

Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN

# PROJECT MANUAL

FOR

STORMWATER SYSTEM IMPROVEMENTS  
HISTORIC DISTRICT

COG PROJECT # 4015

EDA AWARD NO. 04-79-07494

WKD#20210777.00.CH

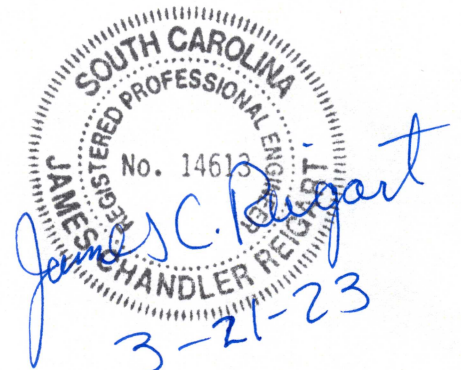
CITY OF GEORGETOWN

SOUTH CAROLINA

DATE OF ISSUE: 03/29/2023

REV	DATE	DESCRIPTION	BY	CHK	APR
0	03/29/23	Issued for Bid - Not for Construction			

CITY OF GEORGETOWN  
WATER UTILITIES DEPARTMENT  
2377 ANTHUAN MAYBANK DRIVE  
GEORGETOWN SC 29440  
(843) 545-4500





**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

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**(END OF SECTION)**



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**SECTION 00 01 00  
ENUMERATION OF THE DOCUMENTS**

The drawings, specifications and addenda, which form a part of this contract as set forth in Paragraph 1 of the General Conditions, Contract and Contract Documents are enumerated in Section 00 00 50 - Table of Contents.

The order of precedence when conflicts in the documents occur is as follows:

1. Permits from other Agencies as may be required by law
2. Change Orders and/or supplemental agreements according to the latest date
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The figured dimensions shown on the Drawings and in the Specifications may not, in every case agree with the scale dimension. Figured dimensions take precedence over scaled dimensions and finer scaled drawings take precedence of coarser scaled drawings, i.e. one inch equals twenty feet drawings takes precedence over one inch equals fifty feet drawings.

**(END OF SECTION)**





**Stormwater System Improvements – Historic District  
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**SECTION 00 01 50  
REFERENCES**

The following reference shall be used hereinafter:

<u>Owner:</u> City of Georgetown, SC PO Box 939 Georgetown, SC 29442	The City of Georgetown hereinafter will be referred to as the “Owner” and/or the “City”.
<u>City Administrator:</u> Mrs. Sandra Yudice, Ph.D. PO Box 939 Georgetown, SC 29442	Mrs. Sandra Yudice hereinafter will be referred to as the “City Administrator”.
<u>Risk Manager:</u> To Be Determined (TBD) PO Box 939 Georgetown, SC 29442	TBD hereinafter will be referred to as the “Risk Manager”
<u>Purchasing Agent:</u> Mrs. Daniella Howard 1134 North Fraser Street Georgetown, SC 29440	Mrs. Daniella Howard hereinafter will be referred to as the “Purchasing Agent”.
<u>Water Utilities Director:</u> Mr. Will Gunter Water Utilities Manager2377 Anthuan Maybank Drive Georgetown, SC 29440	Mr. Gunter hereinafter will be referred to as the “Water Utilities Director”.
<u>Project Manager</u> Mr. Orlando Arteaga, P.E. City Engineer 2377 Anthuan Maybank Drive Georgetown, SC 29440	Mr. Arteaga hereinafter will be referred to as the “Project Manager”.
<u>Engineer</u> Mr. James C. Reigart, P.E. W.K. Dickson & Co., Inc. 4105 Faber Place Drive, Ste. 410 North Charleston, SC 29405	W.K. Dickson & Co., Inc. will be referred to as the “Engineer”

**(END OF SECTION)**



**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

**00 02 00  
ADVERTISEMENT FOR BIDS**

The City of Georgetown requests sealed bids from qualified contractors for the following project:

**Stormwater System Improvements – Historic District**

**Project #4015 Request for Bid (RFB)**

The U.S. DEPARTMENT OF COMMERCE Economic Development Administration is providing partial funding for this project (EDA Investment No. 04-79-07494). Therefore, bidders must comply with all applicable State and Federal requirements identified in the contract documents. Recipients are hereby notified that they are encouraged, to the greatest extent practicable to purchase American-made equipment and products with funding provided under this award.

**FEDERAL PARTICIPATION DISCLOSURE**

**This project will be partially funded with Federal funds from the United States Department of Commerce, Economic Development Administration and therefore is subject to the Federal laws and regulations associated with that program. The Contractor and Subcontractors must agree to comply with EDA Contracting Provisions for Construction Projects in addition to all applicable federal, state, and local requirements.**

A non-mandatory Pre-Bid Conference will be held on **Wednesday, April 12, 2023, at 10:00 am (EST)** at the Georgetown Water Treatment Plant, 2355 Anthuan Maybank Drive, Georgetown, SC 29440, and will be followed by a site visit.

Bids will be opened and read aloud at **2:00 PM (EST), Wednesday, May 3, 2023.**

Bidder must make positive efforts to use women-owned or minority-owned businesses.

Bid documents including, but not limited to forms, specifications and milestone events, may be downloaded free of charge from the City website: [www.georgetownsc.gov](http://www.georgetownsc.gov). Select “Bids” from the bottom of the home page. You may also send an email request to [purchasing@georgetownsc.gov](mailto:purchasing@georgetownsc.gov) for a direct link.

Owner: City of Georgetown.

Any prospective bidder, offeror, contractor or subcontractor who is aggrieved in connection with the solicitation of this contract may protest to Engineer (or) Owner in accordance with Section 11-35-4210 of the SC Code of Laws, within 15 days of the date of issuance of the Notice of Intent to Award.

No bid will be considered unless the bidder is legally qualified under the provisions of the South Carolina Contractor's Licensing Law (South Carolina Code of Laws as amended on April 1, 1999, Chapter 11, Sections 40-11-10 through 40-11-428).

Contractors shall have a classification of:

**ADVERTISEMENT FOR BIDS**

**00 02 00-1**

**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

GENERAL CONTRACTOR- WATER & SEWER LINES (Focus on Storm Water)

GROUP #5 (unlimited dollar amount per contract) (WL5)

No bidder may withdraw the bid within 90 days after the actual date of the opening and thereof.

Bid documents will be modified only by written addenda. It is the responsibility of the Bidder to obtain information regarding projects directly from the City's website, [www.georgetownsc.gov](http://www.georgetownsc.gov), under "Bids". Bids received after the due date and specified time will not be considered for any reason and will remain unopened. The City will not accept bids by fax or electronic mail.

When the Procurement Division is closed due to force majeure, bid openings will be postponed to the same time on the next official business day.

**(END OF SECTION)**

**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

**00 10 00  
INFORMATION FOR BIDDERS**

1. PROJECT SUMMARY

The **Stormwater System Improvements – Historic District Project #4015** consists of constructing improvements to three existing drainage systems in the Historic District of downtown Georgetown. Namely, 1) the Front Street system in the vicinity of Constitution Park and Orange Street including a new bulkhead along the Sampit River, 2) the Orange Street system generally from above Duke Street, beneath Church Street and discharging adjacent to Nimmer Street, and 3) the Queen Street system between Highmarket and Prince Streets are all being improved. The project is more generally described in the complete Bid Documents.

**FEDERAL PARTICIPATION DISCLOSURE**

**This project will be partially funded with Federal funds from the United States Department of Commerce, Economic Development Administration and therefore is subject to the Federal laws and regulations associated with that program. The Contractor and Subcontractors must agree to comply with EDA Contracting Provisions for Construction Projects in addition to all applicable federal, state, and local requirements.**

2. RECEIPT AND OPENING OF BIDS

The City of Georgetown (hereinafter called the “Owner”) invites bids on the form(s) attached hereto, all blanks of which must be appropriately filled in.

Bids **MUST BE** submitted electronically through the City of Georgetown’s website, [www.georgetownsc.gov](http://www.georgetownsc.gov), under “Bids”. As always, bids received after the due date and time will not be considered for any reason.

The City **WILL NOT** accept bids by:

Hard copy  
Fax  
Email

Your bid must be submitted electronically to ensure it remains sealed until the scheduled bid opening date and time.

Bid Security in the amount of 5% - Bid security shall be a legitimate bid bond provided by a surety company authorized to do business in South Carolina, or the equivalent in, certified check, cashiers’ check, or money order.” A digital copy of the Bid Security

**Stormwater System Improvements – Historic District  
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must be submitted along with the electronic bid. **The hard copy bid bond or check must be received by the purchasing agent within three (3) working days of the solicitation deadline. Mail or hand deliver only to:**

City of Georgetown  
Attn. Purchasing Agent  
1134 N. Fraser Street  
Georgetown, SC 29440

Bid openings will be streamed live via the City’s public Facebook page, <https://www.facebook.com/cityofgtown/>.

To be considered responsive, interested parties **must** comply with the following:

1. Submit bid proposal electronically through the City website, [www.georgetownsc.gov](http://www.georgetownsc.gov), under “Bids”. Submittal package must include these items:
  1. Bid Form – See Section 00 31 10
  2. Bid Bond – See Section 00 35 00
  4. Certification of Site Visit – See Section 00 10 00
2. Electronic bid proposal must be received electronically through the City’s website, [www.georgetownsc.gov](http://www.georgetownsc.gov), no later than the aforementioned deadline. Bids will be publicly opened and read aloud via the City’s public Facebook page, <https://www.facebook.com/cityofgtown/>. No bid will be accepted after such time.

Bid Security in the amount of 5% - Bid security shall be a legitimate bid bond provided by a surety company authorized to do business in South Carolina, or the equivalent in, certified check, cashiers’ check, or money order.” A digital copy of the Bid Security must be submitted along with the electronic bid. **The hard copy bid bond or check must be received by the purchasing agent within three (3) working days of the solicitation deadline. Mail or hand deliver only to:**

City of Georgetown  
Attn. Purchasing Agent  
1134 N. Fraser Street  
Georgetown, SC 29440

It is the sole responsibility of the bidder to have their quotes delivered to the City before the closing hour and date. The City assumes no responsibility for delivery of bids. The City assumes no responsibility for technological failure in submitting quotes

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electronically. It is the sole responsibility of the bidder to consider that their quote was submitted on time, and that their PDF file/files are not corrupt.

Late bids will not be accepted nor considered. The official clock shall be that of the City's Purchasing Agent, or designee.

The City reserves the right to accept or reject any or all bids and to waive any informalities and technicalities in the bid process. No additional fees, costs, or any other reimbursable expenses will be allowed.

The City reserves the right to waive any technicalities or informalities and to accept or reject any and/or all submissions as deemed by its sole judgment to be in its best interest. The City also reserves the right to terminate the selection process without notice, to waive any irregularities in any submittal, and to request additional information from any of the bidders submitting a bid.

The Owner may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. Bid price shall be firm for a period of ninety (90) days

3. PREPARATION OF BID

Each bid must be submitted on the prescribed form. All blank spaces for bid prices must be filled in with ink or typewritten.

Bids that are incomplete, unbalanced, conditional or obscure, or which contain additions not called for, erasures, alterations, or irregularities of any kind, or which do not comply with the Information for Bidders, may be rejected at the option of the Owner.

The correct total amount bid for the completed work is defined as the correct sum total of the amounts bid for the individual items in the proposal. The correct amount bid for each unit price item is defined as the correct product of the quantity listed for the item by the unit price bid.

4. SUBCONTRACTS

The bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this contract must be acceptable to the Owner.

5. QUALIFICATION OF BIDDER AND ITS SUBCONTRACTORS

The Owner may make such investigations as is deemed necessary to determine the ability of the bidder and proposed subcontractors to perform the work, and the bidder

**Stormwater System Improvements – Historic District  
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shall furnish to the Owner all such information and data for this purpose as the Owner may request.

The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be acceptable.

6. BID SECURITY

Each bid must be accompanied by cash, certified check of the bidder, or a bid bond prepared on the form of bid bond attached hereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner, in the amount of five percent (5%) of the bid. Cash or checks will be returned to all except the three (3) lowest bidders within three (3) days after the opening of bids, and the remaining cash or checks will be returned promptly after the Owner and the accepted bidder have executed the contract, or, if no award has been made within ninety (90) days after the date of the opening of the bids, upon demand of the bidder at any time thereafter so long as bidder has not been notified of the acceptance of its bid.

7. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

The successful bidder, upon failure or refusal to execute and deliver the contract and bonds required within ten (10) days after they have received notice of the acceptance of their bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with the bid.

8. TIME OF COMPLETION AND LIQUIDATED DAMAGES

Bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the project within the number of consecutive calendar days thereafter as indicated on the Bid Form. Bidder must agree also to pay as liquidated damages the sum indicated on the Bid Form for each consecutive calendar day thereafter as hereinafter provided in General Conditions.

9. CONDITIONS OF WORK

Each bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of the obligation to furnish all material and labor necessary to carry out the provisions of the contract.

Insofar as possible, the Contractor in carrying out the work must employ such methods and means as will not cause any interruption of, or interference with, the work of any other contractor.

10. ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the plans, specifications, or other pre-bid



**Stormwater System Improvements – Historic District  
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documents will be made to any bidder orally. Each request for such interpretation should be in writing and addressed to the Project Manager. To be given consideration, the request must be received at least five (5) days prior to the date fixed for the opening of bids.

Any and all such interpretations and any supplemental instructions will be in the form of written addenda which, if issued, will be posted in the Project listing that is located at the City of Georgetown website <http://www.georgetownsc.gov> no later than three (3) days prior to the date fixed for the opening of bids. It shall be the bidder's responsibility to check for addenda before issuing its bid. Failure of any bidder to receive any addendum shall not relieve the bidder from any obligation under its bid as submitted. All addenda so issued shall become part of the contract documents.

11. BID, PAYMENT AND PERFORMANCE BONDS

When a construction contract is awarded in excess of One Hundred Thousand Dollars (\$100,000) a payment and performance bond shall be delivered by the successful bidder to the City and shall become binding on the parties upon execution of the contract.

Simultaneously with bidder's delivery of the executed contract, the Contractor shall furnish a surety bond or bonds as secured for the faithful performance of this contract and for the payment of all persons performing labor on the project under this contract, as specified in General Conditions included herein. The surety on such bond or bonds shall be a duly authorized surety company. An agent must be provided with a South Carolina license authorized to sign and execute the bond(s). Countersignature by an agent residing in South Carolina will not be required, but execution by an agent holding a South Carolina non-resident license is required. The Bid Bond shall be an amount equal to or at least five percent (5%) of the amount of the bid. The Performance Bond shall be in the amount of one-hundred percent (100%) of the bid and the Payment Bond shall be in the amount of one-hundred percent (100%) of the bid.

12. POWER OF ATTORNEY

Attorneys-in-fact who sign bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

13. NOTICE OF SPECIAL CONDITIONS

Attention is particularly called to those parts of the contract documents and specifications which deal with the following:

- A. Inspection and testing of materials
- B. Insurance requirements
- C. Stated allowances
- D. Permits and Rights-of-way
- E. Hazardous Gas Safety (Section 01 06 00)

**Stormwater System Improvements – Historic District  
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14. LAWS AND REGULATIONS

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 out in full.

15. METHOD OF AWARD - LOWEST QUALIFIED BIDDER

If at the time this contract is to be awarded, the lowest base bid or alternate bid submitted by a responsible bidder does not exceed the amount of funds then estimated by the Owner as available to finance the contract, the contract will be awarded on the base bid or alternate bid. If such bid exceeds such amount, the Owner may reject all bids or may award the contract on the base bid combined with such deductible alternates applied in numerical order in which they are listed in the Form of Bid, as produces a net amount which is within the available funds.

The Owner will decide which the lowest qualified bidder is, and in determining such bidder, the following elements will be considered for each bidder:

- Maintains a permanent place of business and registered with the SC Secretary of State.
- Licensed as a general contractor by the South Carolina Contractor's Licensing Board.
- Has adequate plant equipment and personnel to perform the Work properly and expeditiously.
- Has a suitable financial status to meet obligations incident to the work.
- Has appropriate technical experience with a minimum of five (5) years of practice.

16. RIGHT TO INCREASE OR DECREASE THE AMOUNT OF WORK

The work comprises approximately the quantities shown in the bid form which will be used as a basis for comparison of Bids and not for final estimate. The Owner does not, by expression or by implication, agree that the actual amount of work shall correspond with the estimated quantities. The Owner reserves the right to increase or decrease the amount of work under the Contract of the work contemplated, at the unit prices quoted in the Bid.

17. OBLIGATION OF BIDDER

At the time of the opening of bids, each bidder will be presumed to have inspected the site and to have read and been thoroughly familiar with the plans and contract documents, including all addenda. If a site visit is required, contact the Project Manager to schedule a date and time. The failure or omission of any bidder to examine any form, instrument, or document shall in no way relieve any bidder from any obligation with respect to its bid.

