plan.

**2.01.2 PRODUCTS**

- A. The Contractor shall provide the RCE samples or physical examples of all on-ground or above-ground products prior to them being incorporated into making the Traffic Safety Plan operational and functional. By means of this statement; The RCE's right to refuse the use of a product or material for use in the Traffic Safety Plan, is reserved.
- B. Only Products and Materials in compliance with SCDOT Specifications and Supplemental Specifications, the MUTCD and approved and accepted industry standards may be used on this project.

**PART 3 EXECUTION**

**3.01 GENERAL**

- A. The Contractor shall implement the initial installation of all materials and products defined for use by the Traffic Safety Plan prior to the commencement of clearing operations.
- B. At no time shall any section of work of the Contract commence without the implementation of the related or associated requirements of the Traffic Safety Plan for the Work Zone being fully in force.
- C. Prior to commencement of any specific section of work of the Contract, the Contractor or his duly appointed representative and the RCE shall walk the impacted area of the project and make a determination that the site/area is fully in compliance with the Traffic Safety Plan and its intent.

**PART 4 MEASUREMENT**

**4.01 GENERAL**

- A. The quantity for the pay item Maintenance and Traffic Control in the Work Zone is all that defined by the Traffic Safety Plan, applicable industry standards and any and all needs deemed necessary to maintain the safety and integrity of the project. The quantity shall be measured by as a Lump Sum (LS), complete, and accepted.
- B. If the pay item Maintenance and Traffic Control in the Work Zone is not included in the Contract, the work of this Section is not measured for payment directly and is considered included in contract unit bid price of the various other items of work.

**PART 5 PAYMENT**

**5.01 GENERAL**

- A. Payment for the accepted quantity for Maintenance and Traffic Control in the Work Zone Fine Grading, measured in accordance with subsection 602.6 of the SCDOT Standard Specifications-2007 edition, is determined using the contract unit bid price for the pay item or as;
- B. Specified elsewhere in the contract documents.
- C. Payment is full compensation for Maintenance and Traffic Control in the Work Zone as specified or directed and includes all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract.

**END OF SECTION**

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**SECTION 310625**  
**PERMANENT PAVEMENT MARKINGS**  
**FAST DRY WATERBORN PAINT**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. This Section contains specifications for the materials, equipment, construction, measurement, and payment for furnishing and applying reflectorized, heavy metals free, fast drying, waterborn paint for pavement markings within the limits of the project to delineate the travel lanes and channelize traffic.
- B. The Contractor is advised to use markings that are the color (white or yellow) and pattern indicated in the approved Pavement Marking Plans, the SCDOT Pavement Marking Typical or the MUTCD, as applicable. This work includes supplying all necessary equipment and materials for the correct application of the marking material to the pavement surface, protecting pavement markings during installation, determining no passing zones for two-lane facilities in accordance with the MUTCD.
- C. The work of this section shall include protection of pavement markings during installation and paving operations, installing and maintaining pavement markings in areas to be finished with Thermoplastic Pavement Markings, determination of no passing zones for two-lane facilities in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) and providing the RCE/Owner the data used in establishing no passing zones on two-lane facilities.

**1.02 DEFINITIONS**

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

Equipment: *page 8 of SCDOT Standard Specifications*  
Materials: *page 8 of SCDOT Standard Specifications*  
Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*  
(the) Specifications: *page 13 of SCDOT Standard Specifications*  
Subbase: *page 14 of SCDOT Standard Specifications*  
Subgrade: *page 14 of SCDOT Standard Specifications*  
Traffic Lane: *page 15 of SCDOT Standard Specifications*  
Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

**1.03 RELATED SECTIONS and DOCUMENTS**

**1.03.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 Specification Sections, apply to this Section.

**1.03.2 RELATED SECTIONS**

- A. Related Sections include the following:

Division 31:-Sitework

Section 310201- Clearing and Grubbing.  
Section 310203- Roadway and Drainage Excavation  
Section 310208- Subgrade  
Section 310209- Shoulders and Slopes  
Section 310305- Graded Aggregate Base  
Section 310403- Hot Mix Asphalt–Surface Course  
Section 310600- Maintenance and Traffic Control  
Section 310627- Thermoplastic Pavement Markings  
Section 310714- Storm Sewers and Culvert Pipes.  
Section 310719- Storm Drainage Structures  
Section 310720- Concrete Curbing, Sidewalk & Driveways.  
Section 310808-Moving Items-Shrubbery, Fences

Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control  
Section 310808- Interlocking Concrete Brick Pavers

### 1.03 QUALITY ASSURANCE

- A. The Contractor shall have the horizontal layout of the work of this section performed by experienced and trained personnel with the work of this Section being done in conformance with the standards set forth in the Manual on Uniform Traffic Control Devices (MUTCD), current edition.
- B. The Contractor shall only use product that is supplied by a supplier or vendor who is on the SCDOT List of Qualified Suppliers/Vendors.
- C. Upon request, the Contractor shall provide the RCE with documentation, shipping invoices, bills of lading that substantiate that the product or materials on the work of this section comply with the approved submittals.
- D. The Contractor shall provide the RCE with documentation that the paint to be used meets the specifications of section 625.2.2 through section 625.2.3 of the SCDOT Standard Specifications. The Contractor shall provide skilled, trained, experienced personnel and suitable equipment in good working condition to perform the work of this Section.
- E. The Contractor shall provide all necessary traffic control devices and flagmen necessary to safely perform the work of this Section.

### 1.05 SUBMITTALS

- A. The Contractor shall also provide the RCE a final certification that the materials furnished for water-born fast dry marking paint meet the requirements set forth in section 625 of the SCDOT Standard Specifications, latest edition, for Permanent Pavement Markings.
- B. The Contractor shall also provide the RCE a certification obtained from the manufacture of the drop-on glass beads that states the material furnished meets the requirements of the Contract specifications.
- C. The Contractor shall submit a Permanent Pavement Marking plan to the RCE. That plan shall include the layout, alignment, color and location of all materials and products that shall be used to complete the work of this Section, including but not limited to the removal of existing pavement markings that could conflict with the intent of the approved plan. The work or details of the Permanent Pavement Marking plan shall only be implemented and installed after it is reviewed and approved by the RCE in writing and or supplemented by direction given by the RCE.
- D. In addition to initial acceptance of submittals, the water-born fast dry marking paint may be required to be sampled, tested, and approved by the SCDOT OMR or their designated representative before shipment. At the discretion of the RCE, additional sampling and testing at the project/job site may be performed.
- E. Minimum Manufacturer's Certification labeling shall be as follows:
  - State Specification Number
  - Manufacturer's Product Number
  - Color (White or Lead-Free Yellow)
  - Weight of Sample
  - Identification numbers of batched comprising the lot & lot number
  - Date of manufacture
  - Form (block or granular)
  - Binder Type- Alkyd
  - Sampling Methods (splitting, thieving, quartering, random bag, etc.)
  - South Carolina File Number or Contract Number
- F. For all other inspection and sampling requirements for permanent pavement marking materials refer to Subsection 625 of the SCDOT Standard Specifications, latest edition.

## PART 2 MATERIALS or PRODUCTS

### 2.01 MATERIALS

- A. The Contractor shall provide and use pavement marking that consists of traffic paint, meeting the requirements given herein, upon which spherical glass beads are applied by dropping immediately

following paint application. If required, clean the pavement surface in an appropriate manner as described herein immediately prior to application.

- B. The Contractor shall provide and install white and/or yellow paint that meets the following general requirements:
1. The paint shall be formulated and manufactured from top grade materials and free from defects and imperfections that might adversely affect the serviceability of the finished product.
  2. The paint shall be formulated and processed specifically for service as a suitable binder for glass beads for use on traffic-carrying pavements, including Portland cement concrete, asphalt pavement, and brick.
  3. The paint shall dry to an elastic adherent finish that does not darken after exposure to sunlight, does not show appreciable discoloration with age, or darken under service such that the color or visibility to the reflectorized marking is impaired. Ease and uniformity of application and covering properties.
  4. The paint shall be free of heavy metals as defined in Subsection 625.2.2.4.11.
  5. The paint shall provide the proper anchorage and refraction for glass beads when both binder and spheres are applied in the stipulated quantities with specialized equipment using pressurized bead guns.
  6. The paint shall be manufactured and sealed in containers in such manner that during normal shelf life does not show evidence of settling or livering that causes the paint to be unusable or is detrimental to the specialized equipment used in application.
  7. The paint shall not show evidence of skinning when received in sealed containers

### **PART 3 EXECUTION**

#### **3.01 GENERAL**

- A. The Contractor shall be responsible for the installation or implementation of the work of this Section in accordance with Subsection 609.4.1.1.2 and/or section 625.4 through section 625.4.3.9 of the SCDOT Standard Specifications, 2007 edition.
- B. The Contractor shall be responsible for the proper and adequate cleaning and preparation of the surface or surfaces that have been constructed to receive the work of this Section.
- C. The Contractor shall be responsible for ensuring that the equipment necessary for the proper construction of the work is on site, in acceptable working condition, and approved by the RCE as to both type and condition before the start of work under this section. Provide sufficient equipment to enable prosecution of the work in accordance with the project schedule and completion of the work in the specified time.
- D. The Contractor shall be responsible for use and coordination of the proper traffic control indicated in the Contract, the SCDOT Standard Drawings, the MUTCD, or as directed by the RCE to allow for the safe removal of existing pavement markings, surface preparation, and /or the installation of new pavement markings.
- E. The Contractor shall ensure that the pavement is dry and free of glaze, oil, dirt, grease, or other foreign contaminants before proceeding with the placement of any pavement markings. Where directed by the RCE, the Contractor shall remove any existing markings that conflict with the Pavement Marking Plans by an approved method before the application of painted pavement marking. Use approved removal methods, which are shot blast, sand blast, or grinding.
- F. The Contractor shall be responsible for implementation/placement of the approved permanent pavement markings as indicated on the approved Pavement Marking Plan to the satisfaction of the RCE and in accordance with accepted industry standards.

### **PART 4 MEASUREMENT**

#### **4.01 GENERAL**

- A. The quantities for fast dry painted pavement marking for lines are measured by the linear foot (LF) along the center of the pavement marking lines for each width and color of pavement marking line

in-place, complete and accepted. The measurement includes the length of the painted marking only and excludes spaces between broken lines.

- B. The quantities for fast dry painted pavement marking symbols (arrow, word, railroad crossing, handicap, and biking symbol, etc.) are measured by each (EA) symbol in-place, complete and accepted. A railroad crossing symbol consists of "X RR".
- C. Traffic control utilized during the performance of painted pavement marking work is not measured under items covered by this section, but may be as included in the item Traffic Control in accordance with Subsections 107.12 and 601.5 of the SCDOT Standard Specifications.
- D. Unless included in other pay items in the Contract, the work required to remove existing or temporary pavement markings is considered incidental to the work under this section and is not measured separately.
- E. Unless included in other pay items in the Contract, determination of the no passing zones for two-lane facilities and providing the RCE or Owner with the data used in establishing the zones is considered incidental work for the painted pavement marking items and is not measured for payment

## **PART 5 PAYMENT**

### **5.01 GENERAL**

- A. Payment for the accepted quantity for each type of permanent or temporary pavement marking measured in accordance with Subsection 625.5 of the SCDOT Standard Specifications, latest edition and per Part 4 of this Section of the specifications is determined with the contract unit price bid for the applicable item, or as;
- B. Specified elsewhere in the contract documents.
- C. Payment is full compensation for applying permanent or temporary pavement markings as specified or directed and includes preparing the pavement surface; removing unacceptable pavement markings; and all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other terms of the Contract.
- D. No payment shall be made for removal of existing pavement markings related to the placement of permanent pavement markings or putting the approved permanent pavement marking plan in place.
- E. Unless otherwise included in the Contract, the traffic control for application and/or removal of pavement markings will be included in the pay item Traffic Control in accordance with Subsections 107.12 and 601.6 of the SCDOT Standard Specifications, latest edition.
- F. No separate payment shall be made for determination of no passing zones for two-lane facilities and for providing the RCE with the data used in establishing the zones. This item shall be considered incidental to other various items of work.
- G. Payment for each item in this Section includes all direct and indirect costs and expenses required to complete the work and gain acceptance.

**END OF SECTION**

## SECTION 310627

### THERMOPLASTIC PAVEMENT MARKINGS

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. This Section contains specifications for the materials, equipment, construction, measurement, and payment for the furnishing and applying permanent thermoplastic pavement markings within the limits of the project to delineate the travel lanes and channelize traffic.
- B. This work includes protection of pavement markings during installation, determination of no passing zones for two-lane facilities in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) and providing the RCE the data used in establishing no passing zones on two-lane facilities.

##### 1.02 DEFINITIONS

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

Base Course: *page 5 - SCDOT Standard Specifications*  
Equipment: *page 8 of SCDOT Standard Specifications*  
Materials: *page 8 of SCDOT Standard Specifications*  
Pavement Structure: *page 10 - SCDOT Standard Specifications*  
Plans: *page 10 - SCDOT Standard Specifications*  
Roadbed: *page 11 - SCDOT Standard Specifications*  
Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*  
(the) Specifications: *page 13 of SCDOT Standard Specifications*  
Subbase: *page 14 of SCDOT Standard Specifications*  
Subgrade: *page 14 of SCDOT Standard Specifications*  
Traffic Lane: *page 15 of SCDOT Standard Specifications*  
Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

##### 1.03 RELATED SECTIONS and DOCUMENTS

###### 1.03.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 Specification Sections, apply to this Section.

###### 1.03.2 RELATED SECTIONS

- A. Related Sections include the following:

Division 31:-Sitework

Section 310201- Clearing and Grubbing.  
Section 310203- Roadway and Drainage Excavation  
Section 310208- Subgrade  
Section 310209- Shoulders and Slopes  
Section 310305- Graded Aggregate Base  
Section 310403- Hot Mix Asphalt-Surface Course  
Section 310600- Maintenance and Traffic Control  
Section 310625- Permanent Pavement Markings-Paint  
Section 310714- Storm Sewers and Culvert Pipes.  
Section 310719- Storm Drainage Structures  
Section 310720- Concrete Curbing, Sidewalk & Driveways.  
Section 310808- Moving Items-Shrubbery, Fences  
Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control  
Section 310808- Interlocking Concrete Brick Pavers

#### **1.04 QUALITY ASSURANCE**

- A. The Contractor shall have the horizontal layout of the work of this section performed by experienced and trained personnel with the work of this Section being done in conformance with the standards set forth in the Manual on Uniform Traffic Control Devices (MUTCD), current edition.
- B. Upon request, the Contractor shall provide the RCE with documentation, shipping invoices, bills of lading that substantiate that the product or materials on the work of this section comply with the approved submittals.
- C. The Contractor shall provide the RCE with actual laboratory test results from the manufacturer of the thermoplastic binder indicating that the product, each batch or lot furnished, is in compliance with all the requirements of AASHTO M 249.
- D. The Contractor shall provide skilled, trained, experienced personnel and suitable equipment in good working condition to perform the work of this Section.
- E. The Contractor shall provide all necessary traffic control devices and flagmen necessary to safely perform the work of this Section.

#### **1.05 SUBMITTALS**

- A. The Contractor shall also provide the RCE a final certification that the materials furnished for thermoplastic pavement markings meet the requirements of the SCDOT Standard Specifications, latest edition, for thermoplastic pavement markings.
- B. The Contractor shall also provide the RCE a certification obtained from the manufacture of the drop-on glass beads that states the material furnished meets the requirements of the Contract specifications.
- C. The Contractor shall submit a Permanent Pavement Marking plan to the RCE. That plan shall include the layout, alignment, color and location of all materials and products that shall be used to complete the work of this Section, including but not limited to the removal of existing pavement markings that could conflict with the intent of the approved plan. The work or details of the Permanent Pavement Marking plan shall only be implemented and installed after it is reviewed and approved by the RCE in writing and or supplemented by direction given by the RCE.
- D. In addition to initial acceptance of submittals, thermoplastic material may be required to be sampled, tested, and approved by the SCDOT OMR or their designated representative before shipment. At the discretion of the RCE, additional sampling and testing at the project/job site may be performed.
- E. Minimum Manufacturer's Certification labeling shall be as follows:
  - State Specification Number
  - Manufacturer's Product Number
  - Color (White or Lead-Free Yellow)
  - Weight of Sample
  - Identification numbers of batched comprising the lot & lot number
  - Date of manufacture
  - Form (block or granular)
  - Binder Type- Alkyd
  - Sampling Methods (splitting, thieving, quartering, random bag, etc.)
  - South Carolina File Number or Contract Number
- F. For all other inspection and sampling requirements for permanent pavement marking materials refer to Subsection 627.4.8 of the SCDOT Standard Specifications, latest edition.

### **PART 2 MATERIALS or PRODUCTS**

#### **2.01 MATERIALS**

- A. The Contractor shall provide thermoplastic pavement marking material that is a reflectorized mixture of a thermoplastic binder and spherical glass beads upon which additional glass beads are applied by dropping immediately following application.
- B. A primer-sealer shall be used to coat Portland Cement surfaces before application of the thermoplastic binder material.

- C. If recommended by the manufacturer of the thermoplastic binder, coat other surfaces as well with a primer-sealer.
- D. For detailed material specifications for thermoplastic pavement markings, refer to the SCDOT Standard Specifications, latest edition Subsections 627.2.2 through 627.2.4

### **PART 3 EXECUTION**

#### **3.01 GENERAL**

- A. The Contractor shall be responsible for the installation or implementation of the work of this Section in accordance with Subsection 609.4.1 of the SCDOT Standard Specifications, 2007 edition.
- B. The Contractor shall be responsible for the proper and adequate cleaning and preparation of the surface or surfaces that have been constructed to receive the work of this Section.
- C. The Contractor shall be responsible for implementing the approved permanent pavement marking plan and bringing any non-conforming applications to the attention of the RCE prior to the commencement of the work.

### **PART 4 MEASUREMENT**

#### **4.01 GENERAL**

- A. The quantities for thermoplastic pavement markings for lines are measured by the linear foot (LF) along the center of the pavement marking lines for each type of line, width, color, and dry thickness of pavement marking line in-place, complete and accepted. Measurement is made of the pavement marking only and excludes the spaces between broken lines.
- B. The quantities for thermoplastic pavement marking symbols (arrows, words, and railroad crossing symbols) are measured by each (EA) arrow (straight, right, left or combination), word or words, and railroad crossing symbol in-place, complete and accepted. [A railroad crossing symbol consists of "X RR".]
- C. Traffic Control utilized during the performance of thermoplastic pavement marking work is not measured under items covered by this section, but is included in the item Traffic Control in accordance with Subsections 107.12 and 6.01.5, or if an item for Traffic Control is not specified in the Contract, then it shall be understood to be included in the unit price bid for work of this Section.
- D. Unless included in other pay items in the Contract, the work required to remove existing or temporary pavement markings is considered incidental work for the thermoplastic pavement marking items and is not measured separately.
- E. Unless included in other pay items in the Contract, the work required to determine the no passing zones for two-lane facilities and to provide the RCE with data used in establishing the zones is considered incidental to the work under this Section and is not measured for payment.

### **PART 5 PAYMENT**

#### **5.01 GENERAL**

- A. Payment for the accepted quantity for each type of thermoplastic pavement markings measured in accordance with Subsection 627.5 of the SCDOT Standard Specifications, latest edition and per Part 4 of this Section of the specifications is determined with the contract unit price bid for the applicable item, or as;
- B. Specified elsewhere in the contract documents.
- C. Payment is full compensation for applying thermoplastic pavement markings as specified or directed and includes preparing the pavement surface; removing unacceptable pavement markings; and all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other terms of the Contract.
- D. No payment shall be made for removal of existing pavement markings related to the placement of permanent pavement markings or putting the approved permanent pavement marking plan in place.

- E. Unless otherwise included in the Contract, the traffic control for application and/or removal of pavement markings is included in the pay item Traffic Control in accordance with Subsections 107.12 and 601.6 of the SCDOT Standard Specifications, latest edition.
- F. No separate payment shall be made for determination of no passing zones for two-lane facilities and for providing the RCE with the data used in establishing the zones. This item shall be considered incidental to other various items of work.
- G. Payment for each item in this Section includes all direct and indirect costs and expenses required to complete the work and gain acceptance.

**END OF SECTION**

## SECTION 310714

### STORM SEWERS and PIPE CULVERTS

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. This Section contains specifications for the materials, construction, measurement, and payment for furnishing reinforced concrete pipe culverts (RCP) and HDPE pipe of the size, shape, type, and dimensions indicated on the plans and installing them to provide drainage structures at places designated on the plans or by the RCE in accordance with these specifications and true to the lines and grades shown on the plans or otherwise given by the RCE.
- B. The work of this section includes the furnishing, installing and making connections to existing and/or new structures, including drilling and chipping as is necessary to complete the work.

##### 1.02 DEFINITIONS

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction, 2007 edition- Section 101-Definition and Terms for some items related to the work of this Section, such as:

Equipment: *page 8 of SCDOT Standard Specifications*  
Materials: *page 8 of SCDOT Standard Specifications*  
Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*  
(the) Specifications: *page 13 of SCDOT Standard Specifications*  
Subbase: *page 14 of SCDOT Standard Specifications*  
Subgrade: *page 14 of SCDOT Standard Specifications*  
Traffic Lane: *page 15 of SCDOT Standard Specifications*  
Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

##### 1.03 RELATED SECTIONS

###### 1.03.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 Specification Sections, apply to this Section.

###### 1.03.2 RELATED SECTIONS

###### Division 31:-Sitework

Section 310201- Clearing and Grubbing.  
Section 310203- Roadway and Drainage Excavation  
Section 310208- Subgrade  
Section 310209- Shoulders and Slopes  
Section 310305- Graded Aggregate Base  
Section 310403- Hot Mix Asphalt-Surface Course  
Section 310600- Maintenance and Traffic Control  
Section 310625- Permanent Pavement Markings-Paint  
Section 310627- Thermoplastic Pavement Markings  
Section 310719- Storm Drainage Structures  
Section 310720- Concrete Curbing, Sidewalk & Driveways.  
Section 310808- Moving Items-Shrubbery, Fences  
Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control  
Section 310808- Interlocking Concrete Brick Pavers

##### 1.04 QUALITY ASSURANCE

- A. Each length of pipe, each fitting and special fitting shall be inspected by an independent commercial testing laboratory acceptable to the Engineer prior to delivery. Each joint of pipe and each special shall be stenciled or otherwise clearly and legibly marked with the laboratory's mark of acceptance.
- B. Each pipe shall be clearly marked as required by the governing ASTM standard specifications to show its class or gauge, date of manufacture, and the name or trademark of the manufacturer. Elliptical reinforced concrete pipe shall be clearly marked top and bottom and the minor axis clearly

noted on the interior surface of the pipe.

- C. Any pipe or section of pipe which have been broken, cracked, or otherwise damaged before or after delivery or which have failed to meet the required tests shall be removed from the site and shall not be used therein.

#### **1.05 SUBMITTALS**

- A. The Contractor shall be required to submit shop drawings to the RCE for each type and size of Pipe Culvert to be installed under the contact. Those submittals shall also include shop drawing for the RCP pipe gaskets and for the HDPE pipe gaskets.
- B. A submittal shall be made for the woven fabric that is to be used to wrap the pipe.

### **PART 2 MATERIAL or PRODUCTS**

#### **2.01 PIPE**

- A. Pipe and special fittings shall be furnished in sizes, types and classes at the locations shown on the Drawings, and/or specified herein.
- B. All pipe and special fittings shall be of all new materials which have not been previously used.

#### **2.02 CONCRETE PIPE**

- A. Concrete pipe less than 12-inches in diameter shall be non-reinforced concrete pipe conforming to ASTM C 14.
- B. Concrete pipe 15-inches and larger in diameter shall be reinforced concrete pipe conforming to ASTM C 76. All pipe shall be Class III unless shown otherwise on the Drawings. Minimum wall thickness design shall correspond to Wall B.
- C. Joints shall be bell and spigot joints and shall be O-ring rubber gasket joints conforming ASTM C 443.
- D. Joint Materials: Rubber gaskets for bell and spigot joints shall be O-ring rubber gasket joints conforming to the latest revisions of ASTM Standard Specification C 443 for Joints for Circular Concrete Sewer and Culvert Pipe, Using Flexible Watertight Rubber Gaskets.

#### **2.03 HIGH DENSITY POLYETHYLENE PIPE (HDPE)**

- A. HDPE pipe shall be as manufactured by Advanced Drainage systems, or approved equal, for 4-through 60-inch (100 to 1500 mm) ADS N-12 WT IB pipe (per ASTM F2648) and be suitable for use in gravity-flow land drainage applications.
- B. The HDPE ADS N-12 WT IB pipe (per ASTM F2648) shall have a smooth interior and annular exterior corrugations and shall be watertight according to the requirements of ASTM D3212 with integral built-in bell and factory-installed gasket,
  - 1. Gaskets:
    - a. Gaskets shall meet the requirements of ASTM F477.
    - b. Gaskets shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris.
  - 2. Integral Pipe Bell:
    - a. ADS HDPE pipe sizes 12- through 60-inch (300 to 1500 mm) diameters shall have a reinforced bell with a polymer composite band.
    - b. The bell tolerance device shall be installed by the manufacturer.
  - 3. Fittings shall conform to ASTM F 2306. Bell and spigot connections shall utilize a spun-on or welded bell and valley or saddle gasket meeting the watertight joint performance requirements of ASTM F 2306.
  - 4. Material for pipe production shall be an engineered compound of virgin and recycled high-density polyethylene conforming with the minimum requirements of cell classification 424420C (ESCR Test Condition B) for 4- through 10-inch (100 to 250 mm) diameters, and 435420C (ESCR Test Condition B) for 12- through 60-inch (300 to 1500 mm) diameters, as defined and

described in the latest version of ASTM D3350, except that carbon black content should not exceed 4%

- C. Each section of pipe and fitting shall be clearly color marked as to its designated use and shall be clearly identified and marked as to its ASTM compliance(S)ion

#### **2.04 BEDDING**

- A. Bedding for concrete pipe shall be Class 'C' as detailed on the Drawings to fit the depth of trench, type and size of pipe, width of trench and bearing value of subgrade.
- B. Class 'C' Bedding shall consist of #57 stone or approved crushed rock or gravel, sand, or other general excavated earth materials removed from the trench. Earth materials shall be as specified in Section 31-310203 of these Specifications. Placement of this material shall be done carefully. Material shall be thoroughly compacted by tamping.

### **PART 3 EXECUTION**

#### **3.01 EXCAVATION**

- A. Excavation shall be performed in accordance with the requirements of the SCDOT Standard Specifications, latest edition, SCDOT Supplemental Technical Specification–SC-M-714 for Permanent Pipe Culverts and as defined elsewhere herein.

#### **3.02 PIPE LAYING**

- A. Immediately prior to laying the pipe, all projections or irregularities which will prevent the joints from closing properly shall be removed.
- B. Pipe shall be laid true to line and grade on a bed which is uniformly firm throughout its entire length. If material in the bottom of the excavation is of such character as to cause unequal settlement along the length of the storm sewer or culvert, the material shall be removed below the grade given, to such depth as ordered and shall be backfilled with granular bedding material and thoroughly tamped or otherwise compacted to ensure an unyielding foundation. Pipe shall not be laid upon frozen ground.

#### **3.03 EXISTING UTILITIES**

- A. All existing sewers, water lines, gas lines, underground conduits, telephone lines, sidewalks, curbs, gutters, pavements, electric lines or other utilities or structures in the vicinity of the work shall be carefully protected by the Contractor from damage at all times.
- B. Where it is necessary for the proper accomplishment of the work to repair, remove and/or replace any such utility, the work shall be done as directed by the RCE.
- C. No separate payment shall be made for removing and replacing and/or repairing damaged existing sewers, water, gas, electric, or telephone lines, or conduits or other utilities, culverts, drains, or similar existing services or structures that are to remain in service.
- D. The removal, replacement and/or repair of these items shall be paid for in the unit price bid by the Contractor on other items of work.
- E. Similar repair and replacement of sidewalks, curbs, gutters and pavements are provided elsewhere herein.

#### **3.04 CLEANING**

- A. After completing each section of the storm sewer or culvert, the Contractor shall remove all debris and construction materials and equipment from the site, grade and smooth over the surface on both sides of the line and leave the entire right-of-way in a clean, neat and serviceable condition in accordance with the requirements of these Specifications.

### **PART 4 MEASUREMENT**

#### **4.01 GENERAL**

- A. The quantity for the items Permanent Pipe Culverts, of the size, kind, class, thickness or type specified, or Smooth Wall Pipe Culvert of the size specified is measured in linear feet of the net length of pipe culvert complete in place and accepted.

- B. If the pay item Permanent Pipe Culvert is not included in the Contract, the Permanent Pipe Culvert is not measured for payment directly and is considered included in contract unit bid price of the various other items of work.
- C. All means of measurement for Permanent Pipe Culverts shall be in accordance with Subsections 1.4 and/or 3.4 of the SCDOT Supplemental Technical Specification SC-M-714 (08/09) for Permanent Pipe Culverts

**PART 5 PAYMENT**

**5.01 GENERAL**

- A. Payment for the accepted quantity for Permanent Pipe Culverts, measured in accordance with subsection Subsections 1.4 and/or 3.4 of the SCDOT Supplemental Technical Specification SC-M-714 (08/09) for Permanent Pipe Culverts, is determined using the contract unit bid price for the pay item, or as;
- B. Specified elsewhere in the contract documents.
- C. Payment for Permanent Pipe Culverts and end treatments as specified or directed, and measured as provided by Subsection 1.4 of the SCDOT Supplemental Technical Specifications (SC-M-714) are paid for at the contract unit price for the respective items, which price and payment is compensation for furnishing all material, labor, equipment, tools including hauling and placing all pipe sections and materials, excavation of the entire standard trench, bedding, and pipe backfill as described in the measurement section (both structural and embankment backfill in this region), removal of existing pipe to be replaced, constructing pipe joints, removal of old end treatments, cleaning out pipe, disposal of surplus materials, visual inspection, traffic control for all inspections, and all incidentals necessary to complete the work of this Section.
- D. Payment for Permanent Pipe Culverts and end treatments, under this Section, includes all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to complete the work of this Section in accordance with the Plans, the Specifications, and other terms of the Contract.

**END OF SECTION**

## SECTION 310719

### STORM DRAINAGE STRUCTURES CATCH BASINS, DROP INLETS, STORM MANHOLES, JUNCTION BOXES and SPRING BOXES

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. This Section contains specifications for the materials, equipment, construction, measurement, and payment for the construction or installation of new or adjusting to grade of catch basins, drop inlets, manholes, junction boxes, and spring boxes at the location shown on the Plans or as directed by the RCE, in accordance with these specifications, and in conformity with the lines and grades shown on the Plans or established by the RCE.

##### 1.02 DEFINITIONS

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

Equipment: *page 8 of SCDOT Standard Specifications*  
Materials: *page 8 of SCDOT Standard Specifications*  
Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*  
(the) Specifications: *page 13 of SCDOT Standard Specifications*  
Subbase: *page 14 of SCDOT Standard Specifications*  
Subgrade: *page 14 of SCDOT Standard Specifications*  
Traffic Lane: *page 15 of SCDOT Standard Specifications*  
Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

##### 1.03 RELATED SECTIONS and DOCUMENTS

###### 1.03.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 Specification Sections, apply to this Section.

###### 1.03.2 RELATED SECTIONS

###### Division 31:-Sitework

Section 310201- Clearing and Grubbing.  
Section 310203- Roadway and Drainage Excavation  
Section 310208- Subgrade  
Section 310209- Shoulders and Slopes  
Section 310305- Graded Aggregate Base  
Section 310403- Hot Mix Asphalt-Surface Course  
Section 310600- Maintenance and Traffic Control  
Section 310625- Permanent Pavement Markings-Paint  
Section 310627- Thermoplastic Pavement Markings  
Section 310714- Storm Sewers and Culvert Pipes.  
Section 310720- Concrete Curbing, Sidewalk & Driveways.  
Section 310808-Moving Items-Shrubbery, Fences  
Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control  
Section 310808- Interlocking Concrete Brick Pavers

##### 1.04 QUALITY ASSURANCE

- A. The Contractor shall have the vertical and horizontal layout of the work of this section performed by a surveyor that is duly registered and licensed by the State of South Carolina.
- B. The Contractor shall provide the RCE with a copy of the surveyor's layout plan and cut sheet a minimum of 24 hours prior to the commencement of the installation of any structures.