**Stormwater System Improvements – Historic District  
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**SECTION 00 11 00  
CONTRACTOR'S AND SUBCONTRACTOR'S  
INSURANCE REQUIREMENTS**

1. As required under Paragraph 29 of the General Conditions, 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 approved by the Owner, nor shall the Contractor allow any Subcontractor to commence work on his Subcontract until all similar insurance required of the Subcontractor has been so obtained and approved.
2. Unless otherwise specified in this Contract, the Contractor shall, at its sole expense, maintain in effect at all times, during the performance of work, insurance coverage with limits not less than those set forth below with insurers and under forms of policies satisfactory to Owner.
3. The Contractor shall deliver Certificates of Insurance to the Engineer no later than ten (10) days after award of the Contract but in any event, prior to execution of the Contract by the Owner and prior to commencing work on the site as evidence that policies providing such coverage and limits of insurance are in full force and effect.
  - A. Certificates shall provide not less than thirty (30) days advance notice will be given in writing to the Owner prior to cancellation, termination, or material alteration of said policies of insurance.
  - B. Certificates shall identify on their faces the project name "**STORMWATER SYSTEM IMPROVEMENST- HISTORIC DISTRICT**" and the "**PROJECT NUMBER 4015**".
4. Additional Insured: The Commercial General Liability, Auto Liability, and Excess Liability (Umbrella) insurance policies shall be endorsed to include the Owner as an additional insured.
5. The Owner is not maintaining any insurance on behalf of the Contractor covering against loss or damage to the work or to any other property of the Contractor unless otherwise specifically stated herein and as may be described by appendix hereto. In the event the Contractor maintains insurance against physical loss or damage to the Contractor's construction equipment and tools, such insurance shall include an insurer's waiver of rights of subrogation in favor of the Owner.
6. The Contractor shall indemnify the Owner and the Engineer, as stated in Part 47 of The General Conditions.

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7. Insurance Requirements:

Contractor shall provide coverage for not less than the following amounts, or greater where required by Laws and Regulations:

*a. Workers' Compensation and Employer's Liability*

Workers' Compensation	Statutory
Employer's Liability	
Each Accident	\$ 500,000.00
Each Employee	\$ 500,000.00
Policy Limit	\$ 500,000.00

*b. Commercial General Liability*

General Aggregate	\$ 2,000,000.00
Products - Completed Operations Aggregate	\$ 2,000,000.00
Personal and Advertising Injury	\$ 1,000,000.00
Bodily Injury and Property Damage—Each Occurrence	\$ 1,000,000.00

*c. Automobile Liability*

Combined Single Limit (Bodily Injury and Property Damage)	\$ 1,000,000.00
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*d. Excess or Umbrella Liability*

Per Occurrence	\$ 2,000,000.00
General Aggregate	\$ 2,000,000.00

*e. Builder's Risk Insurance*

Estimated cost of the project	\$4,235,000.00
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**(END OF SECTION)**

**SECTION 00 31 10  
BID FORM**

**STORMWATER SYSTEM IMPROVEMENTS – HISTORIC DISTRICT**

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

Project            COG# 4015  
No.:                WKD#20210777.00.CH

**PROPOSAL OF** \_\_\_\_\_, doing business as a corporation / a partnership / an individual (Strike out inapplicable terms), with its principal office in the City of \_\_\_\_\_, County of \_\_\_\_\_, State of \_\_\_\_\_, (hereinafter called "Bidder").

TO:    City of Georgetown, SC

Gentlemen:

The Bidder, in compliance with your invitation for bids for the **Stormwater System Improvements – Historic District**, 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 labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the project in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part.

The bidder hereby agrees to commence work under this contract on or before a date to be specified in written "Notice to Proceed" of the Owner and to fully complete the project within **560 consecutive calendar days** thereafter as stipulated in the specifications. Bidder further agrees to pay as liquidated damages the sum of **\$1,000 for each consecutive calendar day** thereafter as hereinafter provided in Paragraph 19 of the General Conditions.

The plans, specifications, and addenda are complementary of each other. What is called for by one shall be as binding as if called for by all. If a conflict between any of the above is discovered by the contractor, the problem shall be referred to the Engineer as soon as possible for resolution by the Engineer. Should a conflict occur which is not resolved before bid time and/or is necessary to comply with mandatory requirements (i.e., codes, ordinances, etc.), it shall be the contractor's responsibility to price and bid the more expensive method.

Bidder acknowledges receipt of the following addendum:

No: \_\_\_\_\_ Dated: \_\_\_\_\_

No: \_\_\_\_\_ Dated: \_\_\_\_\_

No: \_\_\_\_\_ Dated: \_\_\_\_\_



Bidder agrees to perform the work as described in the specifications and shown on the plans for the following unit or lumps sum (LS) prices:

No.	Description	Qty.	Unit	Unit Price	Extended Price
<b>Division I – Front Street System</b>					
1.	Mobilization (Maximum 3% of Total for Division I)	1	LS		
2.	Traffic Control	1	LS		
3.	Sediment and Erosion Control				
	a. Silt Fence	300	LF		
	b. Temporary Construction Entrance	1	EA		
	c. Fiber Roll	100	LF		
	d. Inlet Protection	23	EA		
	e. Grassing (Sod, and Hydroseed)				
	i. Sod	590	SY		
	ii. Hydroseed	280	SY		
4.	New Bulkhead (200 LF +/-) – Install and Backfill (Sheets S-001 – S-701)	1	LS		
5.	Constitution Park Walkway (Sheets S1.01 thru S2.01, S3.01)	1	LS		
6.	Constitution Park – Guardian Retention System Wall (Sheet S2.02)	1	LS		
7.	Place and Compact Select Borrow Material – Constitution Park	760	CY		
8.	Remove and Replace Concrete Sidewalk	310	SY		
9.	Remove and Replace 6” Concrete Curb	305	LF		
10.	Remove and Replace 4” Brick Curb	205	LF		
11.	Remove and Replace Brick Pavement	180	SY		
12.	Remove Existing Drainage Structure				
	a. Catch Basin	8	EA		
	b. Drop Inlet	7	EA		
13.	Remove Existing Drainage Pipe				
	a. 12” Pipe (Clay, HDPE)	180	LF		
	b. 15” Pipe (RCP)	10	LF		
	c. 18” Pipe (Clay, RCP, CPP)	450	LF		
	d. 24” Pipe (RCP)	540	LF		
	e. 30” Pipe (CPP)	20	LF		

No.	Description	Qty.	Unit	Unit Price	Extended Price
	<b>Division I – Front Street System</b>				
14.	Flowable Fill in Abandoned Storm Drains				
	a. 12" Pipe	70	LF		
	b. 18" Pipe	60	LF		
15.	2" Asphalt Resurface (Mill & Overlay)	2,380	SY		
16.	New 1½" Asphalt Pavement	575	SY		
17.	New Concrete Curb and Gutter (18")	167	LF		
18.	SCDOT Pavement Markings	1	LS		
19.	15" RCP Class IV (0' – 6' Deep)	220	LF		
20.	18" RCP Class IV (0' – 6' Deep)	136	LF		
21.	30" RCP Class IV (0' – 6' Deep)	362	LF		
22.	36" HDPE (6' – 8' Deep)	50	LF		
23.	30x19 Elliptical RCP Class IV (0' – 6' Deep)	276	LF		
24.	38x24 Elliptical RCP Class IV (0' – 6' Deep)	160	LF		
25.	45x29 Elliptical RCP Class IV (0 – 6' Deep)	90	LF		
26.	45x29 Elliptical RCP Class IV (6' – 8' Deep)	200	LF		
27.	18" Tide Gate / Flex Valve	1	EA		
28.	36" Tide Gate / Flex Valve	2	EA		
29.	Concrete Collar 18" RCP	2	EA		
30.	Concrete Collar 36" RCP	2	EA		
31.	2'x3' Catch Basin (SCDOT Type 1 - 0 – 6' Deep)	1	EA		
32.	3'x3' Catch Basin (SCDOT Type 1 - 0 – 6' Deep)	11	EA		
33.	4'x9' Junction Box (0 – 6' Deep)	2	EA		
34.	4'x9' Catch Basin / Junction Box (0 – 6' Deep)	1	EA		
35.	4'x11' Catch Basin / Junction Box (0 – 6' Deep)	1	EA		
36.	4'x11' Junction Box (0 – 6' Deep)	1	EA		
37.	9'x11' Junction Box (0 – 6' Deep)	1	EA		
38.	11'x12' Catch Basin / Junction Box (6' – 8' Deep)	1	EA		
39.	Utility Relocations (Water)				
	a. Relocate 17 LF 10" DIP Water Line at Sta. 2+14 Line A (w/valves)	1	LS		
	b. Relocate 32 LF 8" DIP Water Line at Sta. 4+04 Line A (w/valves)	1	LS		



No.	Description	Qty.	Unit	Unit Price	Extended Price
	<b>Division I – Front Street System</b>				
	c. Relocate 18 LF 8” DIP Water Line at Sta. 3+56 Line A (w/valves)	1	LS		
	d. Relocate 18 LF 10” DIP Water Line at Sta. 4+8 (w/valves)	1	LS		
40.	Utility Relocations (Sanitary Sewer)				
	a. Relocate 20 LF 4” DIP Sanitary Sewer Service at Sta. 1+16 Line A	1	LS		
41.	Utility Relocations (Electric, Communications, Gas) - Allowances				
	a. Unknown - Fiber Optic Cable	1	ALLOWANCE		\$25,000.00
	b. Dominion Energy – Gas Relocations	1	ALLOWANCE		\$25,000.00
	c. HTC	1	ALLOWANCE		\$47,500.00
42.	Compaction and Materials Testing Allowance (Section 01 40 00)	1	ALLOWANCE		\$10,000.00
<b>TOTAL DIVISION I</b>					<b>\$</b>



No.	Description	Qty.	Unit	Unit Price	Extended Price
	<b>Division II – Orange Street System</b>				
1.	Mobilization (Maximum 3% of Total for Division II)	1	LS		
2.	Traffic Control	1	LS		
3.	Sediment and Erosion Control				
	a. Silt Fence	920	LF		
	b. Temporary Construction Entrance	1	EA		
	c. Fiber Roll	100	LF		
	d. Inlet Protection	40	EA		
	e. Grassing (Hydroseed)	1980	SY		
4.	Remove and Replace Existing Wooden Fence	280	LF		
5.	Remove Existing Chain Link Fence	420	LF		
6.	Remove Existing Drainage Structure				
	a. Catch Basin	14	EA		
	b. Drop Inlet	4	EA		
7.	Remove Existing Drainage Pipe				
	a. 12” Pipe (RCP)	85	LF		
	b. 15” Pipe (RCP)	190	LF		
	c. 18” Pipe (RCP)	460	LF		
8.	Place and Compact Select Borrow Material – Bethel Methodist Detention Pond	340	CY		
9.	Flowable Fill in Abandoned Storm Drains				
	a. 12” Pipe	90	LF		
	b. 15” Pipe	430	LF		
	c. 18” Pipe	260	LF		
	d. 24” Pipe	190	LF		
	e. 30” Pipe	100	LF		
	f. Existing Drainage Structure – Near STA 7+68 Line A	5	CY		
10.	2” Asphalt Resurface (Mill and Overlay)	4,110	SY		
11.	Remove and Replace Concrete Sidewalk	160	SY		
12.	Remove and Replace 18” Concrete Curb and Gutter	710	LF		
13.	Remove and Replace 6” Concrete Curb	60	LF		
14.	Remove and Replace Concrete Driveway	150	SY		
15.	Remove and Replace ADA Ramp	4	EA		

No.	Description	Qty.	Unit	Unit Price	Extended Price
<b>Division II – Orange Street System</b>					
16.	SCDOT Pavement Markings	1	LS		
17.	15" RCP Class IV (0' – 6' Deep)	663	LF		
18.	18" RCP Class IV (6' – 8' Deep)	21	LF		
19.	24" RCP Class IV (0' – 6' Deep)	25	LF		
20.	24" RCP Class IV (6' – 8' Deep)	46	LF		
21.	23"x14" Elliptical RCP Class IV (0' – 6' Deep)	180	LF		
22.	30"x19" Elliptical RCP Class IV (0' – 6' Deep)	406	LF		
23.	30"x19" Elliptical RCP Class IV (6' – 8' Deep)	329	LF		
24.	38"x24" Elliptical RCP Class IV (6' – 8' Deep)	178	LF		
25.	53"x34" Elliptical RCP Class IV (0' – 6' Deep)	289	LF		
26.	53"x34" Elliptical RCP Class IV (6' – 8' Deep)	184	LF		
27.	53"x34" Elliptical RCP Class IV (8' – 10' Deep)	135	LF		
28.	60"x38" Elliptical RCP Class IV (0' – 6' Deep)	174	LF		
29.	60"x38" Elliptical RCP Class IV (6' – 8' Deep)	83	LF		
30.	60"x38" Elliptical RCP Class IV (8' – 10' Deep)	161	LF		
31.	Concrete Collar (24")	1	EA		
32.	3'x3' Catch Basin (SCDOT Type 1)	7	EA		
33.	4' Inside Diameter Manhole w/ Drop Inlet (6' – 8' Deep)	1	EA		
34.	4' Inside Diameter Manhole w/manhole Frame and Cover (6' – 8' Deep)	1	EA		
35.	4'x6' Catch Basin	2	EA		
36.	4'x7' Catch Basin/Junction Box (0' – 6' Deep)	5	EA		
37.	4'x7' Catch Basin/Junction Box (6' – 8' Deep)	1	EA		
38.	4'x8' Catch Basin	3	EA		
39.	4'x10' Catch Basin/Junction Box (6' – 8' Deep)	2	EA		
40.	6'x6' Catch Basin/Junction Box	3	EA		
41.	7'x7' Catch Basin/Junction Box (0' – 6' Deep)	1	EA		
42.	7'x7' Catch Basin/Junction Box (6' – 8' Deep)	1	EA		
43.	8'x8' Junction Box (8' – 10' Deep)	1	EA		
44.	8'x10' Junction Box (8' – 10' Deep)	1	EA		
45.	9'x9' Junction Box (0' – 6' Deep)	1	EA		
46.	9'x9' Junction Box (6' – 8' Deep)	1	EA		

No.	Description	Qty.	Unit	Unit Price	Extended Price
<b>Division II – Orange Street System</b>					
47.	Headwall for 60" x 38" HERCP	1	EA		
48.	Headwall for 15" RCP	1	EA		
49.	Utility Relocation (Water)				
	a. Relocate 48 LF 2" PVC Water Line at Sta. 3+18 Line A (w/valves)	1	LS		
	b. Relocate 53 LF 2" PVC Water Line at Sta. 4+64 Line A (w/valves)	1	LS		
	c. Relocate 21 LF 2" PVC Water Line at Sta. 13+26 Line A (w/valves)	1	LS		
	d. Relocate 20 LF 6" DIP Water Line at Sta. 4+32 Line A (w/valves)	1	LS		
	e. Relocate 22 LF 6" DIP Water Line at Sta. 6+48 Line A (w/valves)	1	LS		
	f. Relocate 15 LF 6" DIP Water Line at Sta. 11+32 Line A (w/valves)	1	LS		
	g. Relocate 20 LF 6" DIP Water Line at Sta. 2+45 Line C (w/valves)	1	LS		
	h. Relocate 15 LF 12" DIP Water Line at Sta. 11+56 Line A (w/valves)	1	LS		
	i. Relocate 20 LF 12" DIP Water Line at Sta. 2+69 Line C (w/valves)	1	LS		
	j. Relocate 140 LF 2" PVC Water Line at Sta. 4+13 Line A (w/valves)	1	LS		
	k. Relocate 19 LF 2" PVC Water Line at Sta. 8+51 Line A (w/valves)	1	LS		
	l. Relocate 11 LF 2" PVC Water Line at Sta. 9+15 Line A (w/valves)	1	LS		
	m. Relocate 11 LF 2" PVC Water Line at Sta. 9+67 Line A (w/valves)	1	LS		
	n. Relocate 11 LF 2" PVC Water Line at Sta. 9+98 Line A (w/valves)	1	LS		
	o. Relocate 48 LF 6" DIP Water Line at Sta. 0+14 Line A1 (w/valves)	1	LS		
50.	Utility Relocations (Electric, Communications, Gas) - Allowances				
	a. Dominion Energy – Gas Relocations	1	ALLOWANCE		\$115,000.00
	b. Unknown – Fiber Optic Cable in Church Street	1	ALLOWANCE		\$25,000.00
51.	Compaction and Materials Testing – Section 01 40 00 (Allowance)	1	ALLOWANCE		\$10,000.00
<b>TOTAL DIVISION II</b>					<b>\$</b>

No.	Description	Qty.	Unit	Unit Price	Extended Price
<b>Division III – Queen Street System</b>					
1.	Mobilization (Maximum 3% of Total for Division III)	1	LS		
2.	Traffic Control	1	LS		
3.	Sediment and Erosion Control				
	a. Fiber Roll	110	LF		
	b. Inlet Protection	16	EA		
4.	Remove and Replace 18" Concrete Curb and Gutter	150	LF		
5.	Remove Existing Drainage Structures				
	a. Catch Basin	8	EA		
	b. Drop Inlet	3	EA		
6.	Flowable Fill in Abandoned Storm Drains				
	a. 12" Pipe	90	LF		
	b. 18" Pipe	30	LF		
7.	Remove Existing Drainage Pipe				
	a. 12" Pipe	50	LF		
	b. 15" Pipe	100	LF		
	c. 18" Pipe	50	LF		
8.	2" Asphalt Resurface ( Mill and Overlay)	2,450	SY		
9.	Remove and Replace Concrete Sidewalk	40	SY		
10.	Remove and Replace ADA Ramp	4	EA		
11.	SCDOT Pavement Markings	1	LS		
12.	15" RCP Class IV	124	LF		
13.	30" RCP Class IV	540	LF		
14.	23x14 Elliptical RCP Class IV	160	LF		
15.	4' Inner Diameter Manhole with Catch Basin	10	EA		
16.	4' Inner Diameter Manhole with Drop Inlet	1	EA		
17.	4' Inner Diameter Manhole (SCDOT 719-505-01)	1	EA		
18.	5' Inner Diameter Manhole (SCDOT 719-505-01)	4	EA		
19.	Utility Relocation (Water)				
	a. Relocate 21 LF 6" DIP Water Line at Sta. 6+01 Line A (w/valves)	1	LS		
	b. Relocate 29 LF 6" DIP Water Line at Sta. 5+54 Line A (w/valves)	1	LS		

No.	Description	Qty.	Unit	Unit Price	Extended Price
<b>Division III – Queen Street System</b>					
	c. Relocate 20 LF 6” DIP Water Line at Sta. 4+00 Line A (w/valves)	1	LS		
	d. Relocate 20 LF 6” DIP Water Line at Sta. 2+76 Line A (w/valves)	1	LS		
	e. Relocate 19 LF 6” DIP Water Line at Sta. 2+19 Line A (w/valves)	1	LS		
	f. Relocate 19 LF 6” DIP Water Line at Sta. 1+18 Line A (w/valves)	1	LS		
	g. Relocate 19 LF 6” DIP Water Line at Sta. 0+25 Line A (w/valves)	1	LS		
	h. Relocate 26 LF 6” DIP Water Line at Sta. 0+06 Line A1R (w/valves)	1	LS		
	i. Relocate 20 LF 6” DIP Water Line at Sta. 0+18 Line A1L (w/valves)	1	LS		
	j. Relocate 28 LF 6” DIP Water Line at Sta. 0+17 Line A2L (w/valves)	1	LS		
	k. Relocate 28 LF 6” DIP Water Line at Sta. 0+06 Line A2R (w/valves)	1	LS		
	l. Relocate 28 LF 6” DIP Water Line at Sta. 0+14 Line A3L (w/valves)	1	LS		
	m. Relocate 28 LF 6” DIP Water Line at Sta. 0+06 Line A3R (w/valves)	1	LS		
	n. Relocate 25 LF 6” DIP Water Line at Sta. 0+41 Line A4 (w/valves)	1	LS		
	o. Relocate 29 LF 6” DIP Water Line at Sta. 0+05 Line A4 (w/valves)	1	LS		
20.	Utility Relocations (Electric, Communications, Gas) - Allowances				
	a. Dominion Energy – Gas Relocations	1	ALLOWANCE		\$60,000.00
	b. Unknown – Fiber Optic Cables	1	ALLOWANCE		\$25,000.00
	c. Frontier	1	ALLOWANCE		\$3,500.00
21.	Compaction and Materials Testing – Section 01 40 00 (Allowance)	1	ALLOWANCE		\$10,000.00
<b>TOTAL DIVISION III AMOUNT</b>					<b>\$</b>

Amounts shall be shown in both words and figures. In case of discrepancy, the amount in words shall govern.

**TOTAL BASE BID TO INCLUDE DIVISIONS I, II, AND III INCLUSIVE:**

\_\_\_\_\_ Dollars

(\$ \_\_\_\_\_ )

The lump sum price indicated above shall include all labor, materials, equipment, overhead, profit, insurance, taxes, business license, construction permit fees, etc., to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part of.

The Bidder declares that he/she understands that the quantities shown in the Proposal are subject to adjustment by either increase or decrease and that should the quantities of any of the items of the work be increased, the undersigned proposed 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 the work, at which time adjustment will be made to the contract amount by direct increase or decrease.

Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 90 calendar days after the scheduled closing time for receiving bids.

Upon receipt of written notice of the acceptance of this bid, Bidder will execute the formal contract attached within 10 days and deliver a Surety Bond or Bonds as required by Paragraph 30 of the General Conditions. The bid security attached in the sum of

\_\_\_\_\_ Dollars

(\$ \_\_\_\_\_) is to become the property of the Owner in the event the contract and bond are not executed within the time above set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

By submission of this bid, each bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, that this bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this bid, with any other bidder or with any competitor.

SEAL – (If bid is by a corporation)

Respectfully submitted:

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

\_\_\_\_\_  
(Print Name)

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

\_\_\_\_\_  
(Business Address)

\_\_\_\_\_  
(Email)

\_\_\_\_\_  
(Telephone)



**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

**SECTION 00 35 00  
BID BOND**

**KNOW ALL MEN BY THESE PRESENT:**

That we, the undersigned \_\_\_\_\_, as Principal, and \_\_\_\_\_, as Surety, are hereby held and firmly bound unto the City of Georgetown, South Carolina, as Owner, in the penal sum of (5% of total bid) \_\_\_\_\_ Dollars

(\$ \_\_\_\_\_), for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

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

The condition of the above obligation is such that:

**WHEREAS**, the Principal has submitted to \_\_\_\_\_ a certain Bid, attached hereby and by reference made a part hereof, to enter into a contract in writing for the **STORMWATER SYSTEM IMPROVEMENTS – HISTORIC DISTRICT** project #4015.

**NOW, THEREFORE,**

- (A) If said Bid shall be rejected, or
- (B) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a Bond for faithful performance of said contract, and for the payment of all persons performing labor furnishing materials 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 an extension of the time within which the Owner may accept such Bid, and said Surety does hereby waive notice of any such extension.

**IN WITNESS WHEREOF**, the Principal and 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.

**Stormwater System Improvements – Historic District  
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\_\_\_\_\_  
Principal

(Corporate Seal)

By : \_\_\_\_\_ ( L.S)

\_\_\_\_\_  
Surety

(Corporate Seal)

By : \_\_\_\_\_ ( L.S)

Important: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

**(END OF SECTION)**

**Stormwater System Improvements – Historic District  
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**SECTION 00 50 00  
CONTRACT**

**STATE OF SOUTH CAROLINA**

**COUNTY OF GEORGETOWN**

**THIS AGREEMENT**, entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ and effective immediately by and between \_\_\_\_\_, doing business as a (individual/partnership/corporation), with its principal office in the City of \_\_\_\_\_, \_\_\_\_\_ County, \_\_\_\_\_ State,(hereinafter called the "Contractor") and the City of Georgetown, a duly organized and validly existing politic body of the State of South Carolina (hereinafter called "City"),

**WITNESSETH THAT WHEREAS**, The City desires to engage the services of a professional contractor for the purpose of, **STORMWATER SYSTEM IMPROVEMENTS – HISTORIC DISTRICT (#4015)** hereinafter referred to as "Project"; and,

**WHEREAS**, The City has solicited bids for same by that certain Request for Bids for Construction Services, hereinafter referred to as "RFB", a copy of which is attached hereto for all purposes as **EXHIBIT “1”**; and,

**WHEREAS**, The Contractor has represented to City that it has the qualifications, experience, expertise, training, and personnel to timely perform the Project for City; and,

**WHEREAS**, The Contractor has expressed its desire to do so by their bid opened \_\_\_\_\_, 2021, hereinafter referred to as "Bid", a copy of which is attached hereto for all purposes as **EXHIBIT “2”**;and,

**WHEREAS**, the parties desire to enter in an agreement for the Contractor to perform the Project for City per all the terms and conditions more particularly set out herein below;

**NOW, THEREFORE**, for and in consideration of the foregoing, and of other good and valuable consideration, the adequacy of which is hereby acknowledged, the parties hereto agree as follows:

CONTRACT  
00 50 00-1

**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

(1) **SCOPE OF SERVICES:**

- a. Contractor hereby agrees to perform a project for the **STROMWATER SYSTEM IMPROVEMENTS – HISTORIC DISTRICT (#4015)** as outlined in the Project Manual, incorporated into this Agreement as **ATTACHMENT “A”** and hereinafter referred to as "Work";
- b. Contractor further agrees to commence and complete any and all extra work in connection therewith, under the terms as stated in the General and Special Conditions of the Contract; and at his/hers (it's or their) own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendents, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal and the General Conditions, Supplemental General Conditions, and Special Provisions of the Contract, the plans, including all maps, plats, blueprints, and other drawings and printed or written explanatory matters thereof, the specifications and contract documents therefore as prepared by the Engineer, and as enumerated in Paragraph 1 of the General Conditions, all of which are made a part hereof and collectively evidence and constitute the Contract.
- c. City may, from time to time require changes in the Work of the Contractor to be performed hereunder. Such changes, which are mutually agreed upon by and between City and the Contractor, shall be incorporated by written amendment to this Agreement.

(2) **COMPENSATION:**

- a. City agrees to pay Contractor a sum not to exceed \_\_\_\_\_ Dollars

(\$\_\_\_\_\_.) in accordance with the Schedule of Values, incorporated into this Agreement as **ATTACHMENT “B”** and hereinafter referred to as "Compensation";

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- b. In the event funds are not appropriated or become non-appropriated for an included fiscal year by City, it is agreed by the parties that this Agreement will become null and void and the City's obligations cannot extend beyond the date of non-appropriation.

(3) **PERIOD OF SERVICES:**

- a. the Work to be performed hereunder by the Contractor shall begin upon the date outlined to the City's Notice to Proceed letter to the Contractor, incorporated into this Agreement as ATTACHMENT "C" and hereinafter referred to as "NTP"
- b. The Work shall be completed in accordance with the Schedule, incorporated into this Agreement as ATTACHMENT "D" and hereinafter referred to as "Schedule".
- c. Modifications to the Schedule may be required. Such modifications, which are mutually agreed upon by and between City and the Contractor shall be incorporated by written amendment to this Agreement.

(4) **FORCE MAJEURE:**

- a. Force majeure includes acts of God, acts of other branches of government in either their sovereign or contractual capacities, or any similar cause beyond the reasonable control of the parties.
- b. Any delays in or failure of performance by either party that are caused by a Force Majeure shall not constitute breach of this Agreement.
- c. In the event that any event of force majeure, as herein defined occurs, both parties shall be entitled to a reasonable extension of time for performance of its WORK.

(5) **NOTICES:**

- a. Any notices, bills, invoices, or reports required by this Agreement shall be sufficient if sent by the parties in the United States mail or electronic mail to the addresses of the Project Manager (See Section 00015)

(6) **RECORDS AND INSPECTIONS:**

- a. Contractor shall maintain full and accurate records with respect to all matters covered under this Agreement for a period of one year after the completion of the project.

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- b. City shall have free access at all proper times to such records, and the right to examine and audit the same and to make transcripts there from, and to inspect all program data, documents, proceedings, and activities.

(7) **COMPLETENESS OF AGREEMENT:**

- a. This Agreement and any additional or supplementary document or documents incorporated herein by specific reference contain all the terms and conditions agreed upon by the parties hereto, and no other agreements, oral or otherwise, regarding the subject matter of this Agreement or any part thereof shall have any validity or bind any of the parties hereto
- b. This Agreement is entered into with full understanding and awareness of such requirement.
- c. City shall be allowed to rely upon the representations of Contractor as set out in the Proposal.
- d. With the exception of the foregoing, this Agreement constitutes the entire agreement between the parties hereto and may not be modified or amended except in writing signed by both parties hereto.

(8) **CONFLICTS:**

- a. In the case of any conflict between the terms and conditions of this Agreement and the terms of any other agreement between the parties hereto, the terms of this Agreement shall control
- b. If there is a conflict between the City's Requests for Bids and this Agreement, then this Agreement shall control.
- c. If there is a conflict between the City's Request for Bids and the Contractor's Bid, the City's Request for Bids shall control.
- d. Both parties agree that all conflicts arising under this Agreement that cannot be settled between the parties shall be resolved in the Georgetown County Court of Common Pleas (Non-Jury)

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(9) **SEVERABILITY:**

- a. If any part or provision of this Agreement is held invalid or unenforceable under applicable law, such invalidity or unenforceability shall not in any way affect the validity or enforceability of the remaining parts and provisions of this Agreement.

(10) **NONWAIVER:**

- a. The waiver by City or Contractor of a breach of this Agreement shall not operate as a waiver of any subsequent breach, and no delay in acting with regard to any breach of this Agreement shall be construed to be a waiver of the breach.
- b. In no event shall the making of any payment by City to the Contractor constitute or be construed as a waiver by City of any breach of covenant, or any default which may exist on the part of the Contractor.
- c. The making of any such payment by City while any such breach or default shall exist in no way impairs or prejudices any right or remedy available to City in respect to such breach or default.

(11) **GOVERNING LAW:**

- a. This Agreement and the rights, obligations and remedies of the parties hereto, shall in all respects be governed by and construed in accordance with the laws of the State of South Carolina.

(12) **RESPONSIBILITY:**

- a. Each party shall be responsible for its own acts as provided under the law of South Carolina and will be responsible for all damages, costs, fees and expenses which arise out of the performance of this Agreement which are due to that party's own negligence, tortious acts and other unlawful conduct and the negligence, tortious action and other unlawful conduct of its respective agents, officers and employees.

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(13) **FREEDOM OF INFORMATION ACT (FOIA)**

- a. The parties acknowledge that all documents are subject to release under the South Carolina Freedom of Information Act (FOIA) and will be released to the public unless exempt from disclosure under the FOIA.
- b. If the Contractor contends a document is exempt from disclosure under the FOIA, it shall mark any such documents plainly, and seek protection from disclosure by filing an appropriate action in Circuit Court and shall bear the cost of the action and any monetary or attorney's fees awarded to the person or entity making the FOIA request.
- c. If the Contractor objects to release and litigation is commenced against the City under the FOIA, the City agrees to promptly notify the Contractor, who shall move in intervene as a party. The Contractor agrees to hold the City harmless from and indemnify for all costs (including plaintiff's attorney's fees if awarded by the Court) incurred by the City in defending the lawsuit and the funds necessary to satisfy any judgment and all costs on appeal, if any.

(14) **THIRD-PARTY OBLIGATIONS:**

- a. Neither party shall be obligated or liable hereunder to any party other than the second party to this Agreement.

(15) **RESTRICTIONS ON LOBBYING:**

- a. The Contractor shall comply with all requirements of Section 1352, Title 31 of the U.S. Code, which prohibits all recipients of federal funds from using appropriated monies for lobbying activities.

(16) **SUCCESSORS AND ASSIGNS:**

- a. The rights and obligations herein shall inure to and be binding upon the successors and assigns of the parties hereto.



**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

**IN WITNESS WHEREOF**, City and the Contractor have executed this agreement as of the date first written above.

CITY OF GEORGETOWN, SOUTH CAROLINA  
(OWNER)

\_\_\_\_\_  
(SIGNATURE)

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

(SEAL)

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

\_\_\_\_\_  
(CONTRACTOR)

\_\_\_\_\_  
(SIGNATURE)

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

(CORPORATE SEAL)

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

Attest:

\_\_\_\_\_  
It's Secretary

\_\_\_\_\_  
Witness

**(END OF SECTION)**

CONTRACT  
00 50 00-7



**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

**SECTION 00 60 00.1  
PERFORMANCE BOND**

**KNOW ALL MEN BY THESE PRESENTS THAT**

---

(NAME OF CONTRACTOR)

---

(ADDRESS OF CONTRACTOR)

A Corporation Partnership, hereinafter called Principal, and

---

(NAME OF SURETY)

---

(ADDRESS OF SURETY)

Hereinafter called Surety, are held and firmly bound unto

THE CITY OF GEORGETOWN, SOUTH CAROLINA  
(NAME OF OWNER)

PO BOX 939, GEORGETOWN, SC 29442  
(ADDRESS OF OWNER)

hereinafter called Owner, in the penal sum of (100% of total bid)

\_\_\_\_\_ Dollars

(\$ \_\_\_\_\_), in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these present.

**THE CONDITION OF THIS OBLIGATION** is such that whereas the Principal entered into a certain Contract with the Owner dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, a copy of which is hereto attached and made part hereof for **STORMWATER SYSTEM IMPROVEMENTS – HISTORIC DISTRICT**.

**NOW, THEREFORE**, if the Principal shall well, truly, and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said Contract during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety, and if he shall satisfy all claims and demands incurred under such contract

PERFORMANCE BOND  
00 60 00.1-1

**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

and fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

**PROVIDED FURTHER**, that the said Surety, for value received hereby stipulates and agrees that no change, extensions of time, alteration, or addition to the terms of the Contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the specifications.