- C. The storm drainage structures, if precast, shall be from a vendor on the SCDOT List of Qualified Suppliers.
- D. The storm drainage structures, if built in-place, shall be made of materials provided by provide by vendors on the SCDOT list of Qualified Suppliers. In no case shall any product or material used in the installation/construction of storm drainage structures be provided or sourced from any supplier or vendor that is not on the SCDOT Qualified List of Suppliers.

#### **1.05 SUBMITTALS**

##### **A. Precast Structures:**

- 1. The Contractor shall submit shop drawings to the RCE for each precast structure specified in the Plans and for each additional precast structure requested or directed to be installed by the RCE.
- 2. No precast structures intended for work of this contract shall be cast until such time as the RCE has received, reviewed and approved the appropriate shop drawing(s).
- 3. All precast structures shall be manufactured by a plant or facility on the SCDOT list of approved vendors/suppliers.
- 4. Precast Structures shall conform to the requirements of Subsection 719.2.9 of the SCDOT Standard Specifications, latest edition.

##### **B. Concrete Brick:**

- 1. The Contractor shall furnish written documentation to the RCE that the concrete brick to be used to complete work of this Section has been manufactured at a plant or facility on the SCDOT list of approved vendors/suppliers and that it meets the requirements of Subsection 718.2.2 of the SCDOT Standard Specifications.

##### **C. Mortar Materials:**

- 1. The Contractor shall furnish written documentation to the RCE that the mortar materials to be used to complete work of this Section has been manufactured at a plant or facility on the SCDOT list of approved vendors/suppliers and that it meets the requirements of Subsection 718.2.5 of the SCDOT Standard Specifications.

##### **D. Castings:**

- 1. The Contractor shall furnish shop drawings to the RCE for each type of casting to be utilized to complete work of this Section.
- 2. The castings shall be provided from a source that is on the SCDOT list of approved vendors/suppliers and it must be accompanied by documentation that each casting meets the requirements of Section 719.2.5 of the SCDOT Standard Specifications, latest edition.
- 3. American made products are of first priority.

##### **E. Reinforcing Steel:**

- 1. The Contractor shall furnish written documentation to the RCE that the reinforcing steel to be used to complete work of this Section has been manufactured at a plant/facility or provided by a vendor/supplier on the SCDOT list of approved vendors/suppliers/manufacturers and that it meets the requirements of Subsection 719.2.6 and Section 703 of the SCDOT Standard Specifications.

### **PART 2 MATERIALS or PRODUCT**

#### **2.01 MATERIALS**

- A. Precast Structures: Precast Structures shall conform to the requirements of Subsection 719.2.9 of the SCDOT Standard Specifications, latest edition.
- B. Cast-In-Place: Unless otherwise specified on the Plans or in the Special Provisions, provide Class 4000 for cast in place concrete conforming to the requirements of applicable subsections of Section 701 of the SCDOT Standard Specifications, latest edition.
- C. Concrete Brick: Provide concrete brick and similar solid units conforming to the requirements of Subsection 718.2.2 of the SCDOT Standard Specifications, latest edition

- D. Mortar Materials: Provide mortar materials conforming to the requirements of Subsection 718.2.5 of the SCDOT Standard Specifications, latest edition.
- E. Castings: Provide iron castings for frames, grates, covers, etc. conforming to the requirements of AASHTO M 105, Class 35B, and the alternate load test conforming to the requirements of AASHTO M 306.
- F. Reinforcing Steel: Provide structural steel conforming to the requirements of AASHTO M 270, Grade 36.

### **PART 3 EXECUTION**

#### **3.01 GENERAL**

- A. Excavate to the required depth and compact the material on which the structure(s) are intended to be placed or constructed to a firm even surface.
- B. If unsuitable material is encountered or trench conditions are unsatisfactory due to the presence of excess water, replace this material with satisfactory material as directed by the RCE or Geotechnical Engineer and bed the structure in a minimum of 12" of # 57 stone.
- C. Place or build the structure(s) to the line and grade as shown on the Plans.
- D. Backfill at and around the structure(s) with clean suitable material that is free of any deleterious or organic material. Backfilling shall be done in maximum 12" lifts, with the backfill placed up to subgrade/grade and compact to 90% Modified Proctor.
- E. Place and secure casting or top on structure(s) to the line and grade indicated on the Plans.

### **PART 4 MEASUREMENT**

#### **4.01 GENERAL**

- A. The quantity for new or adjusted cast-in-place, brick, block masonry drainage structure is measured by each (EA) unit complete in place and accepted, and includes all frames, covers, gratings, and fittings necessary to complete the unit.
- B. The quantity for precast drainage structure components is measured by the linear foot (LF) or each (EA) unit in place, complete and accepted, and includes all frames in accordance with Subsection 719.5 of the SCDOT Standard Specifications, latest edition.

### **PART 5 PAYMENT**

#### **5.01 GENERAL**

- A. Payment for the accepted quantity for a new or adjusted cast-in-place, brick, block masonry drainage structure measured in accordance with Subsection 719.5, is determined using the contract unit price for such items as Catch Basin, Drop Inlet., Manhole, Junction Box, Spring Box, or Adjust Catch Basin, Drop Inlet, Manhole, Junction Box, Utility Box of the size and type specified, or the respective precast concrete drainage structures, Precast Riser, Precast Drainage Base, Precast Transition Section (Flat Slab), Precast Transition Section (Cone) of the size specified, or as;
- B. Specified elsewhere in the contract documents.
- C. Payment is full compensation for constructing drainage structures as specified or as directed and includes furnishing and placing precast and cast-in-place drainage structure; furnishing and placing reinforcing steel, bricks, blocks, and mortar for masonry structures; providing inlet and outlet openings and joint sealant; excavating; providing and placing bedding material and backfilling; disposing of surplus material; and all other materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other terms of the Contract.

**END OF SECTION**

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## SECTION 3109720

### CONCRETE SIDEWALK, CURBING AND DRIVEWAY

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Concrete sidewalk and curbing, including header curbs, shall be constructed of Portland cement concrete, at the locations and to the dimensions, lines, grades and cross section indicated on the Drawings or as directed by the Engineer and in conformity with the provisions and requirements set out in these Specifications.
- B. Concrete driveways shall be constructed of Portland Cement concrete, at the locations and to the dimensions, lines, grades and cross section indicated on the Drawings or as directed by the Engineer, and in conformity with the provisions and requirements set out in these Specifications.
- C. Concrete sidewalk, curbing and driveway shall include all the necessary excavation, unless otherwise indicated, subgrade and subbase preparation, backfilling, final clearing up and completing all incidentals thereto, as indicated on the Drawings or as directed by the RCE.

##### 1.02 DEFINITIONS

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

Equipment: *page 8 of SCDOT Standard Specifications*  
Materials: *page 8 of SCDOT Standard Specifications*  
Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*  
(the) Specifications: *page 13 of SCDOT Standard Specifications*  
Subbase: *page 14 of SCDOT Standard Specifications*  
Subgrade: *page 14 of SCDOT Standard Specifications*  
Traffic Lane: *page 15 of SCDOT Standard Specifications*  
Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

##### 1.03 RELATED SECTIONS and DOCUMENTS

###### 1.03.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 Specification Sections, apply to this Section.

###### 1.03.2 RELATED SECTIONS

###### Division 31:-Sitework

Section 310201- Clearing and Grubbing.  
Section 310202- Removal of Structures and Obstructions  
Section 310203- Roadway and Drainage Excavation  
Section 310208- Subgrade  
Section 310305- Graded Aggregate Base  
Section 310403- Hot Mix Asphalt-Surface Course  
Section 310625- Permanent Pavement Markings-Paint  
Section 310627- Thermoplastic Pavement Markings  
Section 310714- Storm Sewers and Culvert Pipes  
Section 310719- Storm Drainage Structures  
Section 310808- Moving Items-Shrubbery, Fences  
Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control  
Section 310808- Interlocking Concrete Brick Pavers

##### 1.04 QUALITY ASSURANCE

- A. Benchmarks: The Contractor shall establish and maintain two corresponding permanent bench marks on the site for reference. All vertical dimensions shall be checked from these benchmarks.

- B. Finish Grades: Finished grades, as used herein, mean the final grade elevations indicated on the drawings. Should finished grades shown on spot elevations conflict with those shown by the contours, the spot elevations shall govern.
- C. Preliminary Grading: Contractor shall remove soft organic type material from all areas within the construction areas. The work area shall be graded to lines and elevations of the Contract drawings and compacted to accept the product.
- D. All concrete products to be used for the work of this Section shall be provided by a vendor/supplier who is on the SCDOT list of approved vendors or suppliers. Each specific concrete mix shall be approved for use by the RCE to complete work of this Section through the submittal of a Job Design Mix.
- E. The concrete products to be used for the work of this Section shall be generated by a plant that is on the SCDOT list of approved plants.

#### **1.05 SUBMITTALS**

- A. The Contractor shall provide the RCE with an approved mix design for each type of concrete mix to be manufactured and used to perform the work of this Section.
- B. The Contractor shall provide the RCE with shop drawings and product submittals related to or for work of this Section, including cement product, aggregate, fillers etc..

### **PART 2 PRODUCTS or MATERIALS**

#### **2.01 MATERIALS**

- A. Materials used in the construction of sidewalks, curbing and driveways, in addition to the general requirements of these Specifications, shall conform, unless otherwise stipulated, to the following:
  - 1. Concrete shall be manufactured of the materials meeting the requirements of Section 701 of the SCDOT Standard Specifications, 2007 edition for Class 2500 Portland cement concrete at a minimum, or as specified on the Plans.
  - 2. Crushed stone for base, if required, shall meet the gradation requirements for Size 7 or 8 as specified in ASTM D 448 or AASHTO M43.

#### **2.02 FORM MATERIAL**

- A. Forms may be constructed of wood or metal.
- B. The lumber to be used in the construction of wood forms shall be free of bulge or warp, of uniform width, not less than 2-inches (commercial) in thickness, except that 1-inch thickness, except that 1-inch thickness may be used on curves and shall be sound and free from loose knots. Stakes shall be not less than 2 x 4-inch lumber of sufficient length that, when driven they will hold the forms rigidly in place.
- C. Metal forms shall be approved sections and shall have a flat surface on top. They shall present a smooth surface of the desired contour, sufficiently thick and braced to withstand the weight of the concrete without bulging or becoming displaced.

### **PART 3 EXECUTION**

#### **3.01 LABOR**

- A. For finishing; competent and skilled finishers shall be provided.

#### **3.02 EQUIPMENT**

- A. All equipment necessary and required for the construction of concrete sidewalks, curbing and driveways, must be on the Project, proven to be in first class working condition and approved by the RCE, before construction will be permitted to begin.
- B. A one bag mixer will be permitted when the total output of concrete, per 10 hour day does not exceed 25 cubic yards.
- C. Satisfactory floats, edgers, spades and tamps shall be furnished. Tamps of not over 8-inch diameter and weighing not less than 25 pounds shall be provided for tamping subgrade. A 10 foot longitudinal float of the inverted T-type with plough handles attached for manipulation, and a rigid float not less than 18-inches longer than the width of the walk being constructed, shall be provided.

### **3.03 CLEARING AND GRUBBING**

- A. Clearing and grubbing shall be performed in accordance with the requirements of Section 310201 of these Specifications.

### **3.04 REMOVAL OF STRUCTURES AND OBSTRUCTIONS**

- A. Unless otherwise indicated or stipulated, the removal of structures, obstructions, etc., will be performed in accordance with the requirements of Section 202 of the SCDOT Standard Specifications, 2007 edition and per Section 310202 of these specifications.

### **3.05 ROAD AND DRAINAGE EXCAVATION**

- A. Road and drainage excavation, as indicated on the Drawings or as directed by Engineer, shall be performed in accordance with the requirements of Section 203 of the SCDOT Standard Specifications, 2007 edition and per Section 310203 of these specifications.

### **3.06 SUBGRADE PREPARATION**

- A. The subgrade for sidewalks, curbing and driveways shall be formed by excavation to a depth equal to the thickness of the concrete +2-inches.
- B. All subgrade shall be of such width as to permit the proper installation and bracing of the forms.
- C. Yielding, or unsuitable material shall be removed and backfilled with satisfactory material. Place 6-inches of graded aggregate base under commercial/industrial driveways, compacted thoroughly and finished to a smooth, unyielding surface and proper line, grade and cross section of the proposed construction.
- D. All work related to Subgrade preparation shall be done in accordance with Section 310208-Subgrade of these specifications.

### **3.07 FORMS**

- A. All forms shall be set upon the prepared subgrade, true to lines and grade, and held rigidly in place so as to not be disturbed or displaced during the placing of the concrete. The top of the form shall be set to exact grade and the height shall be equal to not less than the thickness of the proposed concrete.
- B. All forms shall be so constructed as to form the cross section, contour, etc., of the proposed construction.
- C. Immediately before placing the concrete, the forms shall be given a coat of light oil and where being removed and used again, the forms shall be thoroughly cleaned and oiled each time.
- D. Forms shall be removed within 24 hours after placing concrete and no pressure shall be exerted upon the concrete in removing forms.
- E. When the sidewalk is to be joined to an existing sidewalk, the existing sidewalk, if not in proper condition for the junction, shall be cut to a neat line perpendicular to both the centerline and the surface, or as indicated by the Engineer.

### **3.08 EXPANSION JOINTS**

- A. Unless otherwise indicated on the Drawings or as directed by the RCE, premoulded expansion joint filler, ½ inch in thickness, shall be placed at the locations and in line with expansion joints in the adjoining pavement, gutter, and not otherwise indicated on the Drawings, a ½ inch premoulded expansion joint filler shall be placed at intervals of not over 50 feet apart. All premoulded expansion joint filler must be cut to full width or length of the proposed construction and shall extend to within ¼ inch of the top or finished surface. All longitudinal expansion joints shall be placed as indicated on the Drawings or as directed by the Engineer.
- B. All expansion joints shall be true, even and present a satisfactory appearance.
- C. All expansion joint material protruding after the concrete has been finished shall be trimmed as directed by the RCE.

### **3.09 MANUFACTURING AND PLACING CONCRETE**

- A. Immediately before placing concrete, the depth of the proposed concrete shall be checked by means of a template cut true to the cross section of the proposed construction and any irregularities shall be corrected.

- B. Immediately before placing concrete, all subgrade shall be thoroughly sprinkled or wetted.
- C. Concrete shall not be placed upon a frozen subgrade or subbase.
- D. Construction joints will be permitted only at grooves or at expansion joints, unless otherwise approved by the Engineer.
- E. The concrete shall be manufactured of the materials meeting the requirements of Section 701 of the SCDOT Standard Specifications, 2007 edition for Class 2500 Portland cement concrete at a minimum or as per the Plans.
- F. The concrete shall be placed immediately after mixing, the edges, sides, etc., shall be thoroughly spaded and the surfaces tamped sufficiently to thoroughly compact the concrete and bring the mortar to the surface. The concrete shall be deposited and compacted in a single layer.

### **3.10 FINISHING**

- A. The concrete for sidewalks and driveways shall be stuck-off with a transverse template resting upon the side forms and then shall be floated with a 10 foot longitudinal float working the float transversely across the concrete with a sawing motion, always maintaining it parallel to the edges of the sidewalk, or driveway, where practicable, and in such a manner that all surplus water, laitance and inert material shall be removed from the surface. This operation shall be continued until the surface of the concrete shows no variation from 10 foot straightedge. If necessary, additional concrete shall be added to fill depressions, and the longitudinal float used again. The longitudinal float shall not be moved ahead more than one-half its length at any time.
- B. When the surface of the concrete is free from water and just before the concrete obtains its initial set, it shall be gone over and finished with a wooden float so as to produce a sandy texture. The longitudinal surface variations shall be not more than 1/4-inch under a 12 foot straightedge, nor more than 1/8-inch on a five foot transverse section. The surface of the concrete must be finished so as to drain completely at all times.
- C. The edges of the sidewalks, curbing or driveways shall be carefully finished and rounded with an edging tool having a radius of 1/2 inch.
- D. The surface of sidewalks shall be divided into blocks by use of a grooving tool. Grooves shall be placed so as to cause contraction joints to be placed at a groove line, where practical. The grooves shall be spaced approximately five feet apart and the blocks shall be rectangular unless otherwise ordered by the Engineer. The grooves shall be cut to a depth of not less than 1-inch. The edges of the grooves shall be edged with an edging tool having a radius of 1/4-inch, and any marks caused by edging or otherwise shall be removed with a wetted brush or wooden float so as to give the surface a uniform texture and finish.
- E. The edges of the concrete at contraction joints shall be rounded with an edging tool having a radius of 1/4-inch. The top and ends, where practicable, of expansion joint material shall be cleaned of all concrete and the expansion joint material shall be trimmed so as to be slightly below the surface of the concrete. All marks caused by edging shall be removed with a wetted brush or wooden float.