**PROVIDED FURTHER**, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

**IN WITNESS WHEREOF**, this instrument is executed in three (3) counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Signed, sealed and delivered in the presence of:

\_\_\_\_\_  
(PRINCIPAL - CONTRACTOR)

\_\_\_\_\_  
(SIGNATURE)

\_\_\_\_\_  
As to Principal

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

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

\_\_\_\_\_  
(SURETY)

\_\_\_\_\_  
(SIGNATURE)

\_\_\_\_\_  
As to Surety

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

ATTORNEY-IN-FACT  
(Power of Attorney to be attached)

**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

By: \_\_\_\_\_  
(AGENT)

\_\_\_\_\_  
(AGENT COMPANY NAME)

\_\_\_\_\_

\_\_\_\_\_  
(AGENT COMPANY ADDRESS)

\_\_\_\_\_

\_\_\_\_\_  
(AGENT ADDRESS)

**NOTES:**

1. Date of Bond must not be prior to date of Contract.
2. If Contractor is a Partnership, all partners should execute Bond.
3. Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

**(END OF SECTION)**



**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

**SECTION 00 60 10.1  
PAYMENT BOND**

**KNOW ALL MEN BY THESE PRESENTS THAT**

---

(NAME OF CONTRACTOR)

---

(ADDRESS OF CONTRACTOR)

A Corporation Partnership, hereinafter called Principal, and

---

(NAME OF SURETY)

---

(ADDRESS OF SURETY)

Hereinafter called Surety, are held and firmly bound unto

THE CITY OF GEORGETOWN, SOUTH CAROLINA  
(NAME OF OWNER)

PO BOX 939, GEORGETOWN, SC 29442  
(ADDRESS OF OWNER)

hereinafter called Owner, in the penal sum of (100% of total bid)

\_\_\_\_\_ Dollars

(\$ \_\_\_\_\_), in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these present.

**THE CONDITION OF THIS OBLIGATION** is such that whereas the Principal entered into a certain Contract with the Owner dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, a copy of which is hereto attached and made part hereof for **STORMWATER SYSTEM IMPROVEMENTS – HISTORIC DISTRICT**.

**NOW, THEREFORE**, if the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension of modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work, and all insurance premiums on said work, and for all labor, performed in such work

PAYMENT BOND  
OO 60 10.1-1

**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

**PROVIDED FURTHER**, that the said Surety, for value received hereby stipulates and agrees that no change, extensions of time, alteration, or addition to the terms of the Contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the specifications.

**PROVIDED FURTHER**, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

**IN WITNESS WHEREOF**, this instrument is executed in three (3) counterparts, each one of which shall be deemed an original, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Signed, sealed and delivered in the presence of:

\_\_\_\_\_  
(PRINCIPAL - CONTRACTOR)

\_\_\_\_\_  
(SIGNATURE)

\_\_\_\_\_  
As to Principal

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

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

\_\_\_\_\_  
(SURETY)

\_\_\_\_\_  
(SIGNATURE)

\_\_\_\_\_  
As to Surety

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

ATTORNEY-IN-FACT  
(Power of Attorney to be attached)



**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

By: \_\_\_\_\_  
(AGENT)

\_\_\_\_\_  
(AGENT COMPANY NAME)

\_\_\_\_\_  
(AGENT COMPANY ADDRESS)

\_\_\_\_\_  
(AGENT ADDRESS)

**NOTES:**

1. Date of Bond must not be prior to date of Contract.
2. If Contractor is a Partnership, all partners should execute Bond.
3. Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

**(END OF SECTION)**



**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

**SECTION 00 60 10.2**

**NOTICE OF INTENT TO AWARD**

OWNER: City of Georgetown  
2377 Anthuan Maybank Drive  
Georgetown, SC 29440

PROJECT NO.: #4015

PROJECT DESCRIPTION: **STORMWATER SYSTEM IMPROVEMENTS  
HISTORIC DISTRICT**

TO ALL BIDDERS:

**This is to notify all bidders that it is the intent of the Owner to award a contract as follows:**

NAME OF BIDDER: \_\_\_\_\_

DATE BIDS WERE RECEIVED: \_\_\_\_\_

AMOUNT OF BASE BID: \$ \_\_\_\_\_

**The Owner has determined that the above-named Bidder is responsible and has submitted the lowest responsive bid. The Owner may enter into a contract with this Bidder subject to the contract review and approval by the EDA and City Council.**

\_\_\_\_\_  
(Print or Type Name)

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

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

\_\_\_\_\_  
(Date Posted)

**(END OF SECTION)**



**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

**SECTION 00 60 20.4  
NOTICE OF AWARD**

TO:

PROJECT: **STORMWATER SYSTEM IMPROVEMENTS – HISTORIC DISTRICT**

PROJECT NO. : **#4015**

DATE:

The City of Georgetown (Owner) has considered your proposal in response to the Request for Bid (RFB) dated \_\_\_\_\_.

You are hereby notified that Owner has approved your bid in the amount of:

\$ \_\_\_\_\_.

You are required to provide the following documents: W-9 form, Employment Verification Affidavit, City's business license, Payment and Performance bonds, and Certificate of Insurance naming the City of Georgetown as additionally insured, within ten (10) business days from the date of this notice to you. A Purchase Order and contract agreement will then be prepared once the requested documents are on hand.

Please sign and return this form in acknowledgment of this Notice of Award to the Owner.

CITY OF GEORGETOWN, SOUTH CAROLINA

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

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

Acceptance of Notice

Receipt of the above Notice of Award is hereby acknowledged this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

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

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

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

**(END OF SECTION)**

NOTICE OF AWARD  
00 60 20.4



**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

**SECTION 00 60 40  
EMPLOYMENT ELIGIBILITY VERIFICATION REQUIREMENT**

- A. Contractor is required to comply with all applicable State and Federal employment eligibility verification requirements including but not limited to the following:
1. By signing its bid or proposal, Contractor certifies that it will comply with the applicable requirements of Title 41, Chapter 8 of the South Carolina Code of Laws and agrees to provide to the City of Georgetown upon request any documentation required to establish either: (a) that Title 41, Chapter 8 is inapplicable both to Contractor and its subcontractors or sub-subcontractors are in compliance with Title 41, Chapter 8. Pursuant to Section 41-8-70, “In addition to other penalties provided by law, a person who knowingly makes or files any false, fictitious, or fraudulent document, statement, or report pursuant to this chapter is guilty of a felony, and upon conviction, must be fined within the discretion of the court or imprisoned for not more than five years, or both. “Contractor agrees to include in any contracts with its subcontractors language requiring its subcontractors to (a) comply with the applicable requirement of Title 41, Chapter 8, and (b) include in their contracts with the sub-subcontractors language requiring the sub-subcontractors to comply with the applicable requirements of Title 41, Chapter 8.
- B. Contractor is required to complete and submit the attached affidavit along with the executed contract documents.
- C. E-Verify.
1. In addition to completing and maintaining the federal employment eligibility verification form (Form I-9), Contractor must, within three (3) business days after employing a new employee, verify the employee’s work authorization through the E-Verify federal work authorization program administered by the U.S. Department of Homeland Security. Employers may no longer confirm a new employee’s employment authorization with a driver’s license or state identification card.
  2. Contractor shall enroll in E-Verify at [www.dhs.gov/e-verify](http://www.dhs.gov/e-verify).

**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

**CONTRACTOR AFFIDAVIT**

**SOUTH CAROLINA ILLEGAL IMMIGRATION REFORM ACT (Amended)**

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 40, Chapter 8 of the S.C. Code Annotated and will remain in compliance with such requirements throughout the term of its contract with the Owner.

The Contractor hereby acknowledges that in order to comply with the requirements of S.C. Code Annotated Section 41-8-20:

- (A) All private employers in South Carolina shall be imputed a South Carolina employment license, which permits a private employer to employ a person in this State. A private employer may not employ a person unless the private employer's South Carolina employment license and any other applicable licenses as defined in Section 41-8-10 are in effect and are not suspended or revoked. A private employer's employment license shall remain in effect provided the private employer complies with the provisions of this chapter.
- (B) All private employers who are required by federal law to complete and maintain federal employment eligibility verification forms or documents must register and participate in the E-Verify federal work authorization program, or its successor, to verify the work authorization of every new employee within three business days after employing a new employee. A private employer who does not comply with the requirements of this subsection violates the private employer's licenses.
- (C) The South Carolina Department of Employment and Workforce shall provide private employers with technical advice and electronic access to the E-Verify federal work authorization program's website for the sole purpose of registering and participating in the program.
- (D) Private employers shall employ provisionally a new employee until the new employee's work authorization has been verified pursuant to this section. A private employer shall submit a new employee's name and information for verification even if the new employee's employment is terminated less than three business days after becoming employed. If a new employee's work authorization is not verified by the federal work authorization program, a private employer must not employ, continue to employ, or reemploy the new employee.

**EMPLOYMENT VERIFICATION**

00 60 40-2



**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

- (E) To assist private employers in understanding the requirements of this chapter, the director shall send written notice of the requirements of this section to all South Carolina employers and shall publish the information contained in the notice on its website. Nothing in this section shall create a legal requirement that any private employer receive actual notice of the requirements of this chapter through a written notice from the director, nor create any legal defense for failure to receive notice.
  
- (F) If a private employer is a contractor, the private employer shall maintain the contact phone numbers of all subcontractors and sub-subcontractors performing services for the private employer. The private employer shall provide the contact phone numbers or a contact phone number, as applicable, to the director pursuant to an audit or investigation within seventy-two hours of the director's request.

The Contractor agrees to provide to the Owner upon request any documentation required to establish the applicability of the South Carolina Illegal Immigration Reform Act (Amended) to the contractor, subcontractor or sub-subcontractor. The Contractor further agrees that it will upon request provide the Owner with any documentation required to establish that the Contractor and any subcontractors or sub-subcontractors are in compliance with the requirements of Title 41, Chapter 8 of the S.C. Code Annotated.

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

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

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

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

**(END OF SECTION)**



**Stormwater System Improvements – Historic District  
CITY OF GEORGETOWN**

**SECTION 00 60 60  
NOTICE TO PROCEED**

TO:

OWNER: City of Georgetown, South Carolina

PROJECT: **STORMWATER SYSTEM IMPROVEMENTS – HISTORIC DISTRICT**

PROJECT NUMBER: #4015

DATE:

This is your Notice to Proceed with the Work, on the above-mentioned Project, in accordance with

The Agreement dated \_\_\_\_\_, 20\_\_\_\_. You are authorized to commence Work on \_\_\_\_\_ 20\_\_\_\_, and you are required to complete the Work within \_\_\_\_\_ consecutive calendar days thereafter.

The date of final completion for all Work is therefore: \_\_\_\_\_ 20\_\_\_\_.

Kindly return this Notice to Proceed to the Owner in acknowledgement.

CITY OF GEORGETOWN, SOUTH CAROLINA

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

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

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

Acceptance of Notice

Receipt of the above Notice to Proceed is hereby acknowledged this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

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

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

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

**(END OF SECTION)**

NOTICE TO PROCEED  
00 60 60-1



**SECTION 00 61 00  
APPLICATION FOR PAYMENT**

**Contractor may submit other Pay Request form for Engineer's approval in lieu of the following:**

Owner: City of Georgetown Contractor: \_\_\_\_\_ Contract No. 4015  
 Pay Estimate No. \_\_\_\_\_  
 Period of Estimate: From \_\_\_\_\_ to \_\_\_\_\_

**CONTRACT CHANGE ORDER SUMMARY ESTIMATE**

<u>No.</u>	<u>Approval Date</u>	<u>Additions</u>	<u>Deductions</u>		
				1. Original Contract.....	\$ _____
				2. Change Orders .....	\$ _____
				3. Revised Contract (1+2)...	\$ _____
				4. Work Completed*.....	\$ _____
				5. Stored Materials* .....	\$ _____
				6. Subtotal (4+5).....	\$ _____
				7. Retainage .....	\$ _____
				8. Previous Payments.....	\$ _____
				9. Amount Due (6-7-8) .....	\$ _____
				<i>* Detailed breakdown attached</i>	
			<u>Totals:</u>		
			<u>Net Change:</u>		

**CONTRACT TIME**

Original (days): \_\_\_\_\_ On Schedule: Yes \_\_\_\_\_ No \_\_\_\_\_  
 Revised: \_\_\_\_\_ Starting Date: \_\_\_\_\_  
 Remaining: \_\_\_\_\_ Projected Completion: \_\_\_\_\_  
**Contractor's Certification:** **Engineer's Certification:**

The undersigned certifies that to the best of their knowledge, information, and belief the work covered by this payment estimate has been completed in accordance with the contract documents, that all amounts due subcontractors and suppliers have been paid by the Contractor for work for which previous payment estimates were issued and payments received from the Owner, and that the current payment shown herein is now due.

The undersigned certifies that to the best of their knowledge and belief, the quantities shown in this estimate are correct and the work has been performed in accordance with the contract documents. Based on periodic but less than full-time field representation, to the best of our information the quantities, items and schedule of values, work completed and material and equipment delivered are accurate as indicated on this request for payment. Some defects or problems with construction items may not be determined until final testing and operation of the system are performed. The Engineer cannot be held liable for approval for partial payments for the installation of these items from which the evidence of defects or problems were not determined until after the request for payment was approved.

(Signature): \_\_\_\_\_  
 By: \_\_\_\_\_  
 Date: \_\_\_\_\_

(Signature): \_\_\_\_\_  
 By: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 (Signature): \_\_\_\_\_  
 By: \_\_\_\_\_  
 Date: \_\_\_\_\_

Approved by Owner:









**SECTION 00 62 00  
CONTRACTOR'S AFFIDAVIT**

The State of \_\_\_\_\_ Date: \_\_\_\_\_

The County of \_\_\_\_\_ The City of \_\_\_\_\_

\_\_\_\_\_ of \_\_\_\_\_  
(Officer's Name) (Officer's Title) (Contractor's Name)

being duly sworn, deposed and says that \_\_\_\_\_ has furnished  
(Contractor's Name)

Labor and materials entering into the **Stormwater System Improvements – Historic District** dated \_\_\_\_\_ with the City of Georgetown, South Carolina.

\_\_\_\_\_ states further that this officer has full knowledge of all  
(Contractor's Name)

obligations for such labor and materials which have entered into and become part of that certain project known and designated above, and that this officer further deposes and says that all debts and other obligations for such labor and materials have been fully and completely paid for in good and lawful money of the United States of America and that there are no suits for damages against them proceeding, prospective and/or that there are no suits for damages against them proceeding, prospective, or otherwise, in consequence of their operations on the above said project.

The said \_\_\_\_\_ will hold the Owner, the City of Georgetown  
(Contractor's Name)

South Carolina, blameless of any and all mechanic's liens that may be hereafter entered or filed for record, so as to constitute a charge against said premises for work or labor done or materials furnished by them.

IN WITNESS HEREOF, this officer has heretofore put his hand and seal:

\_\_\_\_\_  
(Officer's Name)

I, \_\_\_\_\_, Notary Public in and for the above named County and State do hereby certify that \_\_\_\_\_ personally know to me to be the  
(Officer's Name)

affiant in the foregoing Affidavit, personally appeared before me this day and, having been duly sworn, deposed and says the facts set forth in the above Affidavit are true and correct.

WITNESS my hand and seal this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

\_\_\_\_\_  
Notary Public for the State of \_\_\_\_\_

My Commission Expires: \_\_\_\_\_



**SECTION 00 63 00  
CONTRACT CHANGE ORDER**

DATE: \_\_\_\_\_ PROJECT: Stormwater System Improvements  
Historic District  
CHANGE ORDER #: \_\_\_\_\_ PROJECT #: COG#4015 – WKD20210777.00.CH

Description of and Reason for Change: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Itemization of Proposed Change and Basis for Payment

Original Contract Price . . . . . \$ \_\_\_\_\_  
Previous Change Orders . . . . . \$ \_\_\_\_\_  
This Change, (An Addition) (A Deduction) of . . . . . \$ \_\_\_\_\_  
Proposed Revised Contract Price . . . . . \$ \_\_\_\_\_

Additional funds shall be provided in the following manner: \_\_\_\_\_  
\_\_\_\_\_

Extension of Contract Time Required: \_\_\_\_\_ days.

Revised Contract Completion Date: \_\_\_\_\_

Accepted by the Contractor:

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

Recommended by the Engineer:

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

Approved by the Owner:

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



**SECTION 00 70 00**  
**GENERAL CONDITIONS**

1. CONTRACT AND CONTRACT DOCUMENTS. The plans, specifications and addenda, hereinafter enumerated in Paragraph 1 of Supplemental General Conditions, shall form part of this contract and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth. The table of contents titles, heading, running headlines and marginal notes contained herein and in said documents are solely to facilitate reference to various provisions of the contract documents and in no way affect, limit or cast light on the interpretations of the provisions to which they refer.