### **3.11 PROTECTION AND CURING**

- A. Immediately after finishing the concrete, it shall be covered and cured in accordance with the accepted standards and practices of the SCDOT Standard Specifications, 2007 edition. If the temperature falls to below freezing, satisfactory heating devices shall be placed under suitable covers to keep the temperature around the concrete at above 45 degrees F.
- B. Pedestrians will not be allowed upon concrete sidewalks or driveways until 12 hours after finishing concrete, and no vehicles or loads shall be permitted upon any sidewalk or driveway until the concrete has attained sufficient strength for such traffic.
- C. The Contractor shall construct such barricades and protection devices as are necessary to keep pedestrians and traffic off the sidewalks or driveways.
- D. If any sidewalk or driveway or curbing is damaged at any time previous to final acceptance of the project, it shall be repaired by removing all concrete within the limits of the grooves, and be replaced, at the Contractor's expense, with concrete of the type, kind and finish in the original construction.

### **3.12 BACKFILLING**

- A. Immediately after the concrete has set sufficiently, the spaces along the sides or edges of the sidewalk or driveway or curbing shall be refilled with suitable material, this material shall be in compacted layer of not

over 4-inches each, until firm and solid.

### **3.13 CLEANING**

- A. All excess or unsuitable material shall be removed and disposed of in accordance with requirements of SCDOT Standard Specifications, 2007 edition.
- B. Final clean-up and restoration shall be performed in accordance with the requirements of SCDOT Standard Specifications, 2007 edition.
- C. All suitable material becoming the property of the Owner shall be stored in a manner and at locations near or on the Project as directed by the RCE. All unsuitable material shall become the property of the Contractor for safe and regulated disposal off site at an approved, permitted site.

## **PART 4 MEASUREMENT**

### **4.01 GENERAL**

- A. The quantity for the pay items Concrete Curb, Concrete Gutter, or Concrete Curb and Gutter (of type and size specified) is the length of the cast-in-place curb and/or gutter and is measured by the linear foot (LF), complete, and accepted. Measurement shall be per Subsection 720.5 of the SCDOT Standard Specifications, 2007 edition.
- B. The quantity for the pay items Concrete Sidewalk, Concrete Driveways and Concrete Median is the finished surface area of the top of the cast-in-place sidewalk, driveway or median and is measured by the square yard (SY), complete, and accepted. Measurement shall be per Subsection 720.5 of the SCDOT Standard Specifications, 2007 edition.
- C. If the pay items, for items of work of this Section of the Specifications, are not included in the Contract, then the items of work of this Section of the Specifications are not measured for payment directly and are considered included in contract unit bid price of the various other items of work of the Contract.

## **PART 5 PAYMENT**

### **5.01 GENERAL**

- A. Payment for the accepted quantity for Concrete Curb, Concrete Gutter, or Concrete Curb and Gutter, Concrete Sidewalk, Concrete Driveways, Concrete Median, measured in accordance with subsection 720.5 of the SCDOT Standard Specifications-2007 edition, is determined using the contract unit bid price for the pay item, or as;
- B. Specified elsewhere in the contract documents.
- C. Payment is full compensation for Concrete Curb, Concrete Gutter, or Concrete Curb and Gutter, Concrete Sidewalk, Concrete Driveways, Concrete Median as specified or directed and includes all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract.

**END OF SECTION**

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**SECTION 310808**

**RELOCATION OF STRUCTURES  
AND  
OTHER ITEMS (MOVING ITEMS)**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. This section contains specifications for the materials, equipment, construction, measurement, and payment for the removal and relocation of structures, buildings, and other scheduled moving items in conformity with the Plans and the Specifications or as directed by the RCE.
- B. Scheduled moving items include relocating buildings or structures with incidental improvements or appurtenances, such as walkways, driveways, animal enclosures, fences, steps, pipe lines, septic tanks, pumps, grease pits or lifts, signs, plants, shrubs, etc. that are not an integral part of the relocated item, and may not necessarily be shown on the Plans, but the moving of which is necessary because of the relocation of a building or structure. Each moving item is identified by a unique schedule number.
- C. It is the Contractor's responsibility to investigate each moving item and determine the actual work involved in the moving and relocation of each item before bidding. The size and description of buildings or structures, distance to be moved, and placement elevation shown on the Plans are only approximate. The RCE may require the Contractor to move any building or structure an additional distance of 50 feet; raise or lower from the final elevation shown on the Plans a distance of 18 inches; or turn a building or structure through an angle of 15 degrees more or less than called for on the Plans without additional compensation.
- D. Moving items shown on the Plans as parts of power transmission or other public utility lines are approximate as to distance to be moved, materials to be furnished, and appurtenances. The work of this contract for the moving or relocating of public utilities shall be performed by the utility of record with all associated costs to be paid by the CTC. The work of moving and or relocating utilities shall be done in accordance with the owner's standard practice and to its satisfaction. It shall be the Contractor's responsibility to contact the owner of such moving items and to schedule and coordinate the work of moving or relocating these items through the CTC in accordance with the anticipated schedule of the contract.

**1.02 DEFINITIONS**

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction, 2007 edition-Section 101-Definition and Terms for some items related to the work of this Section, such as:

- Equipment-page 8 of SCDOT Specifications
- Materials-page 8 of SCDOT Specifications
- Road, Roadbed & Roadway-page 11 of SCDOT Specifications
- (the) Specifications 13 of SCDOT Specifications
- Traffic Lane-page 15 of SCDOT Specifications
- Travelway or Traveled Way-page 15 of SCDOT Specifications

**1.03 RELATED SECTIONS and DOCUMENTS**

**1.03.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 Specification Sections, apply to this Section.
- B. The Storm Water Pollution and Prevention Plan (SWPPP) in effect for this project. The Contractor and each sub-contractor is advised to read and sign the SWPPP (as a co-permittee).

**1.03.2 RELATED SECTIONS**

Division 31:-Sitework

- Section 310201- Clearing and Grubbing.
- Section 310202- Removal of Structures and Obstructions
- Section 310203- Roadway and Drainage Excavation
- Section 310208- Subgrade

Section 310209- Shoulders and Slopes  
Section 310305- Graded Aggregate Base  
Section 310403- Hot Mix Asphalt–Surface Course  
Section 310600- Maintenance and Traffic Control  
Section 310625- Permanent Pavement Markings-Paint  
Section 310627- Thermoplastic Pavement Markings  
Section 310714- Storm Sewers and Culvert Pipes.  
Section 310719- Storm Drainage Structures  
Section 310720- Concrete Curbing, Sidewalk & Driveways.  
Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control  
Section 310818- Interlocking Concrete Brick Pavers

### **1.03 SUBMITTALS**

- A. Submit product data in accordance with the requirements of these Specifications.
- B. Prior to any construction activity involving work of this Section, the Contractor shall submit, for the RCE's approval, a representative sample or technical submittal sheet of the fencing materials, mail box posts and or light/utility pole(s) to be installed as part of the work of this Section.
- C. The Contractor shall submit a technical data sheet and sample of all paint materials to be used to complete the work of this item.
- D. Prior to submittal for payment of a moving item, the Contractor shall submit to the RCE the appropriate required written and signed statement from the property owner or owners, of moving items of the Contract, certifying that the work has been performed to the property owner's satisfaction and that the Department and Contractor are released from all responsibility and liability in connection with the work.

### **1.04 QUALITY ASSURANCE**

#### **104.1 STANDARDS OF ASSURANCE**

- A. All fencing materials scheduled to be moved under work of this item shall be handled and stored such as they will be re-installed in as good/sound condition as they were before they were moved.
- B. Any move item damaged by, or during, work of this item shall be replaced in kind by the Contractor at no cost to the Owner or the Contract.
- C. Perform all work under this Section in accordance with all pertinent rules, regulations and permits including, but not necessarily limited to, those stated in these Specifications. Where provisions of pertinent rules, regulations and permits conflict with these Specifications, the more stringent provisions shall govern.

## **PART 2 PRODUCTS or MATERIALS**

### **2.01 GENERAL MATERIALS-MOVING ITEMS**

- A. The RCE will determine the suitability of materials salvaged from the existing structure or item for use in the relocated structure or item.
- B. Use new material for brick or concrete block to reconstruct exterior walls, pillars, and chimneys that are unable to be moved with the structure. Use masonry mortar that meets the requirements specified in Subsection 718.2.5.
- C. Construct concrete driveways and walkways to replace existing drives and walks in accordance with the applicable requirements of Section 720. Construct driveways at a uniform thickness of 6 inches and walkways or sidewalks at a uniform thickness of 4 inches.

## **PART 3 EXECUTION**

### **3.01 EQUIPMENT**

- A. The Contractor shall ensure that the equipment necessary for the proper construction of the work is on site, in acceptable working condition, and approved by the RCE as to both type and condition before the

start of work under this section. The Contractor shall provide sufficient equipment to enable prosecution of the work in accordance with the project schedule and completion of the work in the specified time.

### **3.02 CONSTRUCTION**

- A. The Contractor shall prepare structures or items for removal and then move and place them in their new locations as shown on the Plans or as designated by the RCE. The Contractor shall be responsible for setting all structures or items plumb and level, and thereby leaving the entire structure including appurtenances or item in the same or better condition in all respects than it was before moving.
- B. Do not make any change or alteration in the work specified unless approved in advance by the RCE.
- C. Where work of the Contract requires or involves new materials or the reuse of salvaged materials in the relocation and reconstruction of buildings or structures or items or in the construction of new buildings or structures or items, upon the completion of the moving of the item or structure, the Contractor shall paint all such work to the satisfaction of the RCE.
- D. Conduct moving operation of items to allow businesses to render service to their customers without undue interruption. After work is started on any building, maintain a sufficient force to ensure satisfactory progress. Weather permitting; do not discontinue work on any building without consent of the RCE.
- E. Whenever the Plans specify buildings, structures, items etc. to be dismantled or salvaged for re-use, the Contractor shall be responsible for dismantling them with sufficient care to preserve the salvage/re-use value of the materials therein. The Contractor shall be responsible for the proper storage of all salvaged or dismantled materials at locations shown on the Plans or designated by the RCE. The Contractor shall be responsible for the disposal of all discarded material, rubbish, unusable material or debris as directed by the RCE.

## **PART 4 MEASUREMENT**

### **4.01 GENERAL**

- A. Unless otherwise specified, moving items are paid on a lump sum (LS) basis per moving item; and therefore, there is no specific measurement of quantities for these items. For acceptance for payment, the completed moving item must be accepted by the property owner and the RCE.
- B. Unless otherwise specified, moving items related to public utilities such as poles, transformers, pedestals, etc. shall not be measured for payment under this contract

## **PART 5 PAYMENT**

### **5.01 GENERAL**

- A. Payment for a moving item accepted in accordance with Subsection 808.5 is determined using the contract lump sum bid price for the applicable scheduled moving item, and the payment includes all direct and indirect costs and expenses necessary to complete the work.
- B. Payment for Moving Item No. (schedule number) is full compensation for moving the specified item as specified or directed and includes the necessary clearing, grubbing, and grading of the relocation site, except as otherwise provided for on the Plans and it shall include all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to fulfill the requirements of the pay item in accordance with the Plans, the Specifications, and other terms of the Contract.
- C. Payment for a moving item involving transplanting of trees, shrubbery, etc. is full compensation for excavating and preparing planting pits; moving, setting, and watering the transplanted items; and all other materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to satisfactorily complete the work.
- D. No payment is made for a moving item until the Contractor secures a statement from the property owner or owners certifying that the work has been performed to the property owner's satisfaction and that the Department and Contractor are released from all responsibility and liability in connection with the work. In extreme cases when, in the opinion of the RCE, this requirement is

being abused by the property owner the Department, at its option, may waive the procurement of the owner's release.

- E. No payment shall be made for the moving or relocation of public utilities under the terms of this contract. The Contractor is hereby made aware that the Colleton County Transportation Committee shall be responsible for the costs associated with moving or relocating public utilities.

**END OF SECTION**

## SECTION 310810

### SEEDING

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. The work covered by this Section consists of furnishing all labor, equipment and material required to place topsoil, seed, commercial fertilizer, agricultural limestone and mulch material, including seedbed preparation, harrowing, compacting and other placement operations on graded earthen areas as described herein and/or shown on the Drawings. In general, seeding operations shall be conducted on all newly graded earthen area not covered by structures, pavement or sidewalks; all cleared or grubbed areas which are to remain as finish grade surfaces; and on all existing turf areas which are disturbed by construction operations and which are to remain as finish grade surfaces. Areas disturbed by borrow activities shall also be seeded according to these Specifications.
- B. The work shall include temporary seeding operations to stabilize earthen surfaces during construction or inclement weather and to minimize stream siltation and erosion. Temporary seeding shall be performed at the times and locations as directed by the RCE.

##### 1.02 DEFINITIONS

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

Equipment: *page 8 of SCDOT Standard Specifications*  
Materials: *page 8 of SCDOT Standard Specifications*  
Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*  
(the) Specifications: *page 13 of SCDOT Standard Specifications*  
Subbase: *page 14 of SCDOT Standard Specifications*  
Subgrade: *page 14 of SCDOT Standard Specifications*  
Traffic Lane: *page 15 of SCDOT Standard Specifications*  
Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

##### 1.03 RELATED SECTIONS and DOCUMENTS

###### 1.03.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 Specification Sections, apply to this Section.
- B. The Storm Water Pollution and Prevention Plan (SWPPP) in effect for this project. The Contractor and each sub-contractor is advised to read and sign the SWPPP (as a co-permittee).

###### 1.03.2 RELATED SECTIONS

Other Sections of the Specifications related to this Section include the following:

###### Division 31:-Sitework

Section 310201- Clearing and Grubbing.  
Section 310203- Roadway and Drainage Excavation  
Section 310208- Subgrade  
Section 310209- Shoulders and Slopes  
Section 310305- Graded Aggregate Base  
Section 310403- Hot Mix Asphalt–Surface Course  
Section 310600- Maintenance and Traffic Control  
Section 310625- Permanent Pavement Markings-Paint  
Section 310627- Thermoplastic Pavement Markings  
Section 310714- Storm Sewers and Culvert Pipes.  
Section 310719- Storm Drainage Structures  
Section 310720- Concrete Curbing, Sidewalk & Driveways.  
Section 310808- Moving Items-Shrubbery, Fences  
Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control

Section 310818- Interlocking Concrete Brick Pavers

**1.04 QUALITY ASSURANCE**

- A. Prior to seeding operations, the Contractor shall furnish to the Engineer labels or certified laboratory reports from an accredited commercial seed laboratory or a state seed laboratory showing the analysis and germination of the seed to be furnished. Acceptance of the seed reports shall not relieve the Contractor of any responsibility or liability for furnishing seed meeting the requirements of this Section.
- B. Prior to topsoil operations, the Contractor shall obtain representative samples and furnish soil test certificates including textural, pH, and organic analysis from the State University Agricultural Extension Services or other certified testing laboratory.
- C. All seeding, whether temporary or permanent, shall be done in accordance with SCDOT Standard Specifications, latest edition, Section 810

**1.05 SUBMITTALS**

- A. See Section 810.21 of the SCDOT Standard Specifications, latest edition.

**PART 2 PRODUCTS or MATERIALS**

**2.01 ACCEPTABLE MANUFACTURERS**

- A. All materials shall conform to the requirements and standards of this Section.
- B. Wood-cellulose fiber mulch shall be manufactured by Weyerhaeuser Company or Conway Corporation or approved equal.
- C. All seed to be used to complete the work of this Section shall conform to the state laws and requirements and regulations of the South Carolina Department of Agriculture (SCDA).