Contents

1.	Contract and Contract Documents	24.	Construction Schedule and Payment Estimates
2.	Definitions	25.	Payments to Contractor
3.	Additional Instructions and Detail Drawings	26.	Acceptance of Work and Final Payment
4.	Shop Drawings and Samples	27.	Acceptance of Final Payment as Release
5.	Materials, Services & Facilities	28.	Payments by Contractor
6.	Contractor's Title to Materials	29.	Insurance
7.	Inspection and Testing of Materials	30.	Payment and Performance Bonds
8.	"Or Equal" Clause	31.	Assignments
9.	Patents	32.	Mutual Responsibility of Contractors
10.	Surveys, Laws, and Regulations	33.	Separate Contracts
11.	Contractor's Obligations	34.	Subcontracting
12.	Weather Conditions	35.	Engineer's Authority
13.	Protection of Work and Property, Emergency Interpretations	36.	Stated Allowances
14.	Interpretations	37.	Use of Premises and Removal of Debris
15.	Reports, Records and Data	38.	Quantities of Estimate
16.	Superintendence by Contractor	39.	Rights-of-Way and Suspension of Work
17.	Changes in Work	40.	Warranty for One Year After Completion of Contract
18.	Extras	41.	Notice and Service Thereof
19.	Time for Completion and Liquidated Damages	42.	Required Provisions Deemed Inserted
20.	Correction of Work	43.	Protection of Lives and Health
21.	Subsurface Conditions Found Different	44.	Wages and Overtime Compensation
22.	Claims for Extra Cost	45.	Prohibited Interests
23.	Right of Owner to Terminate Contract	46.	Conflicting Conditions
		47.	Indemnification

2. DEFINITIONS. The following terms as used in this contract are respectively defined as follows:
  - (a) Contractor. A person, firm or corporation with whom the contract is made by the Owner.
  - (b) Subcontractor. A person, firm or corporation supplying labor and materials, or only labor, for work at the site of the project for and under separate contract or agreement with the Contractor.
  - (c) Work on or at the Project. Work to be performed at the location of the project, including the transportation of materials and supplies to or from the location of the project by employees of the Contractor and any Subcontractor.
  
3. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS. The Contractor will be furnished additional instructions and detail drawings as necessary to carry out the work included in the Contract. The additional drawings and instructions thus supplied to the Contractor will coordinate with the Contract Documents and will be so prepared that they can be reasonably interpreted as part thereof. The Contractor shall carry on the work in accordance with the additional detail drawings and instructions. The Contractor and the Engineer will prepare jointly:
  - (a) A schedule fixing the dates at which special detail drawings will be required; such drawings, if any, to be furnished by the Engineer in accordance with said schedule; and
  - (b) A schedule fixing the respective dates for the submission of shop drawings, the beginning of manufacture, testing and installation of materials, supplies, and equipment, and the completion of the various parts of the work; each such schedule to be subject to change from time to time in accordance with the progress of the work.
  
4. SHOP DRAWINGS AND SAMPLES. Submit to the Engineer for approval, in accordance with the requirement of Section 01340.
  - 4.1 Samples. Contractor shall also submit to the Engineer for approval, all samples required by Section 01340. All samples will have been checked by and stamped with the approval of the Contractor, identified clearly as to material, manufacturer, any pertinent catalog numbers and the use for which intended.
  - 4.2 Deviations. At the time of each submission, Contractor shall in writing call the Engineer's attention to any deviations that the Shop Drawings or samples may have from the requirements of the Contract Document.
  - 4.3 Engineer's Review. Engineer will review and approve with reasonable promptness Shop Drawings and samples, but his review and approval shall be only for conformance with the design concept of the project and for compliance with the information given in the Contract Documents. The approval of a separate item as such will not indicate approval of the assembly in which the item functions. Contractor shall make any corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and resubmit new samples until approved. Contractor shall direct specific attention in writing or on

resubmitted Shop Drawings to revisions other than the corrections called for by Engineer on previous submissions. Contractor's stamp of approval on any Shop Drawing or sample shall constitute a representation to Owner and Engineer that Contractor has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers and similar data or he assumes full responsibility for doing so, and that he has reviewed or coordinated each Shop Drawing or sample with the requirements of the work and Contract Documents.

- 4.4 Contractor's Records. Where a Shop Drawing or sample submission is required by the Specifications, no related work shall be commenced until the submission has been approved by Engineer. A copy of each approved shop drawing and each approved sample shall be kept in good order by Contractor at the site and shall be available to Engineer.
- 4.5 Contractor's Responsibility. Engineer's approval of Shop Drawings or sample shall not relieve Contractor from his responsibility for any deviations from the requirements of the Contract Documents unless Contractor has in writing called the Engineer's attention to such deviation at the time of submission and Engineer has given written approval to the specific deviation, nor shall any approval by Engineer relieve Contractor from responsibility for errors or omissions in the Shop Drawings.
5. MATERIALS, SERVICES, AND FACILITIES shall be furnished by the Contractor.
- (a) It is understood that except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, gas lights, power, transportation, superintendence, taxes, insurance, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to execute, complete and deliver the work within the specified time.
- (b) Any work necessary to be performed after regular working hours, on Sundays, or legal holidays, shall be performed without additional expense to the Owner.
6. CONTRACTOR'S TITLE TO MATERIALS. No materials or supplies for the work shall be purchased by the Contractor or by any subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants that he has good title to all materials and supplies used by him in the work, free from all liens, claims or encumbrances.
7. INSPECTION AND TESTING OF MATERIALS. Unless otherwise specifically provided for in the specifications, the inspection and testing of material and finished articles to be incorporated in the work at the site shall be made by bureaus, laboratories, or agencies approved by the Owner. The cost of such inspection and testing shall be paid by the Contractor.
- 7.1 Certification by Contractor. Where the detailed specifications call for certified copies of mill or shop tests to establish conformance of certain materials with the specifications, it shall be the responsibility of the Contractor to assure delivery of such certifications to the Owner. No materials or finished articles shall be incorporated in the work until such materials and finished articles have passed the required tests. The Contractor shall promptly segregate and remove rejected material and finished articles from the site of the work.

- 7.2 Guaranty. The testing and approval of materials by the laboratory, or laboratories, shall not relieve the Contractor of any of his obligations to fulfill his contract and guarantee of workmanship and materials as called for in paragraph entitled "General Warranty for One Year After Completion of Contract" herein. The Contractor may, at his option and at his own expense, cause such other tests to be conducted as he may deem necessary to assure suitability, strength, and durability of any material or finished article.
8. "OR EQUAL" CLAUSE. The phrase "or equal" shall be construed to mean that material or equipment will be acceptable only when, in the judgment of the Engineer, they are composed of parts of equal quality, or equal workmanship and finish, designed and constructed to perform or accomplish the desired result as efficiently as the indicated brand, pattern, grade, class, make or model. Written approval will be obtained from the Engineer prior to installation.
9. PATENTS. The Contractor shall hold and save the Owner and its officers, agents, servants, and employees harmless from liability of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the contract, including its use by the Owner, unless otherwise specifically stipulated in the Contract Documents. If the Contractor uses any design, device or material covered by letter, patent, or copyright, he shall provide for such use by suitable agreement with the Owner of such patented or copyrighted design, device or material. It is mutually agreed and understood that, with exception, the contract prices shall include all royalties or costs arising from the use of such design, device or materials, in any way involved in the work. The Contractor and/or his sureties shall indemnify and save harmless the Owner of the project from any and all claims for infringements by reason of the use of such patented or copyrighted design, device or materials or any trademark or copyright in connection with work agreed to be performed under this contract, and shall indemnify the Owner for any cost, expense or damage which it may be obliged to pay by reason of such infringement at any time during the prosecution of the work or after completion of the work.
10. SURVEYS, LAWS AND REGULATIONS. The Contractor shall comply with the following:
- 10.1 Construction staking shall be in accordance standard construction staking practice or with the requirements of Section 01050 entitled "Field Engineering".
- 10.2 Laws and Regulations. The Contractor shall keep himself fully informed of all laws, ordinances, and regulations of 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. If any discrepancy or inconsistency should be discovered in this contract, or in the drawings or specifications herein referred to, in relation to any such law, ordinance, regulation, order or decree, he shall forthwith report the same in writing to the Owner. He shall, at all times, himself observe and comply with all such existing and future laws, ordinances and regulations (to the extent that such requirements do not conflict with Federal laws or regulations) and shall protect and indemnify the Owner and its agents against any claims or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by himself or by his employees.



11. CONTRACTOR'S OBLIGATIONS. The Contractor shall, in good workmanlike manner, do and perform all work and furnish all supplies and materials, machinery, equipment, facilities, and means, except as herein otherwise expressly specified, necessary or proper to perform and complete all the work required by this contract, within the time herein specified, in accordance with provisions of this contract and said specifications, and in accordance with the plans and drawings covered by this contract and any and all supplemental plans and drawings and in accordance with the directions of the Engineer as given from time to time during the progress of the work. He shall furnish, erect, maintain and remove such construction plant and such temporary works as may be required. The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements and limitation of the contract and specifications, and shall do, carry on and complete the entire work to the satisfaction of the Engineer and the Owner.
12. WEATHER CONDITIONS. In the event of temporary suspension of work or during inclement weather, or whenever the Engineer shall direct, the Contractor will, and will cause his subcontractors to, protect carefully his and their work and materials against damage or injury from the weather. If, in the opinion of the Engineer, any work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of his Subcontractors to so protect its work, such materials shall be removed and replaced at the expense of the Contractor.
13. PROTECTION OF WORK AND PROPERTY, EMERGENCY. The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this contract. He shall at all times safely guard and protect his own work and that of adjacent property from damage. The Contractor shall replace or make good any such damage, loss or injury unless such be caused directly by errors contained in the contract or by the Owner or by his duly authorized representatives. In case of emergency which threatens loss or injury of property and/or safety of life, the Contractor will be allowed to act, without previous instructions from the Engineer, in a diligent manner. He shall notify the Engineer immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted to the Engineer for approval. Where the Contractor has not taken action but has notified the Engineer of an emergency threatening injury to persons or damage to the work of any adjoining property, he shall act as instructed or authorized by the Engineer. The amount of reimbursement claimed by the Contractor on account of any emergency action shall be determined in the manner provided in paragraph entitled "Changes in Work" of these specifications.
14. INTERPRETATIONS. If any person contemplating submitting a bid for the proposed contract is in doubt as to the true meaning of any part of these proposed contract documents, he may submit to the Engineer a written request for an interpretation thereof. The person submitting the request will be responsible for its prompt and actual delivery. Any interpretation of such documents will be made only by addendum duly issued, and a copy of such addendum will be mailed or delivered to each person receiving a set of such documents. The Owner will not be responsible for any other explanation or interpretation of such documents which anyone presumes to make on behalf of the Owner before expiration of the ultimate time set for the receipt of bids.
15. REPORTS RECORDS AND DATA. The Contractor shall submit to the Owner such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the Owner may request concerning work performed or to be performed under this contract.

16. SUPERINTENDENCE BY CONTRACTOR. The Contractor shall employ only competent and skilled men on the work. The Contractor shall have competent Superintendent or Foreman present at all times when the work is in progress, who shall have full authority to act for the Contractor. It is understood that such representative shall be acceptable to the Engineer and shall be one who can be continued in that capacity for the particular job involved unless he ceases to be on the Contractor's payroll. The Contractor shall, upon demand from the Engineer, immediately remove any superintendent, foreman or workman whom the Engineer may consider incompetent or undesirable.
17. CHANGES IN WORK. No changes in the work covered by the approved contract documents shall be made without having prior written approval of the Owner. Charges or credits for the work covered by the approved change shall be determined by one or more, or a combination of, the following methods:
- (a) Unit bid prices previously approved.
  - (b) An agreed lump sum.
  - (c) The actual cost of:
    - 1. Labor, including foremen.
    - 2. Materials entering permanently into the work.
    - 3. The ownership or rental cost of construction plant and equipment during the time of use on the extra work.
    - 4. Power and consumable supplies for the operation of power equipment.
    - 5. Insurance.
    - 6. Social security and old age and unemployment contributions.

To the cost under (c) there shall be added a fixed fee to be agreed upon but not to exceed 10 percent of the estimated cost of the work. The fee shall be compensation to cover the cost of supervision, overhead, bond, profit and any other general expenses.

18. EXTRAS. Without invalidating the contract, the Owner may order extra work or make changes by altering, adding to or deducting from the work, the contract sum being adjusted accordingly, and the consent of the surety being first obtained where necessary or desirable. All the work of the kind bid upon shall be paid for at the price stipulated in the proposal, and no claims for any extra work or materials shall be allowed unless the work is ordered in writing by the Owner, or the Engineer acting officially for the Owner, and the price is stated in such order. Extra work shall be performed only upon the execution of authorized change orders as set forth in the preceding paragraph.
19. TIME FOR COMPLETION AND LIQUIDATED DAMAGES. It is hereby understood and mutually agreed by and between the Contractor and the Owner that the date of beginning and the time for completion as specified in the contract of the work to be done hereunder are essential conditions of this contract; and it is further mutually understood and agreed that the work embraced in this contract shall be commenced on a date to be specified in the Notice to Proceed.
- 19.1 Regular Prosecution of Work. The Contractor agrees that said work shall be prosecuted regularly, diligently and uninterruptedly at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and the Owner, that the time for completion of the work described herein is a

reasonable time for completion of same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

19.2 Liquidated Damages. If the Contractor shall neglect, fail, or refuse to complete the work within the time herein specified, or any proper extensions thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this contract, to pay to the Owner the amount specified in the contract not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contractor shall be in default after the time stipulated in the contract for completing the work. The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticality and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be retained from time to time by the Owner from current periodical estimates.

19.3 Extensions of Time for Completion. It is further agreed that time is of the essence of each and every portion of this contract and of the specifications wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the contractor an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this contract. Provided, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

- (a) To any preference, priority or allocation order duly issued by the Government.
- (b) To unforeseeable cause beyond the control and without the fault or negligence of the Contractor including, but not restricted to, acts of the public enemy, acts of the Owner, acts of another contractor in the performance of a contract with the Owner; fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, hurricanes, tornadoes; and
- (c) To any delays of subcontractors or suppliers occasioned by any of the causes specified in subsections (a) and (b) of this article.

Provided, further that the Contractor shall, within seven (7) days from the beginning of such delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the contract, notify the Owner in writing of the causes of delay, who shall ascertain the facts and extent of delay and notify the Contractor within a reasonable time of its decision in the matter, and grant such extension of time as the Owner shall deem suitable and just.

Normal weather conditions for the project area are taken into consideration in the time for completion of the contract; therefore, no extension of time will be extended for normal weather conditions, with the exception of hurricanes and tornadoes.

20. CORRECTION OF WORK. All work, all materials, whether incorporated in the work or not, all processes of manufacturer, and all methods of construction, shall be at all times and places subject to the inspection of the Engineer, who shall be

the final judge of the quality and suitability of the work, materials, processes of manufacture, and methods of construction of the purposes for which they are used. Should they fail to meet his approval, they shall be forthwith reconstructed, made good, replaced and/or corrected, as the case may be, by the Contractor at his own expense. Rejected material shall immediately be removed from the site. If in the opinion of the Engineer, it is undesirable to replace any defective or damaged materials or to reconstruct or correct any portion of the work injured or not performed in accordance with the contract documents, the compensation to be paid to the Contractor hereunder shall be reduced by such amount as, in the judgment of the Engineer, shall be equitable.

21. SUBSURFACE CONDITIONS FOUND DIFFERENT. Should the Contractor encounter subsurface and/or latent conditions at the site materially differing from those shown on the plans or indicated in the specifications, he shall immediately give notice to the Engineer of such conditions before they are disturbed. The Engineer will thereupon promptly investigate the conditions, and if he finds that they materially differ from those shown on the plans or indicated in the specifications, he will at once make such changes in the plans and/or specifications as he may find necessary; any increase or decrease of cost resulting from such changes to be adjusted in the manner provided in paragraph 17 of these specifications.
  - (a) Where no specific subsurface conditions are indicated or specified, no increase in cost will be considered in regards to subsurface conditions encountered.
22. CLAIMS FOR EXTRA COSTS. No claim for extra work or cost shall be allowed unless the same was done in pursuance of a written order of the Engineer, as aforesaid, and the claim presented with the first estimate after the changes or extra work is done. When work is performed under the terms of subparagraph 17(c) of these specifications, the Contractor shall furnish satisfactory bills payrolls and vouchers covering all items of cost and when requested by the Owner, give the Owner access to accounts relating thereto.
23. RIGHT OF OWNER TO TERMINATE CONTRACT. In the event that any of the provisions of this contract are violated by the Contractor or by any of his subcontractors, the Owner may serve written notice upon the Contractor and the surety of its intention to terminate the contract, such notices to contain the reasons for such intention to terminate the contract, and unless within 10 days after the serving of such notice upon the Contractor, such violation or delay shall cease and satisfactory arrangement or correction be made, the contract shall, upon the expiration of said 10 days, cease and terminate. In the event of any such termination, the Owner shall immediately serve notice thereof upon the surety and the Contractor, and the surety shall have the right to take over and perform the contract; provided, however, that if the surety does not commence performance thereof within 10 days from the date of the mailing to such surety of notice of termination, the Owner may take over the work and prosecute same to completion by the contract or by force account for the account and at the expense of the Contractor, and the Contractor and his surety shall be liable to the Owner for any excess cost occasioned thereby, and in such event the Owner may take possession of and utilize in completion the work such materials, appliances and plant as may be on the site of the work and necessary therefore. If the Contractor should die, be declared an incompetent, be declared bankrupt or insolvent, make an assignment for the benefit of creditors during the term of his contract, the Owner may terminate the contract in the manner and under the procedure set forth above with the exception that no notices to the Contractor shall be required, but in lieu thereof the Owner must make a reasonable effort to notify the estate of the Contractor, his guardian, assignee, or legal representative

of the intention to terminate and fact of termination, if there is any such guardian, assignee, or legal representative at the time the Owner desires to terminate.