**2.02 TOPSOIL**

- A. Utilizing designated stockpiles or borrow areas on site, the contractor shall place a minimum of 4-inches of topsoil over all graded earthen areas and over any other areas to be seeded. Sources of topsoil shall be approved by the Engineer prior to disturbance. Importing topsoil from offsite sources shall be at the discretion of the Engineer and shall be justification for additional compensation to the Contractor. A change order properly authorized by the Owner shall be agreed upon prior to importing offsite topsoil. No additional compensation will be allowed for spreading of topsoil.
- B. Topsoil shall be friable containing a large amount of humus and shall be original surface soil of good, rich, uniform quality, free from any material such as hard clods, stiff clay, hardpan, partially disintegrated stone, pebbles larger than 1/2-inch diameter, lime cement, bricks, ashes, cinders, slag, concrete, bitumen or its residue, boards, sticks, chips or other undesirable material harmful or unnecessary to plant growth. Topsoil shall be reasonably free from perennial weeds and shall not contain objectionable plant material, toxic amounts of either acid or alkaline elements or vegetable debris undesirable or harmful to plant life.
- C. Topsoil shall be natural topsoil and shall be classifiable as loam, silt loam, clay loam, sandy loam, or a combination thereof. The pH range shall be from 5.5 to 7.0. Topsoil shall contain not less than five percent not more than 20 percent, by weight, of organic matter as determined by loss on ignition of over-dried samples to 65 degrees C.

**2.03 SEED**

- A. Seed shall be delivered in new bags that are sound and labeled in accordance with the U.S. Department of Agriculture Federal Seed Act.
- B. All seed shall be from the last crop available at time of purchase and shall not be moldy, wet or otherwise damaged in transit or storage.
- C. Seed shall bear the growers analysis testing to 98 percent for purity and 90 percent for germination. At the discretion of Engineer, samples of seed may be taken for verification against the grower's analysis.
- D. Species, rate of seeding, fertilization and other requirements are shown in Table 1 of this Section.

**2.04 FERTILIZER AND LIMING MATERIALS**

- A. Fertilizer and liming materials shall comply with applicable state, local and federal laws concerned with their production and use.
- B. Commercial fertilizer shall be a ready mixed material equivalent to the grade or grades specified in subsection 810.2.5 of the SCDOT Standard Specifications, 2007 edition. Container bags shall have the name and address of the manufacturer, the brand name, net weight and chemical composition.
- C. Agricultural limestone shall be a pulverized dolomitic limestone having a calcium carbonate content of not less than 85 percent by weight and shall conform to subsection 810.2.6 of the SCDOT Standard Specifications, 2007 edition. Agricultural limestone shall be crushed so that a least 85 percent of the material will pass a No.10 mesh screen and 50 percent will pass a No.40 mesh screen.

#### **2.05 MULCH MATERIAL**

- A. All mulch materials shall be air dried and reasonably free of noxious weeds and weed seeds or other materials detrimental to plant growth.
- B. Mulch shall be composed of wood cellulose fiber, straw or stalks, as specified herein. Mulch shall be suitable for spreading with standard mulch blowing equipment.
- C. Straw mulch shall be partially decomposed stalks of wheat, rye, oats or other approved grain crops.
- D. Stalks shall be the partially decomposed, shredded residue of corn, cane, sorghum or other approved standing field crops.

#### **2.06 MULCH BINDER**

- A. Mulch on slopes exceeding 3 to 1 ratio shall be held in place by the use of an approved mulch binder. The mulch binder shall be non-toxic to plant life and shall be acceptable to the Engineer.
- B. Emulsified asphalt tackifier shall meet the requirements of Subsection 407.2.4 of the SCDOT Standard Specifications, edition 2007 and shall be Grade SS-1, ASTM D 977. Cutback asphalt binder shall be Grade RC 70 or RC 250.

#### **2.07 INNOCULANTS FOR LEGUMES**

- A. All leguminous seed shall be inoculated prior to seeding with a standard culture of nitrogen-fixing bacteria that is adapted to the particular seed involved.

#### **2.08 IRRIGATION WATER**

- A. Water shall be clean, clear water free from any objectionable or harmful chemical qualities or organisms and shall be furnished by the Contractor.

### **PART 3 EXECUTION**

#### **3.01 SECURING AND PLACING TOPSOIL**

- A. Topsoil, where specified on the Drawings, shall be secured from areas from which topsoil has not been previously removed, either by erosion or mechanical methods. Topsoil shall not be removed to a depth in excess of the depth approved by the RCE.
- B. Unless otherwise directed by the RCE, all topsoil stripped under other Sections of the work of this contract shall be stockpiled and secured in accordance with all permits or regulations.
- C. At the end of the Contract, if the stockpiled material is not scheduled or needed for use to complete work of this or other Sections of the Contract and upon receipt of a written directive from the RCE, it shall become the property of the Contractor for removal and disposal at an offsite location. Disposal of stockpiled topsoil shall be done in accordance and compliance with all applicable local, State and Federal Laws.
- D. The area or areas from which topsoil is secured shall possess such uniformity of soil depth, color, texture, drainage and other characteristics as to offer assurance that, when removed the product will be homogeneous in nature and will conform to the requirements of these Specifications.
- E. All areas from which topsoil is to be secured, shall be cleaned of all sticks, boards, stones, cement, ashes, cinders, slag, concrete, bitumen or its residue and any other refuse which will hinder or prevent growth.
- F. In securing topsoil from a designated pit, or elsewhere, should strata or seams of material occur

which do not comes under the requirements for topsoil, such material shall be removed from the topsoil or if required by the Engineer, the pit shall be abandoned.

- G. Before placing or depositing topsoil upon any areas, all improvement within the area shall be completed, unless otherwise approved by the Engineer.
- H. The areas in which topsoil is to be placed or incorporated shall be prepared before securing topsoil for use.

### **3.02 SEEDBED PREPARATION**

- A. Before fertilizing and seeding, the topsoil surfaces shall be trimmed and worked to true line from unsightly variation, bumps, ridges and depressions and all detrimental material, roots and stones larger than 3-inches in any diameter shall be removed from the soil.
- B. Not earlier than 24 hours before seed is to be sown, the soil surface to be seeded shall be thoroughly cultivated to a depth of not less than 4-inches with a weighted disc, tiller, pulvimixer or other equipment, until the surface is smooth and in a condition acceptable to the Engineer.
- C. If the prepared surface becomes eroded as a result of rain or for any other reason, or becomes crusted before the seed is sown, the surface shall again be placed in a condition suitable for seeding.
- D. Ground preparation operations shall be performed only when the ground is in a tillable and workable condition, as determined by the Engineer.

### **3.03 FERTILIZATION AND LIMING**

- A. Following seedbed preparation, fertilizer shall be applied to all areas to be seeded so as to achieve the application rates shown in Table 'A'. (Below)
- B. Fertilizer shall be spread evenly over the seedbed and shall be lightly harrowed, raked, or otherwise incorporated into the soil for a depth of 1-inch.
- C. Fertilizer need not be incorporated in the soil as specified above when mixed with seed in water and applied with power sprayer equipment. The seed shall not remain in water containing fertilizer for more than 30 minutes when a hydraulic seeder is used.
- D. Agricultural limestone shall be thoroughly mixed into the soil according to the rates shown in Table A. The specified rate of application of limestone may be reduced by the Engineer if pH tests indicate this to be desirable. It is the responsibility of the Contractor to obtain such tests and submit the results to the Engineer for adjustment in rates.
- E. It is the responsibility of the Contractor to make one application of a maintenance fertilizer according to the recommendations listed in Table 'A' (Below).

### **3.04 SEEDING**

- A. Seed of the specified group shall be sown as soon as preparation of the seedbed has been completed. No seed shall be sown during high winds, nor until the surface is suitable for working and is in a proper condition. Seeding shall be performed during the dates shown in Table A unless otherwise approved by the Engineer. Seed mixtures may be sown together provided they are kept in a thoroughly mixed condition during the seeding operation.
- B. Seed shall be uniformly sown by any approved mechanical method suitable for the slope and size of the areas to be seeded, preferably with a broadcast type seeder, windmill hand seeder or approved mechanical power drawn seed drills. Hydro-seeding and hydro-mulching may be used on steep embankments, provided full coverage is obtained. Care shall be taken to adjust the seeder for seeding at the proper rate before seeding operations are started and to maintain their adjustment during seeding. Seed in hoppers shall be agitated to prevent segregation of the various seeds in a seeding mixture.
- C. Immediately after sowing, the seeds shall be covered and compacted to a depth of 1/8 to 3/8-inch by a cultipacker or suitable roller.
- D. Leguminous seeds shall be inoculated prior to seeding with an approved and compatible nitrogen-fixing inoculant in accordance with the manufacturer's mixing instructions.

### **3.05 MULCHING**

- A. All seeded areas shall be uniformly mulched in a continuous blanket immediately after seeding. The

mulch shall be applied evenly so as to permit sunlight to penetrate and the air to circulate and at the same time shade the ground, reduce erosion and conserve soil moisture. Approximately 45 percent of the ground shall be visible through the mulch blanket.

- B. One of the following mulches shall be spread evenly over the seeded areas at the following application rates:
  - 1. Wood Cellulose Fiber: 1,400 pounds/acre.
  - 2. Straw: 4,000 pounds/acre.
  - 3. Stalks: 4,000 pounds/acre.
  - 4. These rates may be adjusted at the discretion of the Engineer at no additional cost to the Owner, depending on the texture and condition of the mulch material and the characteristics of the seeded area.
- C. Mulch on slopes greater than 3 to 1 ratio shall be held in place by the use of an approved mulch binder. Binder shall be thoroughly mixed and applied with the mulch. Emulsified asphalt or cutback asphalt shall be applied at the approximate rate of five gallons per 1,000 square feet as required to hold the mulch in place.
- D. The Contractor shall cover structures, poles, fences and appurtenances if the mulch binder is applied in such a way that it would come in contact with or discolor the structures.
- E. Mulch and binder shall be applied by suitable blowing equipment at closely controlled application rates in a manner acceptable to the Engineer.

**3.06 IRRIGATION WATERING**

- A. The Contractor shall be responsible for maintaining the proper moisture content of the soil to insure adequate plant growth until a satisfactory stand is obtained. If necessary, watering shall be performed to maintain an adequate water content in the soil.
- B. Watering shall be accomplished by hoses, tank truck or sprinklers in such a way to prevent erosion, excessive runoff and over-watered spots.

**3.07 MAINTENANCE**

- A. Upon completion of seeding operations, the Contractor shall clear the area of all equipment, debris and excess material and the premises shall be left in a neat and orderly condition.
- B. The Contractor shall maintain all seeded areas without additional payment until final acceptance of the work by the Owner, and any regrading, refertilizing, reliming, reseeding or remulching shall be done at Contractor's own expense. Seeding work shall be repeated on defective areas until a satisfactory uniform stand is accomplished. Damage resulting from erosion, gully's, washouts or other causes shall be repaired by filling with topsoil, compacting and repeating the seeding work at Contractor's expense.

TABLE A  
**SEEDING REQUIREMENTS**

Area	Sowing Season	Species	Rates per acre			
			Seed	Fertilizer	Limestone	Maintenance
Temporary Flat to Rolling Terrain with Slopes Less than 3:1	8/1 - 4/1	Ryegrass Sudangrass	40 lbs.	500 lbs. (10-10-10)	2000 lbs. 2000 lbs.	400 lbs. (10-10-10)
	4/1 - 8/1		60 lbs.	500 lbs. (10-10-10)		400 lbs. (10-10-10)
Temporary Embankments with Slopes Greater than 3:1	3/1 - 6/1	Weeping Lovegrass	4 lb.	500 lbs. (10-10-10)	2000 lbs.	400 lbs. (10-10-10)
Permanent Flat to Rolling Terrain with Slopes Less	3/1 - 6/15	Wilmington Bahia & Bermuda, Common	30 lbs. 6 lbs.	1500 lbs. (6-12-12)	2000 lbs.	400 lbs (10-10-10)
	8/15 - 10/30		50 lbs.			

than 3:1		(hulled) Fescue, Tall		1500 lbs. (6-12-12)		400 lbs. (10-10-10)
Permanent Embankments with Slopes Greater than 3:1	3/1 - 6/30	Common Bermuda (Hulled Seed)& Weeping Lovegrass	6 lb.	1500 lbs. (6-12-12)	2000 lbs.	400 lbs. (10-10-10)
	9/1 - 3/30	*Lespedeza Sericea & Tall Fescue	2 lb. 60 lbs. 30 lbs.	1500 lbs. (6-12-12)	2000 lbs.	400 lbs. (10-10-10)

Note: Omit lime application in permanent grass establishment if it follows temporary grass established in the same area.

\*Inoculate seed with EL inoculate.

**PART 4 - MEASUREMENT**

**4.01 GENERAL**

- A. The quantity for the pay item Permanent Vegetation, Temporary Vegetation, Temporary Seeding, Seeding (Unmulched) or Seeding (Mulched) is the ground surface area with acceptable vegetation or stand of grass and is measured by the one-thousand square yard (MSY) unit, complete, and accepted.
- B. If the pay item Permanent Vegetation, Temporary Vegetation, Temporary Seeding, Seeding (Unmulched) or Seeding (Mulched) is not included in the Contract, the Permanent Vegetation, Temporary Vegetation, Temporary Seeding, Seeding (Unmulched) or Seeding (Mulched) is not measured for payment directly and is considered included in contract unit bid price of the various other items of work.

**PART 5 – PAYMENT**

**5.01 GENERAL**

- A. Payment for the accepted quantity for Permanent Vegetation, Temporary Vegetation, Temporary Seeding, Seeding (Unmulched) or Seeding (Mulched), shall be measured in accordance with subsection 810.5 of the SCDOT Standard Specifications-2007 edition, and is determined using the contract unit bid price for the pay item, or as;
- B. Specified elsewhere in the contract documents.
- C. Payment is full compensation for Permanent Vegetation, Temporary Vegetation, Temporary Seeding, Seeding (Unmulched) or Seeding (Mulched ) as specified or directed and includes all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract.

**END OF SECTION**

## SECTION 310815

### EROSION AND SEDIMENTATION CONTROL

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. The work specified in this Section consists of providing and maintaining temporary and permanent erosion and sedimentation controls as shown on the Drawings. This Section also specifies the subsequent removal of temporary erosion and sedimentation controls.
- B. Temporary and permanent erosion and sedimentation controls include grassing and mulching of disturbed areas and structural barriers at those locations which will ensure that erosion during construction will be maintained within acceptable limits. Acceptable limits are as established by the South Carolina Erosion and Sedimentation Control Act of 1975, as amended through 1995, Section 402 of the Federal Clean Water Act, and applicable codes, ordinances, rules, regulations and laws of local and municipal authorities having jurisdiction.
- C. Temporary and permanent erosion and sedimentation controls include grassing and mulching of disturbed areas and structural barriers and all other Best Management Practices (BMPs) required by this Contract shall be installed in compliance with SCDOT Standard Specifications, including SC-M-810, 815-1, 815-2, 815-4, 815-5, 815-6, 815-7 and 815-10.

##### 1.02 DEFINITIONS

- A. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

Equipment: *page 8 of SCDOT Standard Specifications*  
Materials: *page 8 of SCDOT Standard Specifications*  
Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*  
(the) Specifications: *page 13 of SCDOT Standard Specifications*  
Subbase: *page 14 of SCDOT Standard Specifications*  
Subgrade: *page 14 of SCDOT Standard Specifications*  
Traffic Lane: *page 15 of SCDOT Standard Specifications*  
Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

##### 1.03 RELATED SECTIONS & DOCUMENTS

###### 1.03.1 RELATED DOCUMENTS

- A. South Carolina Department of Transportation Standard Specifications, 2007 edition.
- B. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 Specification Sections, apply to this Section.
- C. The Storm Water Pollution and Prevention Plan (SWPPP) in effect for this project. The Contractor and each sub-contractor is advised to read and sign the SWPPP (as a co-permittee).

###### 1.03.2 RELATED SECTIONS

###### Division 31:-Sitework

Section 310201- Clearing and Grubbing.  
Section 310203- Roadway and Drainage Excavation  
Section 310208- Subgrade  
Section 310209- Shoulders and Slopes  
Section 310305- Graded Aggregate Base  
Section 310403- Hot Mix Asphalt-Surface Course  
Section 310600- Maintenance and Traffic Control  
Section 310625- Permanent Pavement Markings-Paint  
Section 310627- Thermoplastic Pavement Markings  
Section 310714- Storm Sewers and Culvert Pipes.  
Section 310719- Storm Drainage Structures  
Section 310720- Concrete Curbing, Sidewalk & Driveways.

Section 30808- Moving Items-Shrubbery, Fences  
Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control  
Section 310818- Interlocking Concrete Brick Pavers

#### **1.04 QUALITY ASSURANCE**

##### **1.04.1 STANDARDS OF ASSURANCE**

- A. Temporary and permanent erosion and sedimentation controls include grassing and mulching of disturbed areas and structural barriers and all other Best Management Practices (BMPs) required by this Contract shall be installed per all issued permits governing land disturbance(s) generated by work of this Contract;
- B. The in-place Comprehensive and On-site Stormwater Pollution Prevention Plan (C-SWPPP/OS-SWPPP) as in effect or as amended by on-going site requirements and inspections or as;
- C. As well as directed by the RCE.
- D. The commencement of Land Disturbance Activities of this Contract can not commence until the OS-SWPPP has been fully implemented, including the issuance of the certificates of attendance to all contractors and sub-contractors.
- E. The Contractor is made aware that the temporary and permanent erosion and sedimentation control measures shown on the Drawings are minimum requirements. Any additional erosion and sedimentation control measures required by the Contractor's means, methods, techniques and sequence of operation will be installed by the Contractor at no additional cost to the Owner.
- F. The Contractor shall perform all work under this Section in accordance with all pertinent rules and regulations including, but not necessarily limited to, those stated in these Specifications, Where provisions of pertinent rules and regulations conflict with these Specifications, the more stringent provisions shall govern.
- G. The Contractor shall provide all materials and promptly take all actions necessary to achieve effective erosion and sedimentation control in accordance with the South Carolina Erosion and Sedimentation Control Act of 1975, as amended (OCGA 12-7-1, et.seq.) Local ordinances, other permits, local enforcing agency guidelines and these Specifications.

##### Basic Principals:

- 1. Coordinate the land disturbance activities to fit the topography, soil types and conditions.
- 2. Minimize the disturbed area and the duration of exposure to erosive elements.
- 3. Provide temporary or permanent stabilization to disturbed areas immediately after rough grading is complete.
- 4. Safely convey run-off from the site to a stable outlet to prevent flooding and damage to downstream facilities resulting from increased runoff from the site.
- 5. Retain sediment on-site that was generated on-site.
- 6. Minimize encroachment upon watercourses

##### **1.04.2 IMPLEMENTATION**

- A. The Contractor is solely responsible for the control of erosion within the Project site and the prevention of sedimentation from leaving the Project site or entering waterways.
- B. The Contractor shall install temporary and permanent erosion and sedimentation controls which will ensure that runoff from the disturbed area of the Project site shall pass through a filter system before exiting the Project site.
- C. The Contractor shall provide temporary and permanent erosion and sedimentation control measures to prevent silt and sediment from entering the waterways. The Contractor shall maintain an undisturbed vegetative buffer a minimum of 25 feet from the top of the bank. The Contractor will be provided with a Land Disturbance Permit that allows encroachments on the 25 foot vegetative buffer in specific areas. The Contractor shall exercise extreme care during land disturbance operations with the 25 foot vegetative buffer to prevent degradation of the stream.
- D. The Contractor shall limit land disturbance activity to those areas shown on the Drawings.
- E. All fines imposed for improper erosion and sedimentation control shall be paid by the responsible party as defined by the signed Co-permittee agreement in the SWPPP.

### 1.04.3 MAINTENANCE

- A. Once initial required erosion and sedimentation control measures required by the terms and conditions of the Contract have been implemented, the Contractor shall be responsible for maintaining erosion and sedimentation control measures with disturbed areas on the entire site at no additional cost to the Owner until the acceptance of the Project.
- B. Maintenance shall include mulching, re-seeding, clean-out of sediment barriers and sediment ponds, replacement of washed-out or undermined rip rap and erosion control materials, to the satisfaction of the Engineer.
- C. As directed by the RCE, in response to SWPPP inspections, the Contractor shall install any and all additional erosion and sedimentation control measures and BMPs required to keep the project site(s) in compliance with all local, State and Federal permits having jurisdiction over the project. Payment for additional work required to keep the project in compliance shall be made in accordance with the unit price bid for the relevant item of work.

### 1.05 SUBMITTALS

- A. Submit product data in accordance with the requirements of these Specifications.
- B. Prior to any construction activity, the Contractor shall submit, for the Engineer's approval, a schedule for the accomplishment of temporary and permanent erosion and sedimentation control work. No work shall be started until the erosion and sedimentation control schedule and methods of operation have been approved by the Engineer.
- C. The Contractor is made aware that the temporary and permanent erosion and sedimentation control measures shown on the Drawings are minimum requirements. Any additional erosion and sedimentation control measures required by the Contractor's means, methods, techniques and sequence of operation will be installed by the Contractor at no additional cost to the Owner.
- D. Perform all work under this Section in accordance with all pertinent rules and regulations including, but not necessarily limited to, those stated in these Specifications, Where provisions of pertinent rules and regulations conflict with these Specifications, the more stringent provisions shall govern.
- E. Provide all materials and promptly take all actions necessary to achieve effective erosion and sedimentation control in accordance with the South Carolina Erosion and Sedimentation Control Act of 1975, as amended (OCGA 12-7-1, et.seq.) Local ordinances, other permits, local enforcing agency guidelines and these Specifications.

#### Basic Principals:

- 1. Coordinate the land disturbance activities to fit the topography, soil types and conditions.
- 2. Minimize the disturbed area and the duration of exposure to erosive elements.
- 3. Provide temporary or permanent stabilization to disturbed areas immediately after rough grading is complete.
- 4. Safely convey run-off from the site to a stable outlet to prevent flooding and damage to downstream facilities resulting from increased runoff from the site.
- 5. Retain sediment on-site that was generated on-site.
- 6. Minimize encroachment upon watercourses.

### 1.04.3 MAINTENANCE

- A. The Contractor shall maintain erosion and sedimentation control measures with disturbed areas on the entire site at no additional cost to the Owner until the acceptance of the Project. Maintenance shall include mulching, re-seeding, clean-out of sediment barriers and sediment ponds, replacement of washed-out or undermined rip rap and erosion control materials, to the satisfaction of the Engineer.

## PART 2 PRODUCTS or MATERIALS

### 2.01 SEDIMENT BARRIER

#### A. Silt Fence:

- 1. Type A silt fence shall meet the requirements of Section 815 of the South Carolina Department of Transportation Standard Specifications, latest edition.
- 2. Silt fence fabric shall be an approved product on the SCDOT Qualified Product List No. 36,

latest edition.

- B. Rock Cheek Dams: Stone shall conform to the requirements of Section 804 of the South Carolina Department of Transportation Standard Specification, latest edition, for Stone Dumped Rip Rap except the stone shall be 8-inches or less at the greatest dimension.

## **2.02 CONSTRUCTION ENTRANCE/EXITSTONE**

- A. Use sound, tough, durable stone resistant to the action of air and water. Slabby or shaley pieces will not be acceptable. Aggregate size shall be in accordance with the specifications shown on the Erosion and Sediment Control Plan-Stabilized Construction Entrance and shall conform to Section 815.1.1.4 of the South Carolina Department of Transportation Standard Specifications, 2007 edition.

## **2.03 CONCRETE**

- A. Concrete shall conform to the requirements specified in Section 310720 of these Specifications for Class 'B' concrete.

## **2.04 RIP RAP**

- A. Stone Rip Rap: Use sound, tough durable stones resistant to the action of air and water. Slabby or shaley pieces will not be acceptable. Unless shown or specified otherwise, stone rip rap shall be Class 'A'.
  - 1. Type Rip Rap: Rip rap size shall conform to Section 804.2.1 of the South Carolina Department of Transportation Standard Specification for Dumped, Grouted or Hand Placed Rip Rap.
  - 2. All other specified sizes of Rip Rap: Rip rap size shall conform to Section 804.2.1 of the South Carolina Department of Transportation Standard Specifications for Dumped, Grouted or Hand Placed Rip Rap, Class B through F.
  - 3. 200 Pound Rip Rap: Minimum weight of individual stones shall be 200 pounds.
- B. Sand-Cement Bag Rip Rap: Sand-cement bag rip rap shall conform to the South Carolina Department of Transportation Standard Specifications, Section 804.2.4.

## **2.05 PLASTIC FILTER FABRIC**

- A. Plastic filter fabric shall conform to the South Carolina Department of Transportation Standard Specifications, Section 804.2.11 for woven fabrics.
- B. Plastic filter fabric shall be an approved product on the South Carolina Department of Transportation Qualified Product List No. 28, latest edition.

## **2.06 GABIONS**

- A. Gabions shall be large, multi-celled, rectangular wire mesh boxes filled with 4 to 8-inch size pieces of stone to prevent erosion, scour or sloughing of an embankment. Gabions shall have the following features.
  - 1. Hexagonal mesh pattern, which under stress will deform but not break.
  - 2. Triple twist, which will make the mesh non-raveling.
  - 3. Reinforcing wires woven into each corner, which will increase the strength at the stress points and help the gabion retain its shape during and after filling.
  - 4. A diaphragm securely attached to the base, which will prevent the shifting of the stone and at the same time, reinforce the gabion.
- B. The wire mesh shall have an opening of approximately 3 x 4-inches and shall be a minimum 12 gauge. Wire mesh shall be a minimum 12 gauge. Wire mesh shall be galvanized and PVC coated.
- C. Gabion baskets shall be three feet high, three feet wide and 3 - 12 feet long, as required to install the gabion baskets as shown on the Drawings.
- D. Gabion baskets shall be equal to Maccaferri Gabions, Inc.

**2.07 GRASSING**

- A. Grassing materials shall meet the requirements of the following listed sections of the South Carolina Department of Transportation Standard Specifications, latest edition:

Material	Section
Topsoil	811.2.2
Seed and Sod	810.2.2/813.2.1
Fertilizer	810.2.5
Agricultural Lime	810.2.6
Mulch	810.2.8 - 810.2.11
Inoculants	810.2.4

- B. Seed species shall be provided as shown on the Drawings.
- C. Mulch Binder: Mulch on slopes exceeding 3 (horizontal) to 1 (vertical) shall be held in place by the use of a mulch binder, as approved by the Engineer. The mulch binder shall be non-toxic to plant and animal life and shall be approved by the Engineer.
- D. Irrigation Water: Water shall be free of excess and harmful chemicals, organisms and substances which may be harmful to plant growth or obnoxious to traffic. Salt or brackish water shall not be used. Water shall be furnished by the Contractor.

**PART 3 EXECUTION**

**3.01 GENERAL**

- A. Temporary and permanent erosion and sedimentation control measures shall prevent erosion and prevent sediment from exiting the site. If, in the opinion of the Engineer, the Contractor's temporary erosion and sedimentation control measures or additional devices to control erosion and sedimentation on the site at no additional cost to the Owner.
- B. All erosion and sedimentation control measures and devices shall be constructed and maintained as indicated on the Drawings or specified herein until adequate permanent disturbed area stabilization has been provided and accepted by the Engineer, all temporary erosion and sedimentation control structures and devices shall be removed.

**3.02 INSTALLATION**

- A. Construction Entrance/Exit:
1. Construction exit(s): Shall be placed as shown on the Drawings and as directed by the Engineer. A construction exit shall be located at any point traffic will be leaving a disturbed area to a public right-of-way, street, alley, sidewalk or parking area.
  2. Placement of Construction Exit Material: The ground surface upon which the construction exit material is to be placed shall be prepared to a smooth condition free from obstructions, depressions or debris. The plastic filter fabric shall be placed to provide a minimum number of overlaps and a minimum width of one foot of overlap at each joint. The stone shall be placed with its top elevation conforming to the surrounding roadway elevations. The stone shall be dropped no more than three feet during construction.
  3. Construction Exit Maintenance: The Contractor shall regularly maintain the exit with the top dressing of stone to prevent tracking or flow of soil onto public rights-of-way and paved surfaces as directed by the Engineer.
  4. Construction Exit Removal: Construction exit(S) shall be removed and properly disposed of when the disturbed area has been properly stabilized, the tracking flow or soil onto public rights-

of-way or paved surfaces has cease and as directed by the Engineer.

B. Sediment Barriers:

1. Sediment barriers shall include, but are not necessarily limited to, silt fences, rock check dams, inlet sediment traps and any device which prevents sediment from exiting the disturbed area.
2. Silt fences, hay bales and rock check dams shall not be used in any flowing stream, creek or river.
3. Sediment barriers shall be installed as shown on the Drawings and as directed by the Engineer.
4. Sediment barriers shall be maintained to ensure the depth of impounded sediment is no more than one-half of the original height of the barrier or as directed by the Engineer. Torn, damaged, destroyed or washed-out shall be repaired, reinforced or replaced with new material and installed as shown on the Drawings and as directed by the Engineer.
5. Sediment Barrier Removal:
  - a. Sediment barrier shall be removed once the disturbed area has been stabilized with a permanent vegetative cover and the sediment barrier is no longer required as directed by the Engineer.
  - b. Accumulated sediment shall be removed from the barrier and removed from the site.
  - c. All non-biodegradable parts of the barrier shall be disposed of properly.
  - d. The disturbed area created by barrier removal shall be permanently stabilized.

C. Stone Rip Rap:

1. Rip rap shall be placed as shown on the Drawings and as directed by the Engineer. Rip rap shall be placed at all points where natural vegetation is disturbed on the banks of streams or drainage ditches. Compact backfill and place rip rap to prevent subsequent settlement and erosion. This requirement applies equally to construction along side a stream or drainage ditch as well as crossing a stream or drainage ditch.
2. When trenching across a stream or drainage ditch rip rap that is to be placed shall be brought to the correct lines and grades before placement is commenced. Where filling of depressions is required, the new material shall be compacted with hand or mechanical tampers. Unless at creek banks or otherwise shown or specified, rip rap shall begin in a toe ditch constructed in original ground, and the side next to the fill or cut shall have that same slope. After the rip rap is placed, the toe ditch shall be backfilled and the excess dirt hauled off of the site and disposed of properly.
3. Placement of Plastic Filter Fabric:
  - a. Plastic filter fabric shall be placed under all rip rap unless shown or specified otherwise.
  - b. Filter fabric shall not be placed under rip rap on stream or drainage ditch crossings.
  - c. The surface to receive filter fabric shall be prepared to a smooth condition free from obstructions, depressions and debris. The filter fabric shall be installed with the long dimension running up the slope and shall be placed to provide a minimum number of overlaps. The fabric shall be placed to provide a minimum width of one foot of overlap at each joint. The fabric shall be anchored in place with securing pins of the type recommended by the fabric manufacturer. Pins shall be placed on or within 3-inches of the centerline of the overlap. The fabric shall be placed loosely to avoid stretching and tearing during the placement of the stone. The fabric shall be protected at all times during construction from clogging due to clay, silts, chemicals or other contaminants. Contaminated fabric or fabric damaged during installation or during placement or rip rap shall be removed and replaced with uncontaminated and undamaged fabric at no additional cost to the Owner.
  - d. Placement of Rip Rap: Rip rap shall be placed on a 6-inch layer of soil, crushed stone or sand overlaying the filter fabric. Rip rap shall be placed with its top elevation conforming with the finished grade or the natural existing slope of the stream bank and stream bottom. The stone shall be dropped no more than three feet during construction.
    - i. Stone Rip Rap: Stone rip rap shall be placed to provide a uniform surface to the

thickness specified on the Drawings, or a minimum of 18-inches thick if unspecified. The thickness tolerance for the course shall be -3-inches and +6-inches.

- ii. Sand-Cement Bag Rip Rap: The bags shall be uniformly filled to the maximum capacity which will permit satisfactory closure. The bagged rip rap shall be placed by hand with the tied ends facing the same direction, with close, broken joints. When directed by the Engineer or required by the Drawings, header courses shall be placed. After placing, the bags shall be rammed or packed against one another to produce the required thickness and form a consolidated mass. The top of each bag shall not vary more than 3-inches above or below the required plane.

D. Gabions:

1. Where, in the opinion of the Engineer, the slope of the banks of the stream are too steep to support rip rap, gabions shall be provided, in lieu of rip rap.
2. Gabions shall be assembled to the manufacturer's recommendations. Laterally adjoining gabions shall be wired together along the front and back edges. Rip rap size for the gabion construction shall be large enough not to fall out of gabions, but small enough to form three layers. Gabions shall be placed over a 6-inch layer of soil, crushed stone or sand overlaying a filter fabric.