24. CONSTRUCTION SCHEDULE AND PAYMENT ESTIMATES. Immediately after execution and delivery of the contract and before the first partial payment is made, the Contractor shall deliver to the Owner an estimated construction progress schedule in form satisfactory to the Owner, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the contract documents and the anticipated amount of each monthly payment that will become due the Contractor in accordance with the progress schedule.

24.1 Contractor's Payment Estimate. The Contractor shall also furnish:

- (a) A detailed payment estimate, giving a complete breakdown of the contract price; and
- (b) Periodic itemized estimates of work done for the purpose of making partial payments thereon. The costs employed in making up any of these schedules will be used only for determining the basis of partial payments and will not be considered as fixing a basis for addition to or deductions from the contract price.

24.2 Equipment Delivery Schedule. The Contractor shall also prepare 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 materials on hand for inventory and the necessity for extensive storage facilities at the job site.

25. PAYMENTS TO CONTRACTOR shall be made according to the following:

- (a) Payments to the Contractor will be made within thirty (30) days upon receipt of a duly certified approved estimate of the work performed during the preceding calendar month under this contract, but to insure the proper performance of this contract, the Owner will retain a portion of each estimate until final completion and acceptance of all work covered by this contract in accordance with the following:
  - 1) Retention of up to 10% of payment claimed until construction is complete.
- (b) In preparing the payment request, the material delivered on the site and preparatory work done may be taken into consideration.
- (c) All material and work covered by partial payments shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of materials and work upon which payments have been made or the restoration of any damaged work, or as a waiver of the right of the Owner to require the fulfillment of all the terms of the contract.

25.1 Owner's Right to Withhold Certain Amounts and Make Application Thereof. The Contractor agrees that he will indemnify and save the Owner harmless from all claims growing out of the lawful demands of subcontractors, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, power tools, and all

supplies, including commissary, incurred in the furtherance of the performance of this contract. The Contractor shall, at the Owner's request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged, or waived. If the Contractor fails so to do, then the Owner may, after having served written notice on the contractor, either pay unpaid bills, of which the Owner has written notice, direct, or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed in accordance with the terms of this contract, but in no event shall the provisions of this sentence be construed to impose any obligations upon the Owner to either the Contractor or his surety. In paying any unpaid bills of the Contractor, the Owner shall be deemed the agent of the Contractor, and any payment so made by the Owner shall be considered as a payment made under the contract by the Owner to the Contractor, and the Owner shall not be liable to the Contractor for any such payment made in good faith.

26. ACCEPTANCE OF WORK AND FINAL PAYMENT. Before final acceptance of the work and payment to the Contractor of the percentage retained by the Owner, the following requirements shall be complied with:
- (a) Final Inspection. Upon notice from the Contractor that his work is completed, the Engineer will make a final inspection of the work and shall notify the Contractor of all instances where his work fails to comply with the contract drawings and specifications, as well as any defects he may discover. The Contractor shall immediately make such alterations as are necessary to make the work comply with the contract drawings and specifications, and to the satisfaction of the Engineer.
  - (b) Operating Test. After the alterations for compliance with the contract drawings and specifications have been made, and before acceptance of the whole or any part of the work, it shall be subjected to test to determine that it is in accordance with the contract drawings and specifications. The Contractor shall maintain all work in first class condition for a thirty (30) day operating period after the work has been completed as a whole, the final inspection has been made, and the Engineer has notified the Contractor in writing that the work has been finished to his satisfaction. The retained percentage as provided herein will not become due or payable to the Contractor until after the thirty (30) day operating period has expired.
  - (c) Cleaning Up. Before the work is considered as complete, all rubbish and unused material due to or connected with the construction must be removed and the premises left in a condition satisfactory to the Owner. Streets, curbs, crosswalks, pavements, sidewalks, fences and other public and private property disturbed or damaged should be restored to their former condition. Final acceptance will be withheld until such work is finished.
  - (d) Liens. Final acceptance of the work will not be granted and the retained percentage will not be due or payable until the Contractor has furnished the Owner proper and satisfactory evidence under oath that all claims for labor and material employed or used in the construction of the work under this contract have been settled, and that no legal claims can be filed against the Owner for such labor or material.

- (e) Final Payment. Upon completion of all cleaning up, alterations and repairs required by the final inspection or operating test, the satisfactory completion of the operating test, and upon submitting proper and satisfactory evidence to the Owner that all claims have been settled, the Contractor shall then prepare his final payment estimate. After review and approval of the final payment estimate by the Engineer and the Owner, the payment shall then become due.
27. ACCEPTANCE OF FINAL PAYMENT AS RELEASE. The acceptance by the Contractor of final payment shall be and shall operate as a release to the owner of all claims and all liability to the Contractor for all things done or furnished in connection with this work and for every act and neglect of the Owner and others relating to or arising out of this work. No payment, final or otherwise, shall operate to release the Contractor or his sureties from any obligations under this Contract or his sureties from any obligations under this contract or the performance and payment bond.
28. PAYMENTS BY CONTRACTOR. The Contractor shall pay:
- (a) For all transportation and utility services not later than the 20th day of the calendar month following that in which services are rendered;
- (b) For all materials, tools, and other expendable equipment to the extent of ninety (90) percent of the cost thereof not later than the 20th day of the calendar month following that in which such materials, tools, and equipment are delivered at the site of the project, and the balance of the cost thereof not later than the 30th day following completion of that part of the work in or on which such materials, tools, and equipment are incorporated or used; and
- (c) To each of his subcontractors not later than the 5th day following each payment to the Contractor, the respective amounts allowed the Contractor on account of the work performed by his subcontractors to the extent of each subcontractor's interest therein.
29. INSURANCE. The Contractor shall procure and shall maintain during the life of this contract, whether such operation be by himself or by a subcontractor or anyone directly or indirectly employed by either of them, such insurance as required by statute and/or ordinance to adequately protect the Owner from any claims or damages, including bodily injury or death, which may arise from them during operations under this contract.
- 29.1 Limits of Liability. Insurance shall be obtained for not less than the limits of liability as specified in Section 00110-Insurance Requirements.
- 29.2 Certificates of Insurance. The Contractor shall furnish the Owner, if requested, certificates showing the type, amount, class of operations covered, effective dates and dates of expiration of the policies. Such certificates shall contain substantially the following statement: "The insurance covered by this certificate will not be cancelled or materially altered except after 30 days written notice has been received by the Owner".
30. PAYMENT AND PERFORMANCE BONDS. The Contractor shall furnish a 110 percent performance bond and a 100 percent payment bond as security for the faithful performance of this contract, as security for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract. The performance bond and payment bond shall be

in separate instruments. Before the final acceptance, each bond must be approved by the Owner.

31. ASSIGNMENTS. The Contractor shall not assign the whole or any part of this contract or any sums of money due or to become due hereunder without the written consent of the Owner. In case the Contractor assigns all or any part of any sums of money due or to become due under this contract, the instrument of assignment shall contain a clause substantially to the effect that is agreed that the right of the assignee in and to any sums of money due or to become due to the Contractor shall be subject to prior claims of all persons, firms and corporations for services rendered or materials supplied for the performance of the work called for in this contract.
32. MUTUAL RESPONSIBILITY OF CONTRACTORS. If through acts of neglect on the part of the Contractor, any other contractor or any subcontractor shall suffer loss or damage on the work, the Contractor agrees to settle with such other contractor or subcontractor by agreement or arbitration. If such other contractor or subcontractor shall assert any claim against the Owner on account of any damage alleged to have been sustained, the Owner shall notify the Contractor, who shall indemnify and save harmless the Owner against any such claim.
33. SEPARATE CONTRACTS. The Contractor shall coordinate his operations with those of other contractors. Cooperation will be required in the arrangement for the storage of materials and in the detailed execution of the work. The Contractor, including his subcontractor, shall keep informed of the progress and the detail work of other contractors and shall notify the Engineer immediately of lack of progress or defective workmanship on the part of other contractors. Failure of a contractor to keep informed of the work progressing on the site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by him of the status of the work as being satisfactory for proper coordination with his own work.
34. SUBCONTRACTING shall comply with the following:
  - (a) The Contractor may utilize the services of specialty contractors on those parts of the work that under normal contracting practices are performed by specialty subcontractors.
  - (b) The Contractor shall not award any work to any subcontractor without the prior written approval of the Owner, which approval will not be given until the Contractor submits to the Owner a written statement concerning the proposed award to the subcontractor, which statement shall contain such information as the Owner may require.
  - (c) The Contractor shall be as fully responsible to the Owner for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons employed by him.
  - (d) The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and other contract documents insofar as applicable to the work of subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contract under any provisions of the contract documents.



- (e) Nothing contained in this contract shall create any contractual relation between any subcontractor and the Owner.
35. ENGINEER'S AUTHORITY. The Engineer shall determine the amount, quality, acceptability and fitness of the several kinds of work and materials which are to be paid for under this contract and shall decide all questions which may arise in relation to said work and the construction thereof. The Engineer's estimates and decisions shall be final and conclusive, except as herein otherwise expressly provided. In case any question shall arise between the parties hereto relative to said contract or specifications, the determination or decision of the Engineer shall be a condition precedent to the right of the Contractor to receive any money or payment for work under this contract affected in any manner or to any extent by such question.
- 35.1 Interpretation of Drawings and Specifications. The Engineer shall decide the meaning and intent of any portion of the specifications and of any plans or drawings where the same may be found obscure or be in dispute. Any differences or conflicts in regard to their work that may arise between the Contractor under this contract and other contractors performing work for the Owner shall be adjusted and determined by the Engineer.
36. ALLOWANCES: Utility Conflicts, and Testing.
37. USE OF PREMISES AND REMOVAL OF DEBRIS. The Contractor expressly undertakes at his own expense:
- (a) To take every precaution against injuries to persons or damage to property.
  - (b) To store his apparatus, materials, supplies, and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work of any other contractors.
  - (c) To place upon the work or any part thereof only such loads as are consistent with the safety of that portion of the work.
  - (d) To clean up frequently all refuse, rubbish, scrap materials, and debris caused by his operations, to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance.
  - (e) Before final payment to remove all surplus material, falsework, temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from his operations, and to put the site in a neat, orderly condition.
  - (f) To effect all cutting, fitting or patching of his work required to make the same conform to the plans and specifications, and, except with the consent of the Engineer, not to cut or otherwise alter the work of any other contractor.
38. QUANTITIES OF ESTIMATE. The estimated quantities of work to be done and materials to be furnished under this contract, shown in any of the documents, including the proposal, are given for use in comparing bids, and the right is specially reserved except as herein otherwise specifically limited, to increase or diminish them as may be deemed reasonably necessary or desirable by the Owner to complete the work contemplated by this contract, and such increase or diminution shall in no way vitiate this contract, nor shall any such increase or diminution give cause for claims or liability for damages.

39. RIGHT-OF-WAY AND SUSPENSION OF WORK. 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, and will use due diligence in acquiring said land and rights-of-way as speedily as possible. But it is possible that all lands and rights-of-way may not be obtained as herein contemplated before construction begins, in which event the Contractor shall begin his work upon such land and 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 obtaining the remaining lands and 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 ability to procure any lands or rights-of-way for said work, the Contractor shall not be entitled to make or assert claim for damage by reason of said delay or to withdraw from 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 will compensate for the time lost by such delay, such determination to be set forth in writing.

40. GENERAL WARRANTY FOR ONE YEAR AFTER COMPLETION OF CONTRACT. For a period of at least one year after the completion of the contract, the Contractor warrants the fitness and soundness of all work done and materials and equipment put in place under the contract, and neither the final certificate of payment nor any provision in the Contract Documents nor partial or entire occupancy of the premises by the Owner shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work and pay for any damage to other work resulting there from, which shall appear within a period of one year from the date of final acceptance of the work, unless a longer period is specified. The Owner will give notice of observed defects with reasonable promptness. This warranty period shall be extended as necessary to include additional warranty periods required by permitting agencies. **The warranty shall be extended to two-years on the SCDOT's ROW.**

41. NOTICE AND SERVICE THEREOF. Any notice to any Contractor from the Owner relative to any part of this contract shall be in writing and considered delivered and the service thereof completed, when said notice is posted by registered mail to said Contractor or his authorized representative on the work or is deposited in the regular United States Mail in a sealed, postage prepaid envelope and the receipt thereof is acknowledged by the Contractor.

41.1 Owner's Notice. All papers required to be delivered to the Owner shall be delivered as indicated in Section 00 80 00 entitled Supplemental General Conditions.

42. REQUIRED PROVISIONS DEEMED INSERTED. Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein, and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted or is not correctly inserted, then upon the application of either party the contract shall forthwith be physically amended to make such insertion or correction.

43. PROTECTION OF LIVES AND HEALTH. In order to protect the lives and health of his employees under the contract, the Contractor shall comply with all pertinent provisions of the "Manual of Accident Prevention in Construction"

issued by the Associated General Contractors of America, Inc., and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under the contract. The Contractor alone shall be responsible for the safety, efficiency and adequacy of his plant, appliances and methods, and for any damage that may result from their failure or their improper construction, maintenance or operation.

44. WAGES AND OVERTIME COMPENSATION. The Contractor and each of his subcontractors shall comply with all applicable State and local laws or ordinances with respect to the hours worked by laborers and mechanics engaged in work on the project and with respect to compensation for overtime.
45. PROHIBITED INTERESTS. No official of the Owner, who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept or approve or to take part in negotiating, making, accepting, or approving any architectural, engineering, inspection, construction, or material supply contract or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part hereof. No officer, employee, architect, attorney, engineer, or inspector of and on behalf of the Owner to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the project shall become directly or indirectly interested personally in this contract or in any part hereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.
46. CONFLICTING CONDITIONS. Any provisions in any of the Contract Documents which may be in conflict or inconsistent with any of the paragraphs in these General Conditions shall be void to the extent of such conflict or inconsistency.
47. INDEMNIFICATION
  - 47.1 The CONTRACTOR will indemnify and hold harmless the OWNER, the ENGINEER and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting there from; and is caused in whole or in part by any negligent or willful act of omission of the CONTRACTOR and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.
  - 47.2 In any and all claims against the OWNER or the ENGINEER, or any of their agents or employees, by an employee of the CONTRACTOR, any SUBCONTRACTOR, anyone directly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under workmen's compensation acts, disability benefit acts or other employee benefits acts.
  - 47.3 The obligation of the CONTRACTOR under this paragraph shall not extend to the liability of the ENGINEER, its agents or employees arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, design or specifications.

**(END OF SECTION)**

**SECTION 00 80 00  
SUPPLEMENTARY CONDITIONS**

1. **WORKING HOURS**

The Contractor is allowed to work during regular working hours from 7:00 AM to 6:00 PM unless warranted due to emergency conditions.

Weekend work must be approved in advance by the Owner.

2. **BUSINESS LICENSE AND PERMITS**

The selected contractor shall be required to obtain a per-job city business license. Contact Revenues Manager, at 843-545-4041, to obtain a City business license.

3. **PROJECT SCHEDULE OF EVENTS**

The following is the schedule of events listed in the order of occurrence, showing the major milestones from issuance of the RFB to the contract completion:

<b>PROJECT MILESTONE EVENTS</b>	<b>DATE</b>	<b>LOCAL TIME</b>
Construction Bid Documents Release	Wednesday, March 29, 2023	
Non-mandatory Pre-Bid Meeting	Wednesday, April 12, 2023	10:00 am
Deadline for questions - emailed to: purchasing@georgetownsc.gov	Wednesday, April 19, 2023	2:00 pm
Deadline for addenda to be posted to the City's website, www.georgetownsc.gov, under "Bids"	Wednesday, April 26, 2023	2:00 pm
Bid opening date	Wednesday, May 3, 2023	2:00 pm
City Council approval (Tentative)	Thursday, June 15, 2023	
Construction Notice of Award (Tentative)	Monday, June 19, 2023	
Construction Notice to Proceed (Tentative)	Monday, July 3, 2023	
Construction Contract Completion (560 calendar days after NTP)	Monday, January 13, 2025	
Project Closeout (60 calendar days after completion)	Friday, March 14, 2025	

This is a federally funded project and as such Contractors are bound to the Code of Federal Regulations (CFR) – Part 200. EDA Awards became effective on November 12, 2020. Additional revisions to 2 CFR Part 200 are anticipated in the future. This Specific Award Condition (SAC) is provided to confirm that fact and advise the Recipient(s) that the version of 2 CFR Part 200 that took effect on November 12, 2020 currently applies to this award and supersedes conflicting provisions of 2 CFR Part 200 appearing in the SF-450 and/or Standard Terms and Conditions and this Exhibit (if any) attached to this Award. Future revisions to 2 CFR Part 200 may further supersede the version that took effect on November 12, 2020.