E. Grassing:

1. Grassing shall meet the requirements of Section 810/813 of the South Carolina Department of Transportation Standard Specifications, 2007 edition, unless specified otherwise.
2. Seed rate, fertilization and other requirements shall be provided as shown on the Drawings.
3. Temporary stabilization: Temporary stabilization shall be provided as shown on the Drawings and conforming to these Specifications to control erosion on the site. Temporary stabilization shall be provided to any area which will not receive permanent stabilization within the next 14 calendar days. Partial payment requests may be withheld for those portions of the Project not complying with this requirement.
4. Permanent Stabilization:
  - a. Permanent stabilization shall be provided as shown on the Drawings and conforming to these Specifications to control erosion on the site. Permanent stabilization shall be provided to all areas of land disturbance within seven calendar days of the completion of land disturbance for any area greater than 0.25 acre. Partial payment requests may be withheld for those portions of the Project not complying with requirement.
  - b. Where permanent stabilization cannot be immediately established because of an inappropriate season, the Contractor shall provide temporary stabilization. The Contractor shall return to the site at the appropriate season to provide permanent stabilization in areas that received only temporary stabilization.

**3.03 FIELD QUALITY CONTROL**

- A. All erosion and sedimentation control devices and structures shall be inspected by the Contractor at least once a week and immediately prior to each rainfall occurrence. Any device or structure found to be damaged will be repaired or replaced by the end of the day. Sediment ponds shall be cleaned out prior to the silt reaching the height or elevation shown on the Drawings.

**3.04 CLEAN-UP**

- A. Dispose of all excess erosion and sedimentation control materials in a manner satisfactory to the Engineer.
- B. Final clean-up shall be performed in accordance with the requirements of these Specifications.

**PART 4 MEASUREMENT**

**4.01 GENERAL**

- A. The quantity for the specified pay items in this section-Erosion and Sediment Control is to be determined as specified by section 815.5 of the SCDOT Standard Specifications-edition 2007.

- B. If the pay item for Sediment and Erosion Control is not included in the Contract, that pay item shall not be measured for payment directly and is considered included in contract unit bid price of the various other items of work.

**PART 5 PAYMENT**

**5.01 GENERAL**

- A. Payment for the accepted quantity of pay items for Erosion and Sediment Control, measured in accordance with subsection 815.5 or 813.5 of the SCDOT Standard Specifications-2007 edition, is determined using the contract unit bid price for the pay item, or as;
- B. Specified elsewhere in the contract documents.
- C. Payment is full compensation for pay items for Erosion and Sediment Control as specified or directed and includes all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract.

**END OF SECTION**

## SECTION 310818

### PERMEABLE INTERLOCKING CONCRETE PAVERS

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. This Section contains specifications for the materials, equipment, construction, measurement, and payment for the construction of Permeable Interlocking Concrete Pavers of an approved material, constructed on a prepared surface, and in conformance with the lines, grades, dimensions, thickness, and typical cross-section shown on the Plans or as otherwise specified.
- B. The Work to be completed under this Section of the Contract includes the furnishing of all trained and qualified labor, materials and equipment necessary for construction of Permeable Interlocking Concrete Pavers for streets, parking & pedestrian areas in conformance with the Plans and specifications or as otherwise specified.

##### 1.02 DEFINITIONS

- A. For the purpose of this section of the specifications, it shall be understood that the term Permeable Interlocking Concrete Pavers shall have the same reference, meaning, be synonymous to and imply the same technical standards here within as though the reference be to Pervious Pavers, Permeable Pavers, Water Shed Permeable Paver, Concrete Brick Paver, Permeable Interlocking Concrete Pavement, the Pavers, Solid Concrete Interlocking Paving Units and Concrete Brick Paver units.
- B. Bay or Area of Work, for the purpose of this section of the specifications, shall be defined as that defined area in which concrete brick pavers are to be placed but it shall not be of any greater dimension than the width of eight (8) contiguous parking stalls and their associated length/depth.
- C. See definitions-SCDOT-2007 Standard Specifications for Highway Construction-Section 101-Definition and Terms for some items related to the work of this Section, such as:

Equipment: *page 8 of SCDOT Standard Specifications*

Materials: *page 8 of SCDOT Standard Specifications*

Road, Roadbed & Roadway: *page 11 of SCDOT Standard Specifications*

(the) Specifications: *page 13 of SCDOT Standard Specifications*

Subbase: *page 14 of SCDOT Standard Specifications*

Subgrade: *page 14 of SCDOT Standard Specifications*

Traffic Lane: *page 15 of SCDOT Standard Specifications*

Travelway or Traveled Way: *page 15 of SCDOT Standard Specifications*

##### 1.01 RELATED SECTIONS and DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 31 Specification Sections, may apply to this Section.
- B. Related Sections include the following:

Division 31:-Sitework

Section 310201- Clearing and Grubbing.

Section 310203- Roadway and Drainage Excavation

Section 310208- Subgrade

Section 310209- Shoulders and Slopes

Section 310305- Graded Aggregate Base

Section 310403- Hot Mix Asphalt-Surface Course

Section 310600- Maintenance and Traffic Control

Section 310625- Permanent Pavement Markings-Paint  
Section 310627- Thermoplastic Pavement Markings  
Section 310714- Storm Sewers and Culvert Pipes.  
Section 310719- Storm Drainage Structures  
Section 310720- Concrete Curbing, Sidewalk & Driveways.  
Section 310808- Moving Items-Shrubbery, Fences  
Section 310810- Seeding  
Section 310815- Soil Erosion & Sediment Control  
Section 310818- Interlocking Concrete Brick Pavers

C. References:

1. American Society for Testing and Materials (ASTM)

- C 33 Specifications for Concrete Aggregates
- C 67 Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
- C 131 Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
- C 136 Method for Sieve Analysis for Fine and Coarse Aggregate.
- C 140 Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units
- C 150 Specifications for Portland Cement.
- C 207 Specifications for Hydrated Lime for Masonry purposes
- C 331 Specifications for Lightweight Aggregates for Concrete Masonry Units
- C 418 Test Method for abrasion Resistance of Concrete by Sandblasting
- C 595 Specifications for Blended Hydraulic Cements
- C 618 Specifications for Fly Ash and Raw or Calcinated Natural Pozzolan for use as a Mineral Admixture in Portland Cement Concrete.
- C 936 Standard Specification for Solid Interlocking Concrete Pavers
- C 979 Specification for Pigments for Integrally Colored Concrete.
- D 448 Standard Classification for Sizes of Aggregate for Road and Bridge Construction
- D 698 Test Methods for Moisture Density Relations of Soil and Soil Aggregate Mixtures Using a 5.5-lb (2.49 kg) Rammer and 12 in. (305 mm) drop.
- D 1557 Test Methods for Moisture Density Relations of Soil and Soil Aggregate Mixtures Using a 10-lb (4.54 kg) Rammer and 18 in. (457 mm) drop
- D 1883 Test Method for California Bearing Ratio of Laboratory-Compacted Soils
- D 2922 Standard Test Methods for Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth)
- D 4254 Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density

**1.04 QUALITY ASSURANCE**

**1.04.1.1 General**

- A. The Contractor/Installer shall be responsible for having the vertical and horizontal layout of the work of this section performed by a surveyor that is duly licensed by the State of South Carolina.
- B. The Contractor shall provide the RCE with a copy of the surveyor's layout plan and cut sheet prior to the commencement of the preparation of the subgrade.
- C. Benchmarks: The Contractor shall establish and maintain a minimum of two corresponding permanent bench marks on the site for reference. All vertical dimensions shall be checked from these benchmarks. The locations and all identifiers regarding these benchmarks shall be submitted in writing to the RCE.

**1.04.1.2 Product-Concrete Brick Paver units**

- A. Shall be as manufactured and or supplied by a company dedicated to providing this product in the Beaufort and Jasper County areas.

- B. Upon the completion of the installation of the Concrete Brick Paver units and prior to final payment, the Contractor responsible for installing the Concrete Brick Paver units shall submit written certification that the installed pavers meet or exceed each of the materials requirements specified elsewhere herein.

#### **1.04.1.3 Installation- Concrete Brick Paver units**

- A. The Contractor/Sub-contractor installing the Concrete Brick Paver units shall provide, to the RCE and Owner, documentation and three references in writing indicating a current continuing history of a satisfactory record of performance on completed projects of comparable size, material, design and quality.
- B. Prior to the commencement of the installation of the Concrete Brick Paver units, the Contractor shall submit the product specific data sheet(s) for the Concrete Brick Paver units to the RCE. That submittal shall specifically reference only the Concrete Brick Paver units to be installed. It shall provide signed and certified current product test results for the specific product/paver to be installed.
- C. Prior to the commencement of the installation of the Concrete Brick Paver units, the Contractor/Installer shall submit to the RCE; test results from a licensed/accredited independent testing facility that demonstrate that the pavers comply with the most current version of ASTM C936.
- D. The Contractor/Installer responsible for the installation of the Concrete Brick Paver units shall not sublet any portion of the work of the installation of the Concrete Brick Paver units without prior written approval by the Owners, General Contractor and the RCE.
- E. The installation of the Concrete Brick Paver units shall only be done by skilled workers with a minimum of three/five years of experience installing interlocking concrete pavers. It is preferred that the Superintendent or Foreperson with responsibility for coordinating, giving direction to or performing the work of the installation of the Concrete Brick Paver units be ICPI certified, Level I Concrete Paver Installer.
- F. At any time during and after the installation of the Concrete Brick Paver units, the Owner, General Contractor or the Engineer shall have and reserve the right to reject any stored, supplied or installed Concrete Brick Paver units that show visible defects that would interfere with proper placing of the units or impair strength or performance of the Concrete Brick Paver units or finished appearance of the units. Additionally the right is reserved by the above referenced parties to reject Concrete Brick Paver units because of minor cracks or minor chipping incidental to the delivery and handling of the Concrete Brick Paver units as well as any excessive cracks, chipping or unsightly cuts or modifications to the units caused or done as part of the installation of the pavers.

#### **1.04.1.4 Delivery, Storage and Handling of the Concrete Brick Paver unit modulus**

- A. Nonwoven Geotextile Fabric:
  - 1. Shall be delivered to the project in complete unopened rolls as packaged by the approved manufacturer.
  - 2. The delivered product shall be stored until used in a manner to prevent undue exposure to sunlight, moisture or dirt and in accordance with the manufacturer's recommendations.
  - 3. The product shall be properly handled when being transported or moved and when being placed it shall be handled in a manner which preserves and protects it from unwanted damage or tears.
- B. Base Stone:
  - 1. Shall be stockpiled in a relatively flat area, free of dust, loose dirt or moisture.

2. If required by site conditions, a ground cloth shall be required to prevent the introduction of dirt, dust or other deleterious particulate matter from below into the clean washed stone.
3. The base stone shall be stockpile clear of all other stockpiled materials to prevent contamination or introducing unwanted non-conforming stone into the stockpile. Segregation of stockpiles shall be maintained at all times.
4. Upon request by the RCE, at the end of each day, the Contractor may be required to provide load tickets for each load of stone delivered.

C. Bedding stone/Joint filler:

1. Shall be stockpiled in a relatively flat area, free of dust, loose dirt or moisture.
2. If required by site conditions, a ground cloth shall be required to prevent the introduction of dirt, dust or other deleterious particulate matter from below into the clean washed stone.
3. The base stone shall be stockpile clear of all other stockpiled materials to prevent contamination or introducing unwanted non-conforming stone into the stockpile. Segregation of stockpiles shall be maintained at all times.
4. Upon request by the RCE, at the end of each day, the Contractor may be required to provide load tickets for each load of stone delivered.

D. Concrete Brick Paver units:

1. Shall be shrink wrapped for shipping stability and delivered to the site on wooden pallets.
2. The delivery of the Concrete Brick Paver units shall be scheduled so as to minimize the time that they are on site prior to installation.
3. The pallets shall be placed as close as approximate to where they shall be installed.
4. The pallets shall be stacked no more than two high.
5. The Owner, General Contractor or the RCE reserve the right to reject any stored, supplied or stockpiled paver units that show visible defects that would interfere with proper placing of pavers or impair strength or performance of the pavers or finished appearance of the pavers. Additionally the right is reserved by the above referenced parties to reject pavers because of minor cracks or minor chipping incidental to the delivery and handling of the pavers.

**1.04.1.5 Warranty-Material and Installation of Concrete Brick Paver units**

- A. Material Warranty: The vendor or manufacture supplying the Concrete Brick Paver units shall provide the Owner with a written Limited Lifetime Warranty against the cracking of the Concrete Brick Paver units and warranty their structural integrity
- B. Installation Warranty: The Contractor responsible for installing the Concrete Brick Paver units shall provide the Owner a one year written warranty on the installation of the paver units. That warranty shall cover the removal, replacement, resetting and reinstallation (including line striping) of any pavers found to be defective, settled out of true line or not performing as normally anticipated and or the required adjustment(s) or corrections to the Nonwoven Geotextile Fabric, Base Stone, Bedding Stone or Joint filler Stone as may deemed to be necessary in order to restore the functionality of the Concrete Brick Paver modulus to meet the intent of its design. The warranty shall cover any and all costs of labor, materials or associated products or services directly relevant to the installation and performance of the Concrete Brick Paver units.

**104.2 SUBMITTALS**

**104.2.1 General:**

- A. Prior to award the contractor shall submit documentation and three references in writing that indicate the Contractor has a continuing history of a satisfactory record of performance on completed projects of comparable size, material, design and quality. That documentation shall include but not be limited to the following:

1. Project name and address, owner name and contact information
- B. This requirement may be waived by the RCE/Owner provided the Contractor can demonstrate to the satisfaction of the RCE/Owner that he/she has had prior successful experience in the concrete brick paver industry and provides a test panel for inspection and testing that meets the contract specifications.
- C. Prior to the commencement of work, the Contractor shall provide the RCE with written documentation that either the Superintendent or Foreperson with direct responsibility for coordinating, giving direction to or performing the work of the installation of the Concrete Brick Paver units are ICPI (Interlocking Concrete Paver Institute) certified, Level I.
- D. Prior to the commencement of the placement of the nonwoven geotextile fabric where specified or the stone base, the Contractor shall provide the RCE with Compaction Test results of the subgrade for each bay or dedicated area indicating that the subgrade has met the minimum standard for compaction and that it doesn't exceed the maximum acceptable standard for compaction.
- E. The contractor shall submit a drawing of the specified concrete brick paver pattern to the RCE for Owner's approval. No installation of pavers shall be done without the written approval of the paver pattern.

#### **104.2.2 Materials**

- A. Prior to the commencement of the installation of the Concrete Brick Paver units, the Contractor/Installer shall submit to the RCE; test results from a licensed/accredited independent testing facility that demonstrate that the paver units to be installed for the project comply with the most current version of ASTM C936.
- B. Prior to the ordering of the Concrete Paver units, the Contractor shall provide the RCE with up-to-date documentation or test results that the pavers to be used for the project meet the specified minimum compressive strength, the absorption requirements (ASTM C140) and the abrasion resistance requirements (ASTM C418).
- C. Prior to the ordering of the Concrete Paver units, the Contractor shall provide samples of paver units to the RCE for written approval. The samples of the paver units shall be of the size, type, dimension and color specified in the Contract Documents or on the Plans. This sampling shall represent a minimum of two random samples (pavers) per 1000 SF of installation area or part thereof.
- D. Prior to the commencement of the installation of the Concrete Brick Paver units, the Contractor/Installer shall submit to the RCE documentation as to the source(s) of the base stone and the bedding/joint filler stone that are to be supplied for the project. The vendor or source for the stone base and the bedding/joint filler stone shall be on the SCDOT list of Qualified Products Listings for Construction and Maintenance Materials.
- E. Prior to the commencement of the placement of the nonwoven geotextile fabric where or if specified, the Contractor shall provide the RCE with documentation that the product meets or exceeds the minimum requirements as specified herein. The submittal shall also include a 12"x12" representative sample for each type of product and for each separate manufacturer/vendor.
- F. If the Plans do not specify concrete curb, concrete curb and gutter or concrete header curb for edging the area of work or bay(s), the Contractor shall be required to submit a catalogue cut sheet and physical sample of a steel edging product to the RCE for written approval prior to the commencement of the placement of the Concrete Brick Paver modulus. The submittal should provide written documentation of the following:
  1. The steel edging shall be of a marine grade quality with regard to material and finish.

2. The steel edging product submitted shall be of sufficient size, strength, dimension and installation as to preserve the structural integrity of the installed concrete brick paver modulus against the normally anticipated vehicular loads and motion/forces generated by use.

#### **1.04.2.3 Mock-ups:**

- A. If the Contractor is required to provide a mock-up as part of the contract, then:
  1. The mock-up shall be a minimum of ten foot (10') in width and one (1) parking stall length or as otherwise directed by the RCE.
  2. The construction of the mock-up shall match the design specifications of the contract or plans as to type, size, style, dimension and configuration.
  3. Subject to acceptance by owner, mock-up may be retained as part of finished work.
  4. If the mock-up is not retained or is found to be not in compliance with the specifications, the Contractor shall remove it in its entirety, dispose of it in accordance with all applicable laws and regulations in effect at the time and restore the disturbed area to as near-like conditions as possible. No payment or compensation shall be made for a mock-up that is not retained.

## **PART 2 MATERIALS or PRODUCTS**

### **2.01 MATERIALS**

#### **A. Concrete Brick Paver Units:**

1. Concrete Brick Paver Units shall be manufactured such that they are not greater than 6-1/2 inches (160mm) in width, 9-1/2" inches (240mm) in length or 5-1/2 inches (140mm) in thickness.
2. Concrete Brick Paver units shall be made from lightweight or normal weight aggregates or mixed lightweight and normal weight aggregates.
3. The Concrete Brick Paver units shall have a minimum compressive strength of not less than 8,000 psi with no individual units less than 7200 psi, as testing in accordance with ASTM C140.
4. The Concrete Brick Pavers units shall meet absorption requirements of an average absorption of no greater than 5%, with no individual units greater than 7% and Abrasion resistance demonstrating a maximum volume loss of 0.915 Cu. In. per 7.75 Sq. In. [Average thickness loss of 0.118".] Testing shall be per ASTM C140 and C418 respectively.
5. Cementitious Materials used to manufacture Concrete Brick Paver units shall conform to the following applicable ASTM Specifications:
  - a. Portland Cements Specification C150
  - b. Blended Cements –Specification C595, Types IS or IP
  - c. Hydrated Lime , Type S - Specification C207
  - d. Pozzolans- Specification C618
6. Aggregates used to manufacture Concrete Brick Paver units shall conform to the following ASTM Specifications, except that grading requirements shall not necessarily apply:
  - a. Normal weight-Specification C33
  - b. Lightweight- Specification C331
7. Other Constituents used to manufacture Concrete Brick Paver units shall comply as follows:
  - a. Air entraining admixtures, color pigments, integral water repellants and finely ground silica shall be previously established by the Manufacturer of the Concrete Brick Paver units as suitable for use in concrete or either they shall conform to ASTM Standards where applicable or the Manufacturer shall show by test or documented experience that they, individually or in a composite mixture, will not be found to be detrimental to the concrete used to manufacture the Concrete Brick Paver Units.

- 8. All cement, aggregate products, admixtures and geotextile fabric products used in the manufacture and installation of the Concrete Brick Paver units shall be supplied from vendors that are on the SCDOT Qualified Products List unless waived by the RCE in writing.

A. Stone Aggregates-Hydraulic Reservoir/Base and Bedding:

- 1. General: Stone aggregates for base stone or bedding stone shall be:
  - a) Crushed stone, granite preferred, with 90% fractured faces, LA Abrasion < 40 per ASTM C 131, and minimum CBR of 80% per ASTM D 1883.
  - b) Rounded river gravel shall not be permitted for use or be found to be part of a blended aggregate mix scheduled for placement as a base or bedding stone.
  - c) All stone aggregate materials shall be washed with less than 1% passing the No. 200 sieve.
  - d) Joint/opening filler, bedding, base/hydraulic reservoir and sub-base stone aggregates shall conforming to ASTM D 448 gradation as shown in Tables 1 and 2 below.
- 2. Hydraulic Reservoir/Base Stone
  - a) Shall be clean washed # 57 stone, that being a # 57 aggregate composed of inch uniformly equal portions of #5 and #7 aggregates that range in size from 1 to 0.19 (No. 4 sieve/25 to 4.75 mm) and have the following gradation:

Gradation Table 1-# 57 Stone

<u>Stone Size</u>	<u>Passing</u>
1 1/2-inch sieve.....	100%
1-inch sieve.....	95 to 100%;
1/2-inch sieve.....	25 to 60%;
No. 4 sieve.....	0 to 10%;
No. 8 sieve.....	0 to 5%.

- 3. Bedding Stone/Joint/Opening Filler Stone
  - a) Shall be clean washed # 89M stone, free of dust and particulate matter, such that it be an # 89M aggregate stone composed of uniformly equal portions of #8 and #9 aggregates that range in size from 3/8 to 0.09 inch (No. 8 sieve/9.5 to 2.36 mm) and have the following gradation:

Gradation Table 2-# 89M Stone

<u>Stone Size</u>	<u>Passing</u>
1/2-inch sieve.....	100%
3/8-inch sieve.....	90 to 100%
No. 4 sieve.....	20 to 55%
No. 8 sieve.....	5 to 30%
No. 16 sieve.....	0 to 5%
No. 50 sieve.....	0 to 5%.

B. Geotextile Fabric:

- 1. The geotextile fabric to be used in the installation of the Permeable Concrete Brick Paver units shall be US Fabric – US 115NW as manufactured by US Fabrics, Inc. or approved equal. It shall be the following material specifications:
  - a. A lightweight nonwoven geotextile fabric made from stable filaments of polypropylene fiber that are needle-punched and heat set.
  - b. The geotextile fabric shall be 4oz./sy (136g/sm) in conformance with AASHTO M-288-06 and as tested by ASTM D-5261. It shall meet the following physical and technical requirements:

- c. The tensile strength of the nonwoven geotextile fabric shall be 115 lbs. (512N) as tested in accordance with ASTM D-4632.
- d. The nonwoven geotextile fabric shall have the following minimum characteristics:
  - i. The fabric shall have an elongation @ break of 50% in accordance with ASTM Test Method D-4632.
  - ii. The pressure required to puncture a sheet of nonwoven geotextile fabric shall be provided by a Mullen Burst Test that provides documentation that the fabric meets or exceeds a minimum requirement of 210 psi (1.448 kPa) as tested by ASTM D-3786, Puncture Strength of 65 lbs. (289N) as tested in accordance with ASTM Test Method D-4833, CBR Puncture strength of 300 lbs. (1,335N) as tested in accordance with ASTM Test Method D-6241 and Trapezoidal Tear strength of 50 lbs. (222N) as tested in accordance with ASTM Test Method D-4533.
  - iii. The Apparent Opening Size in the nonwoven geotextile fabrics shall be 70 US sieve (0.212N) as tested in accordance with ASTM Test Method D-4751, a Permittivity of 2.00 Sec.-1 and a Water Flow Rate of 140g/min/sf (5,689l/min/sm) as tested in accordance with ASTM D-4491.
  - iv. The UV Resistance @ 500 hours for the nonwoven geotextile fabric shall be 70% as tested in accordance with ASTM D-4355.

### **PART 3 EXECUTION**

#### **3.01 Subgrade:**

##### **A. General-Preliminary Grading:**

1. If the Clearing and Grubbing work of the Contract has not removed or has been found to not effectively have removed all of the soft organic type material from the subgrade areas within the construction areas or bays scheduled to receive concrete brick paver units, then the Contractor shall be required to remove it as part of this section of the specifications of the Contract.
2. During preliminary grading, if areas within the subgrade where concrete brick paver units are designated to be placed are found to contain unsuitable soils or non-performing soils, then after notifying the RCE in writing, the Contractor shall be required to excavate the unsuitable soils to a minimum depth of 24" and replace them with well graded A-1 (AASHTO M 145) soils. The placed fill material shall be compacted to between 92% and 95 % dry density per ASTM D1557.

##### **B. Fill:**

1. If fill material is required to bring the subgrade to final elevation, it shall be clean and free of deleterious materials consisting of well graded A-1 (AASHTO M 145) soils. The fill shall be placed in 6-inch maximum layers, and compacted by a mechanical vibratory compactor to 92 to 95% dry density per ASTM D 1557.
2. Each work area or bay shall be graded to lines and elevations of the Contract drawings/Plans and compacted as specified elsewhere herein. The prepared subgrade shall have a 0.0% nominal transverse cross slope unless otherwise specified on the Plans.
3. Upon the completion of the grading, the Contractor shall provide the RCE with a survey drawing of sufficient detail to indicate that the prepared elevations of the subgrade and concrete curb, concrete curb and gutter, concrete header curb or a turned-down concrete sidewalk are in compliance with the Plans.
4. The Contractor shall provide the RCE with a minimum of two dedicated compaction test results for each bay or area of work.

- a. Each compaction test result of the finished subgrade provided by the Contractor shall indicate that the subgrade has met the minimum standard for compaction but not exceeded the maximum acceptable standard for compaction.
- b. The required compaction tests shall be provided to the RCE prior to the installation of the nonwoven geotextile fabric for each area or bay where the Concrete Brick Paver units are to be installed.
- c. Upon the completion of the grading and the taking of the compaction tests, no trucks, equipment, rubber tired or tracked vehicles shall be permitted on the prepared subgrade.

### **3.02 Nonwoven Geotextile Fabric**

- A. The Contractor shall install the specified nonwoven geotextile fabric, if and where specified in the Plans. At a minimum, the specified nonwoven geotextile fabric shall be installed as follows:
  1. The nonwoven geotextile fabric shall be installed as a continuous application from a roll as manufactured and shipped.
  2. The nonwoven geotextile fabric shall be installed uniformly and evenly so that it covers all the prepared subgrade soils without excessive wrinkles or tears and is secured in place by an approved mechanical means.
  3. Where laps in the installed fabric occur, the laps shall be a minimum of a continuous 12" lapping of the fabric and the lapped fabric shall be secured in place by an approved mechanical means.
  4. Where concrete curb, concrete curb and gutter, concrete header curb or a turned-down concrete sidewalk are indicated on the Plans to be installed as an integral part of the concrete brick paver modulus, the nonwoven geotextile fabric shall be installed such that:
    - a. At all locations where concrete curb, concrete curb and gutter, concrete header curb or a turned-down concrete sidewalk are installed the geotextile fabric shall be installed so that it extends up the face of that entity after the placement of the aggregates for a height equivalent to the depth of the stone aggregates to be placed.

### **3.03 Stone Base/Hydraulic Reservoir**

- A. The # 57 Stone Base shall be placed in accordance with the line, grades, and dimensions shown on the Plans.
- B. The Stone Base shall be placed to a depth of 12" (compacted) or as otherwise specified on the Plans.
- C. The # 57 Stone Base shall be placed in 4" to 6" lifts with care being taken to not disturb or cause the nonwoven geotextile fabric to wrinkle, bunch-up, tear or otherwise be displaced.
- D. The stone base shall have a 0.0% nominal transverse cross slope unless otherwise specified on the Plans.
- E. Each lift of Stone Base shall be compacted in place by means of a minimum of two passes of a ten ton (10T) vibratory roller in the vibratory mode and then two additional passes of the 10 T. vibratory roller in the static mode until there is no visible movement of the base stone. Due care shall be taken to not crush the stone base aggregate with the roller.

### **3.04 Bedding Stone/Joint Filler**

#### **3.04.1 Bedding Stone**

- A. The #89M Bedding Stone shall be placed in accordance with the line, grades, and dimensions shown on the Plans.
- B. The #89M Bedding Stone tone Base shall be placed on top of the compacted Stone Base course to a depth of 2" or as otherwise specified on the Plans.

- C. The # 89M Bedding Stone shall be uniformly hand graded level to allow for the placement of the Concrete brick Paver units to Plan grades and elevations.

#### **3.04.1 Joint Filler**

- A. The #89M Stone to be installed as joint filler material between the Concrete Brick Paver units and between the concrete curb, concrete curb and gutter, concrete header curb, turned-down concrete sidewalk or approved steel edging shall be hand place flush with the top of the paver units.
- B. The placed joint filler stone shall be broom spread to provide uniform even coverage filling the joints or spaces between the concrete Brick Paver units and or adjacent physical entities.

#### **3.05 Concrete Brick Paver units**

- A. The Concrete Brick Paver units shall be hand placed in accordance with the line, grades, and dimensions shown on the Plans. The placement of pavers by means of a machine shall have to be approved by the RCE in writing in response to a written submittal provided during the submittal process.
- B. Where no concrete curb, concrete curb and gutter, concrete header curb, turned-down concrete sidewalk is specified on the Plans as a finished edge, then the Contractor shall install an approved steel edging in accordance with the line, grades, and dimensions shown on the Plans prior to the commencing the installation of the paver units.
- C. Where the pavers abut turned down sidewalk areas or concrete curbs, the turned down sidewalk or concrete curb shall have a vertical exposed face of 6" unless otherwise noted on the Plans. The finished grade of the installed Concrete Brick Paver units shall abut the curb face or the turned-down sidewalk such that the specified exposed face of the curb or sidewalk is sustained.
- D. Where the pavers abut a concrete header curb or steel edging, they shall be installed flush with the top of the header curb or steel edging.
- E. Placement of Concrete Brick Paver units:
  - 1. Units shall be such that they are installed in the pattern specified in the plans, which shall have been approved by the Owner as a result of an approved submittal or as directed by the RCE. Unless notified in writing prior to the commencement of the installation of the pavers, no additional or extra costs related the laydown pattern shall be permitted.
  - 2. Units shall be installed such that they are installed parallel to the straightest portion of the edge of the existing or proposed pavement or concrete header curb.
  - 3. Units shall be installed such that they are installed perpendicular to the straightest portion of the edge of the existing or proposed pavement, concrete curb, concrete curb and gutter or steel edging.
  - 4. The large gaps created between the placed concrete brick pavers at the edges of the work area or bay(s) shall be filled with saw cut portions of concrete pavers.
    - a. No saw cut paver piece to be used as a filler piece shall be thinner than  $\frac{3}{4}$ " or of full length, nor shall they be less than full depth thickness.
    - b. In order to protect the integrity of the concrete brick paver units as part of the drainage design system, the cutting operation for the paver pieces to be cut and used as filler pieces shall not be permitted on the adjacent road surface, adjacent sidewalk, pavers that have already been installed or anywhere that the dust or particulate matter can contaminate the concrete pavers.
    - c. The cutting operation shall be done on a drop cloth that is capable of collection and controlling all dust and particulate matter generated by the paver cutting. At the end of each work day or portion thereof, the Contractor shall collect and dispose of the dust or material

generated by the paver cutting operation at an off-site location in a manner consistent with all applicable laws, statutes and/or regulations

- i. All other remaining gaps between the placed concrete brick pavers at the edges of the work area or bay(s) shall be filled flush to the pavers with Joint Filler Stone.
- ii. After all concrete brick pavers and fill pavers have been placed, the contractor shall hand spread joint filler stone on the surface of the installed pavers and sweep it into the joints.
- iii. After the joint filler stone has been placed, the Contractor shall compact the stone into place with a vibratory walking compaction plate.
- iv. Upon completion of the installation of the concrete brick paver units, the Contractor shall cover them in their entirety with polypropylene sheeting until such time as all construction activity including landscaping is completed. All edges of the sheeting shall be firmly and securely held in place at adequate intervals to prevent its displacement.
- v. Should any portion of or all of the concrete brick paver areas or bays be contaminated by dirt, soils, sediments or other particulate matter, it shall be the responsibility of the Contractor to clean the paver areas/bays to restore the integrity of the drainage design to the satisfaction of the RCE.

#### **PART 4 MEASUREMENT**

##### **4.01 GENERAL**

- A. The quantity for the pay item Permeable Interlocking Concrete Brick Paver units is the surface area of the paved area that is constructed and is measured by the square yard (SY), complete in-place, and accepted.
- B. If a pay item Permeable Interlocking Concrete Brick Paver units is not included in the Contract, the Permeable Interlocking Concrete Brick Paver units work of the Plans, and all other incidental work associated with it, is not measured for payment directly and is considered included in contract unit bid price of the various other items of work of the Contract.

#### **PART 5 PAYMENT**

##### **5.01 GENERAL**

- A. Payment for the accepted quantity for Permeable Interlocking Concrete Brick Paver units, measured in accordance with Subsection 4.01 of these Specifications, is determined using the contract unit bid price for the pay item or as;
- B. Specified elsewhere in the contract documents.
- C. Payment is full compensation for Permeable Interlocking Concrete Brick Paver units as specified or directed and includes all materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract.

**END OF SECTION**

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