If archaeological materials are encountered during construction, the procedures codified at 36 CFR 800.13(b) will apply and the SC Department of Archives and History, the EDA and the Catawba Indian Nation shall be contacted immediately. Archaeological materials consist of any Items, fifty years old or older, which were made or used by man. These items include, but are not limited to, stone projectile points (arrowheads), ceramic sherds, bricks, worked wood, bone and stone, metal and glass objects, and human skeletal materials.

Contractors are hereby notified that they are encouraged, to the greatest extent practicable to purchase American-made equipment and products with funding provided under this award, Contractors shall pay construction field personnel based on current Davis Bacon wage Rates.

EEO Goals:

Goals for minority participation for each trade: 33%

Goals for female participation for each trade: 6.9%

Contractors shall refer to PART 60-4 - CONSTRUCTION CONTRACTORS - AFFIRMATIVE ACTION REQUIREMENTS for further information.

The Contractor shall install EDA Project Sign at a location designated by Owner.

The Contractor shall take digital photographs of the site sign, also provide digital photographs of the investment that show progress of construction, the completed facility, before and after views, and other milestones such as check presentations, ground breakings and ribbon cutting/grand openings, if appropriate. Include EDA Sign in photographs when practicable. Please email digital photographs to the City Project Manager and Grant Administrator.

**(END OF SECTION)**

## **Manatee Guidelines for South Carolina**

To reduce potential construction-related impacts to the manatee to discountable and insignificant levels, the Service recommends implementing the following *Standard Manatee Construction Conditions* to all projects affecting the coastal waters of South Carolina.

The permittee will comply with the following construction conditions for manatee protection:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel **must** monitor water-related activities for the presence of manatee(s) during May 1 - November 15. Construction personnel are requested to monitor outside of that timeframe as manatees may be in the area before or after the above dates.
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.
- c. Any siltation barriers used during the project shall be made of material in which manatees cannot become entangled and must be properly secured, and regularly monitored to avoid manatee entrapment.
- d. All vessels associated with the project shall operate at “no wake/idle” speeds at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- e. If manatee(s) are seen within 100 yards of the active construction area all appropriate precautions shall be implemented to ensure protection of the manatee. These precautions shall include the operation of all moving equipment no closer than 50 feet to a manatee. Operation of any equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment. Activities will not resume until the manatee(s) has departed the project area of its own volition.
- f. The permittee understands and agrees that all in-water lines (rope, chain, and cable, including the lines to secure turbidity curtains) must be stiff, taut, and non-looping. Examples of such lines are heavy metal chains or heavy cables that do not readily loop and tangle. Flexible in-water lines, such as nylon rope or any lines that could loop or tangle, must be enclosed in a plastic or rubber sleeve/tube to add rigidity and prevent the line from looping and tangling. In all instances, no excess line is allowed in the water. Where appropriate in water wires, cables,

Updated: September 17, 2019

should be fitted with PVC sleeve from the surface to the bottom to prevent any potential scraping of the passing manatees.

- g. Any collision with and/or injury to a manatee shall be reported immediately to the U.S. Fish and Wildlife Service contacts: Melanie Olds, South Carolina Manatee Lead, Charleston Field Office, at 843-727-4707 ext. 205; or Terri Calleson, Manatee Recovery Coordinator, North Florida Field Office, at 904-731-3286.





October 24, 2022

Mr. Orlando Arteaga  
City of Georgetown  
PO Box 939  
Georgetown, SC 29440

**RE: Stormwater System Improvements – Historic District – Project #4015  
EDA Investment No. 04-79-07494  
Manatee Guidelines for South Carolina**

Dear Mr. Arteaga:

The construction contract documents (plans and specifications) for the above referenced project include the Manatee Guidelines for South Carolina (September 17, 2019, version). They have been incorporated into the Supplementary Conditions of the Specifications.

This project has two outfalls for the Front Street Stormwater System (Plan Sheets C1.2 and C1.5). Tide gates (check valves) will be installed on the two Front Street outfalls that are above the Mean Low Water elevation and only become partially or fully submerged as the tide approaches the Mean High-Water elevation. As the two outfalls are temporarily submerged (based on the tides) and the tide gates partially open only when water is exiting the system (tide gates are normally closed), there is a very low likelihood of manatee entry into the Front Street Stormwater System.

This project has one outfall to a ditch that runs out into the marsh for the Orange Street Stormwater System (Plan Sheets C2.3). The Orange Street outfall is higher and only becomes partially submerged (approx. one foot above invert elevation) at Mean High Water elevation. The Orange Street outfall is also located in an existing ditch that is tidal, and not open water. The likelihood of a manatee entering the Orange Street outfall is extremely low.

Mr. Orlando Arteaga

October 24, 2022

Page 2

Upon considering the migration patterns for the West Indian Manatee and design of the stormwater systems as presented, we find the likelihood of manatee entry to be extremely low and recommend that no further barriers be installed.

Please let us know if you'd like to discuss further or if we can provide additional information.

Sincerely,

W.K. Dickson & Co., Inc.

A handwritten signature in blue ink that reads "James C. Reigart". The signature is written in a cursive style with a prominent initial "J".

James C. Reigart, PE

Senior Project Manager

Enclosure

Appendix  
to  
Section 00 80 00 - Supplementary Conditions

EDA/SC Fish and Wildlife Requirements

1. Davis-Bacon Wage Rates
2. Lobbying Certification and Restriction Form (CD-512)
3. Requirements for Affirmative Action (EEO)
4. EDA Contracting Provisions for Construction Projects
5. EDA Construction Site Sign Specifications
6. Manatee Guidelines for South Carolina



"General Decision Number: SC20220001 02/25/2022

Superseded General Decision Number: SC20210001

State: South Carolina

Construction Types: Heavy (Heavy and Sewer and Water Line)

Counties: Abbeville, Allendale, Bamberg, Barnwell, Beaufort, Cherokee, Chester, Chesterfield, Clarendon, Colleton, Dillon, Georgetown, Greenwood, Hampton, Jasper, Lancaster, Lee, Marion, Marlboro, McCormick, Newberry, Oconee, Orangeburg, Union and Williamsburg Counties in South Carolina.

DOES NOT INCLUDE SAVANNAH RIVER SITE IN ALLENDALE AND BARNWELL COUNTIES

HEAVY CONSTRUCTION PROJECTS (includes Sewer & Water Line projects)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least

30, 2022:	\$11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.
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The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Modification Number	Publication Date
0	01/07/2022
1	02/25/2022

\* SUSC1990-005 02/08/1990

	Rates	Fringes
Boilermaker (tank work).....	\$ 12.96 **	3.315
Bricklayer.....	\$ 7.25 **	
Carpenter.....	\$ 7.42 **	
Cement mason/concrete finisher.....	\$ 7.25 **	
Ironworker.....	\$ 10.98 **	
Laborers:		
Chain saw.....	\$ 7.25 **	
General.....	\$ 7.25 **	
Pipelayer.....	\$ 7.25 **	
Pipefitter.....	\$ 9.09 **	
Power equipment operators:		
Backhoe.....	\$ 7.25 **	
Bulldozer.....	\$ 7.25 **	
Crane.....	\$ 7.98 **	

Dragline.....\$ 7.25 \*\*  
 Front End Loader.....\$ 7.25 \*\*  
 Mechanic.....\$ 7.25 \*\*  
 Motor grader.....\$ 7.25 \*\*  
 Pan Scraper.....\$ 7.25 \*\*

Line Construction: line  
 technician.....\$ 10.08 \*\*

MANHOLE BUILDER.....\$ 7.25 \*\*

TRUCK DRIVER.....\$ 7.25 \*\*

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

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\*\* Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$15.00) or 13658 (\$11.25). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

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 a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 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. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.



## Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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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 National Office because National Office has 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 DECISIO"

## CERTIFICATION REGARDING LOBBYING LOWER TIER COVERED TRANSACTIONS

Applicants should review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 15 CFR Part 28, "New Restrictions on Lobbying."

### LOBBYING

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 15 CFR Part 28, for persons entering into a grant, cooperative agreement or contract over \$100,000 or a loan or loan guarantee over \$150,000 as defined at 15 CFR Part 28, Sections 28.105 and 28.110, the applicant certifies that to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure occurring on or before October 23, 1996, and of not less than \$11,000 and not more than \$110,000 for each such failure occurring after October 23, 1996.

### Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

In any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure occurring on or before October 23, 1996, and of not less than \$11,000 and not more than \$110,000 for each such failure occurring after October 23, 1996.

**As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above applicable certification.**

NAME OF APPLICANT

AWARD NUMBER AND/OR PROJECT NAME

#04-79-07494 Stormwater System Improvements

PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

SIGNATURE

DATE



**NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION  
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY  
(EXECUTIVE ORDER 11246 AND 41 CFR PART 60-4)**

The following Notice shall be included in, and shall be a part of all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of \$10,000.

The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<b>Timetables</b>	<b>Goals for minority participation for each trade</b>	<b>Goals for female participation for each trade</b>
	33% $\pm$ %	<b>6.9%</b>

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is:

State of	<u>South Carolina</u>
County of	<u>Georgetown</u>
City of	<u>Georgetown</u>



## **U. S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT ADMINISTRATION**



### **EDA CONTRACTING PROVISIONS FOR CONSTRUCTION PROJECTS**

These EDA Contracting Provisions for Construction Projects (EDA Contracting Provisions) are intended for use by recipients receiving federal assistance from the U. S. Department of Commerce - Economic Development Administration (EDA). They contain provisions specific to EDA and other federal provisions not normally found in non-federal contract documents. The requirements contained herein must be incorporated into all construction contracts and subcontracts funded wholly or in part with federal assistance from EDA.





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## 1. **DEFINITIONS**

*Agreement* – The written instrument that is evidence of the agreement between the Owner and the Contractor overseeing the Work.

*Architect/Engineer* - The person or other entity engaged by the Recipient to perform architectural, engineering, design, and other services related to the work as provided for in the contract.

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

*Contract Documents* – Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents.

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

*Drawings or Plans* – That part of the Contract Documents prepared or approved by the Architect/Engineer that graphically shows the scope, extent, and character of the Work to be performed by the Contractor.

*EDA* - The United States of America acting through the Economic Development Administration of the U.S. Department of Commerce or any other person designated to act on its behalf. EDA has agreed to provide financial assistance to the Owner, which includes assistance in financing the Work to be performed under this Contract. Notwithstanding EDA's role, nothing in this Contract shall be construed to create any contractual relationship between the Contractor and EDA.

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

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

*Recipient* – A non-Federal entity receiving a Federal financial assistance award directly from EDA to carry out an activity under an EDA program, including any EDA-approved successor to the entity.

*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.

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

*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.

## 2. **APPLICABILITY**

The Project to which the construction work covered by this Contract pertains is being assisted by the United States of America through federal assistance provided by the U.S. Department of Commerce - Economic Development Administration (EDA). Neither EDA, nor any of its departments, entities, or employees is a party to this Contract. The following EDA Contracting Provisions are included in this Contract and all subcontracts or related instruments pursuant to the provisions applicable to such federal assistance from EDA.

## 3. **FEDERALLY REQUIRED CONTRACT PROVISIONS**

(a) All contracts in excess of the simplified acquisition threshold - currently fixed at \$150,000 (*see* 41 U.S.C. §§ 134 and 1908) must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as may be appropriate.

(b) All contracts in excess of \$10,000 must address termination for cause and for convenience by the Recipient including the manner by which it will be effected and the basis for settlement.

(c) All construction contracts awarded in excess of \$10,000 by recipients of federal assistance and their contractors or subcontractors shall contain a provision requiring compliance with Executive Order 11246 of September 24, 1965, *Equal Employment Opportunity*, as amended by Executive Order 11375 of October 13, 1967, and Department of Labor implementing regulations at 41 C.F.R. part 60.

(d) All prime construction contracts in excess of \$2,000 awarded by Recipients must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. §§ 3141-3148) as supplemented by Department of Labor regulations at 29 C.F.R. part 5. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. § 874 and 40 U.S.C. § 3145) as supplemented by Department of Labor regulations at 29 C.F.R. part 3.

(e) All contracts awarded by the Recipient in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704 (the Contract Work Hours and Safety Standards Act) as supplemented by Department of Labor regulations at 29 C.F.R. part 5.

(f) All contracts must include EDA requirements and regulations that involve a requirement on the contractor or sub-contractor to report information to EDA, the Recipient or any other federal agency.

- (g) All contracts must include EDA requirements and regulations pertaining to patent rights with respect to any discovery or invention which arises or is developed in the course of or under such contract.
- (h) All contracts must include EDA requirements and regulations pertaining to copyrights and rights in data.
- (i) All contracts and subgrants in excess of \$150,000 must contain a provision that requires compliance with all applicable standards, orders, or requirements issued under the Clean Air Act (42 U.S.C. § 7401 *et seq.*) and the Federal Water Pollution Control Act (Clean Water Act) (33 U.S.C. § 1251 *et seq.*), and Executive Order 11738, *Providing for Administration of the Clean Air Act and the Federal Water Pollution Control Act With Respect to Federal Contracts, Grants, or Loans*.
- (j) Contracts must contain mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. § 6201).
- (k) Contracts must contain a provision ensuring that contracts are not to be made to parties on the government wide Excluded Parties List System in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 C.F.R. part 180.
- (l) Contracts must contain a provision ensure compliance with the Byrd Anti-Lobbying Amendment (31 U.S.C. § 1352) under which contractors that apply or bid for an award of \$100,000 or more must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. § 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.
- (m) If the Recipient is a state agency or agency of a political subdivision of a state, any contract awarded must contain a provision ensuring compliance with section 6002 of the Solid Waste Disposal Act (42 U.S.C. § 6962), as amended by the Resource Conservation and Recovery Act related to the procurement of recovered materials.

#### 4. **REQUIRED PROVISIONS DEEMED INSERTED**

Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the contract shall forthwith be physically amended to make such insertion of correction.

5. **INSPECTION BY EDA REPRESENTATIVES**

The authorized representatives and agents of EDA shall be permitted to inspect all work, materials, payrolls, personnel records, invoices of materials, and other relevant data and records.

6. **EXAMINATION AND RETENTION OF CONTRACTOR'S RECORDS**

(a) The Owner, EDA, or the Comptroller General of the United States, or any of their duly authorized representatives shall, generally until three years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.

(b) The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as paragraph (a) above. "Subcontract," as used in this clause, excludes purchase orders that do not exceed \$10,000.

(c) The periods of access and examination in paragraphs (a) and (b) above for records relating to (1) appeals under the disputes clause of this contract, (2) litigation or settlement of claims arising from the performance of this contract, or (3) costs and expenses of this contract to which the Owner, EDA, or Comptroller General or any of their duly authorized representatives has taken exception shall continue until disposition of such appeals, litigation, claims, or exceptions.

7. **CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES**

Immediately after execution and delivery of the contract, and before the first partial payment is made, the Contractor shall deliver to the Owner an estimated construction progress schedule in a form satisfactory to the Owner, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the Contract Documents and the anticipated amount of each monthly payment that will become due to the Contractor in accordance with the progress schedule. The Contractor also shall furnish the Owner (a) a detailed estimate giving a complete breakdown of the contract price and (b) periodic itemized estimates of work done for the purpose of making partial payments thereon. The costs employed in making up any of these schedules will be used only to determine the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the contract price.

8. **CONTRACTOR'S TITLE TO MATERIAL**

No materials, supplies, or equipment for the work shall be purchased by the Contractor or by any subcontractor that is subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants and guarantees that he/she has good title to all work, materials, and equipment used by him/her in the Work, free and clear of all liens, claims, or encumbrances.

9. **INSPECTION AND TESTING OF MATERIALS**

All materials and equipment used in the completion of the Work shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be selected by the Owner. Materials of construction, particularly those upon which the strength and durability of any structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for intended uses.

10. **"OR EQUAL" CLAUSE**

Whenever a material, article, or piece of equipment is identified in the Contract Documents by reference to manufacturers' or vendors' names, trade names, catalogue numbers, etc., it is intended merely to establish a standard. Any material, article, or equipment of other manufacturers and vendors that will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed is, in the opinion of the Architect/Engineer, of equal substance and function. However, such substitution material, article, or equipment shall not be purchased or installed by the Contractor without the Architect/Engineer's written approval.

11. **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 that 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 Architect/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 the Owner in the Contract Documents.

(b) To the fullest extent permitted by Laws and Regulations, the Contractor shall indemnify and hold harmless the Owner and the Architect/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.

12. **CLAIMS FOR EXTRA COSTS**

No claims for extra work or cost shall be allowed unless the same was done in pursuance of a written order from the Architect/Engineer approved by the Owner.

### 13. CONTRACTORS AND SUBCONTRACTORS INSURANCE

(a) The Contractor shall not commence work under this Contract until the Contractor has obtained all insurance reasonably required by the Owner, nor shall the Contractor allow any subcontractor to commence work on his/her subcontract until the insurance required of the subcontractor has been so obtained and approved.

(b) Types of insurance normally required are:

- (1) Workers' Compensation
- (2) Contractor's Public Liability and Property Damage
- (3) Contractor's Vehicle Liability
- (4) Subcontractors' Public Liability, Property Damage and Vehicle Liability
- (5) Builder's Risk (Fire and Extended Coverage)

(c) **Scope of Insurance and Special Hazards:** The insurance obtained, which is described above, shall provide adequate protection for the Contractor and his/her subcontractors, respectively, against damage claims that may arise from operations under this contract, whether such operations be by the insured or by anyone directly or indirectly employed by him/her and also against any of the special hazards that may be encountered in the performance of this Contract.

(d) **Proof of Carriage of Insurance:** The Contractor shall furnish the Owner with certificates showing the type, amount, class of operations covered, effective dates, and dates of expiration of applicable insurance policies.

### 14. CONTRACT SECURITY BONDS

(a) If the amount of this Contract exceeds \$150,000, the Contractor shall furnish a performance bond in an amount at least equal to one hundred percent (100%) of the Contract price as security for the faithful performance of this Contract and also a payment bond in an amount equal to one hundred percent (100%) of the Contract price or in a penal sum not less than that prescribed by State, Territorial, or local law, as security for the payment of all persons performing labor on the Work under this Contract and furnishing materials in connection with this Contract. The performance bond and the payment bond may be in one or in separate instruments in accordance with local law. Before final acceptance, each bond must be approved by EDA. If the amount of this Contract does not exceed \$150,000, the Owner shall specify the amount of the payment and performance bonds.

(b) All bonds shall be in the form prescribed by the Contract Documents except as otherwise provided in applicable 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 Treasury 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. Surety companies executing the bonds must also be authorized to transact business in the state where the Work is located.

15. **LABOR STANDARDS - DAVIS-BACON AND RELATED ACTS**  
**(as required by section 602 of PWEDA)**

(a) **Minimum Wages**

(1) All laborers and mechanics employed or working upon the site of the Work in the construction or development of the Project will be paid unconditionally and not less often than 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 at 29 C.F.R. part 3, the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at the time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor, which is attached hereto and made a part hereof, regardless of any contractual relationship that 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 C.F.R.

§ 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 C.F.R. § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked 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 and wage rates determined under 29 C.F.R. § 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.

(2) (i) Any class of laborers or mechanics to be employed under the Contract, but not listed in the wage determination, shall be classified in conformance with the wage determination. EDA shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(A) The work to be performed by the classification requested is not performed by a classification in the wage determination;

(B) The classification is utilized in the area by the construction industry; and

(C) The proposed wage rate, including any bona fide fringe benefits, bears a

reasonable relationship to the wage rates contained in the wage determination.

(ii) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and EDA 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 EDA or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210.

(iii) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and EDA or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), EDA or its designee shall refer the questions, including the views of all interested parties and the recommendation of EDA or its designee, to the Administrator for determination.

(iv) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(2)(ii) or (iii) of this section, 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.

(3) 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.

(4) 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.

(b) **Withholding**

EDA 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 federally-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 in the construction or development of the Project, all or part of the wages required by the Contract, EDA 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 until such violations

have ceased. EDA or its designee may, after written notice to the Contractor, disburse such amounts withheld for and 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.

(c) **Payrolls and basic records**

(1) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the Work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the Work in the construction or development of the Project. 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 1(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 C.F.R. § 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 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, the plan or program is financially responsible, and the plan or program has been communicated in writing to the laborers or mechanics affected, and provide records that show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(2) (i) For each week in which Contract work is performed, the Contractor shall submit a copy of all payrolls to the Owner for transmission to EDA or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 C.F.R. part 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose. It may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, D.C. 20402; or downloaded from the U.S. Department of Labor's website at <https://www.dol.gov/whd/forms/wh347.pdf>. The prime Contractor is responsible for the submission of copies of payrolls by all subcontractors

(ii) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

(A) That the payroll for the payroll period contains the information required to be maintained under 29 C.F.R. § 5.5(a)(3)(i) and that such information is correct and complete;

(B) That each laborer or mechanic (including each helper, 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 C.F.R. part 3; and

(C) 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.

(iii) 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 paragraph 15(c)(2)(ii) of this section.

(iv) 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 3729 of Title 31 of the U.S. Code.

(3) The Contractor or subcontractor shall make the records required under paragraph 15(c)(1) of this section available for inspection, copying, or transcription by authorized representatives of EDA 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, EDA or its designee may, after written notice to the Contractor 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 C.F.R. § 5.12.

(d) **Apprentices and Trainees.**

(1) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training (Bureau), or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her 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 Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the 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 stated 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 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. 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 Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, 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.

(2) **Trainees.** Except as provided in 29 C.F.R. § 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program that 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's 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 classification of 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.

(3) **Equal employment opportunity.** The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity

requirements of Executive Order 11246, *Equal Employment Opportunity*, as amended, and 29 C.F.R. part 30.

(e) **Compliance with Copeland Anti-Kickback Act Requirements.** The Contractor shall comply with the Copeland Anti-Kickback Act (18 U.S.C. § 874 and 40 U.S.C. § 3145) as supplemented by Department of Labor regulations (29 C.F.R. part 3, “Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States”). The Act provides that the Contractor and any subcontractors shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which they are otherwise entitled. The Owner shall report all suspected or reported violations to EDA.

(f) **Subcontracts.** The Contractor and any subcontractors will insert in any subcontracts the clauses contained in 29 C.F.R. §§ 5.5(a)(1) through (10) and such other clauses as EDA or its designee may require, 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 29 C.F.R. § 5.5.

(g) **Contract termination; debarment.** The breach of the contract clauses in 29 C.F.R. § 5.5 may be grounds for termination of the contract, and for debarment as a Contractor and a subcontractor as provided in 29 C.F.R. § 5.12.

(h) **Compliance with Davis-Bacon and Related Act Requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 C.F.R. parts 1, 3, and 5 are herein incorporated by reference in this contract.

(i) **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 C.F.R. parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and EDA or its designee, the U.S. Department of Labor, or the employees or their representatives.

(j) **Certification of Eligibility.**

(1) By entering into this Contract, the Contractor certifies that neither it nor any person or firm that 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 C.F.R. § 5.12(a)(1).

(2) 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 C.F.R. § 5.12(a)(1).

(3) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. § 1001.

16. **LABOR STANDARDS - CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

As used in this paragraph, the terms “laborers” and “mechanics” include watchmen and guards.

(a) **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 such laborer or mechanic in any workweek in which that person is employed on such work to work in excess of forty 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 forty hours in such workweek.

(b) **Violation; liability for unpaid wages, liquidated damages.** In the event of any violation of the clause set forth in paragraph (a) of this section, 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 violation of the clause set forth in paragraph (a) of this section, 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 forty hours without payment of the overtime wages required by the clause set forth in paragraph (a) of this section.

(c) **Withholding for unpaid wages and liquidated damages.** EDA 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 monies payable on account of work performed by the Contractor or subcontractor under any such Contract or any other federal contract with the same prime Contractor, 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 paragraph (b) of this section.

(d) **Subcontracts.** The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (a) through (c) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a) through (c) of this section.

17. **EQUAL EMPLOYMENT OPPORTUNITY**

(a) The Recipient hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 C.F.R. chapter 60, which is paid for in whole or in part with funds obtained from EDA, the following equal opportunity clause:

During the performance of this contract, the Contractor agrees as follows:

Economic Development Administration  
Contracting Provisions for Construction Projects

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, 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 agrees to post in conspicuous places available to employees and applicants for employment notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers representatives of the Contractor's commitments hereunder, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) 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 Secretary of Labor.

(6) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by EDA and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the Contractor's noncompliance with the nondiscrimination clauses of



this Contract or with any of the said 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 Government contracts or federally-assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or as otherwise provided by law.

(8) The Contractor will include the portion of the sentence immediately preceding paragraph 17(a)(1) and the provisions of paragraphs 17(a)(1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor 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 take such action with respect to any subcontract or purchase order as EDA or the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event the Contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by EDA or the Secretary of Labor, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

(9) The Recipient further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally-assisted construction work. Provided, however, that if the Recipient so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality, or subdivision of such government that does not participate in work on or under the Contract.

(10) The Recipient agrees that it will assist and cooperate actively with EDA and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish EDA and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist EDA in the discharge of the EDA's primary responsibility for securing compliance.

(11) The Recipient further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a Contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by EDA or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the Recipient agrees that if it fails or refuses to comply with these undertakings, EDA may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this EDA financial assistance; refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case

to the Department of Justice for appropriate legal proceedings.

(b) Exemptions to Above Equal Opportunity Clause (41 C.F.R. chapter 60):

(1) Contracts and subcontracts not exceeding \$10,000 (other than Government bills of lading, and other than contracts and subcontracts with depositories of Federal funds in any amount and with financial institutions which are issuing and paying agents for U.S. savings bonds and savings notes) are exempt. The amount of the Contract, rather than the amount of the federal financial assistance, shall govern in determining the applicability of this exemption.

(2) Except in the case of subcontractors for the performance of construction work at the site of construction, the clause shall not be required to be inserted in subcontracts below the second tier.

(3) Contracts and subcontracts not exceeding \$10,000 for standard commercial supplies or raw materials are exempt.

18. **CONTRACTING WITH SMALL, MINORITY AND WOMEN'S BUSINESSES**

(a) If the Contractor intends to let any subcontracts for a portion of the work, the Contractor shall take affirmative steps to assure that small, minority and women's businesses are used when possible as sources of supplies, equipment, construction, and services.

(b) Affirmative steps shall consist of:

(1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(2) Ensuring that small and minority businesses and women's business enterprises are solicited whenever they are potential sources;

(3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises;

(4) Establishing delivery schedules, where the requirements of the contract permit, which encourage participation by small and minority businesses and women's business enterprises;

(5) Using the services and assistance of the U.S. Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, and State and local governmental small business agencies;

(6) Requiring each party to a subcontract to take the affirmative steps of this section; and

(7) The Contractor is encouraged to procure goods and services from labor surplus area firms.

19. **HEALTH, SAFETY, AND ACCIDENT PREVENTION**

(a) In performing this contract, the Contractor shall:

(1) Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to their health and/or safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation;

(2) Protect the lives, health, and safety of other persons;

(3) Prevent damage to property, materials, supplies, and equipment; and

(4) Avoid work interruptions.

(b) For these purposes, the Contractor shall:

(1) Comply with regulations and standards issued by the Secretary of Labor at 29 C.F.R. part 1926. Failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 3701 – 3708); and

(2) Include the terms of this clause in every subcontract so that such terms will be binding on each subcontractor.

(c) The Contractor shall maintain an accurate record of exposure data on all accidents incident to work performed under this Contract resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by 29 C.F.R. part 1904.

(d) The Owner shall notify the Contractor of any noncompliance with these requirements and of the corrective action required. This notice, when delivered to the Contractor or the Contractor's representative at the site of the Work, shall be deemed sufficient notice of the noncompliance and corrective action required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to take corrective action promptly, the Owner may issue an order stopping all or part of the Work until satisfactory corrective action has been taken. The Contractor shall not base any claim or request for equitable adjustment for additional time or money on any stop order issued under these circumstances.

(e) The Contractor shall be responsible for its subcontractors' compliance with the provisions of this clause. The Contractor shall take such action with respect to any subcontract as EDA, or the Secretary of Labor shall direct as a means of enforcing such provisions.

20. **CONFLICT OF INTEREST AND OTHER PROHIBITED INTERESTS**

- (a) No official of the Owner who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept, or approve, or to take part in negotiating, making, accepting, or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the Project, shall become directly or indirectly interested personally in this Contract or in any part hereof.
- (b) No officer, employee, architect, attorney, engineer, or inspector of or for the Owner who is authorized in such capacity and on behalf of the Owner to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the Project, shall become directly or indirectly interested personally in this Contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the Project.
- (c) The Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the Contract Documents has a corporate or financial affiliation with the supplier or manufacturer.
- (d) The Owner's officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, may be involved. Such a conflict may arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest in the Contractor. The Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors, or anything of monetary value from the Contractor or subcontractors.
- (e) If the Owner finds after a notice and hearing that the Contractor, or any of the Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of the Owner or EDA in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, the Owner may, by written notice to the Contractor, terminate this Contract. The Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which the Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.
- (f) In the event this Contract is terminated as provided in paragraph (e) of this section, the Owner may pursue the same remedies against the Contractor as it could pursue in the event of a breach of this Contract by the Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, the Owner may pursue exemplary damages in an amount (as determined by the Owner) which shall not be less than three nor more than ten times the costs the Contractor incurs in providing any such gratuities to any such officer or employee.

## 21. RESTRICTIONS ON LOBBYING

(a) This Contract, or subcontract is subject to 31 U.S.C. § 1352, regarding lobbying restrictions. The section is explained in the common rule, 15 C.F.R. part 28 (55 FR 6736-6748, February 26, 1990). Each bidder under this Contract or subcontract is generally prohibited from using federal funds for lobbying the Executive or Legislative Branches of the Federal Government in connection with this EDA Award.

(b) **Contract Clause Threshold:** This Contract Clause regarding lobbying must be included in each bid for a contract or subcontract exceeding \$100,000 of federal funds at any tier under the EDA Award.

(c) **Certification and Disclosure:** Each bidder of a contract or subcontract exceeding \$100,000 of federal funds at any tier under the federal Award must file Form CD-512, *Certification Regarding Lobbying – Lower Tier Covered Transactions*, and, if applicable, Standard Form-LLL, *Disclosure of Lobbying Activities*, regarding the use of any nonfederal funds for lobbying. Certifications shall be retained by the Contractor or subcontractor at the next higher tier. All disclosure forms, however, shall be forwarded from tier to tier until received by the Recipient of the EDA Award, who shall forward all disclosure forms to EDA.

(d) **Continuing Disclosure Requirement:** Each Contractor or subcontractor that is subject to the Certification and Disclosure provision of this Contract Clause is required to file a disclosure form at the end of each calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed by such person. Disclosure forms shall be forwarded from tier to tier until received by the Recipient of the EDA Award, who shall forward all disclosure forms to EDA.

(e) **Indian Tribes, Tribal Organizations, or Other Indian Organizations:** Indian tribes, tribal organizations, or any other Indian organizations, including Alaskan Native organizations, are excluded from the above lobbying restrictions and reporting requirements, but only with respect to expenditures that are by such tribes or organizations for lobbying activities permitted by other federal law. An Indian tribe or organization that is seeking an exclusion from Certification and Disclosure requirements must provide EDA with the citation of the provision or provisions of federal law upon which it relies to conduct lobbying activities that would otherwise be subject to the prohibitions in and to the Certification and Disclosure requirements of 31 U.S.C. § 1352, preferably through an attorney's opinion. Note, also, that a non-Indian subrecipient, contractor, or subcontractor under an award to an Indian tribe, for example, is subject to the restrictions and reporting requirements.

## 22. HISTORICAL AND ARCHAEOLOGICAL DATA PRESERVATION

The Contractor agrees to facilitate the preservation and enhancement of structures and objects of historical, architectural or archaeological significance and when such items are found and/or unearthed during the course of project construction. Any excavation by the Contractor that uncovers an historical or archaeological artifact shall be immediately reported to the Owner and a representative of EDA. Construction shall be temporarily halted pending the notification process and further directions issued by EDA after consultation with the State Historic

Preservation Officer (SHPO) for recovery of the items. *See* the National Historic Preservation Act of 1966 (54 U.S.C. § 300101 *et seq.*, formerly at 16 U.S.C. § 470 *et seq.*) and Executive Order No. 11593 of May 31, 1971.

23. **CLEAN AIR AND WATER**

Applicable to Contracts in Excess of \$150,000

(a) **Definition.** “Facility” means any building, plant, installation, structure, mine, vessel, or other floating craft, location, or site of operations, owned, leased, or supervised by the Contractor or any subcontractor, used in the performance of the Contract or any subcontract. When a location or site of operations includes more than one building, plant, installation, or structure, the entire location or site shall be deemed a facility except when the Administrator, or a designee, of the United States Environmental Protection Agency (EPA) determines that independent facilities are collocated in one geographical area.

(b) In compliance with regulations issued by the EPA, 2 C.F.R. part 1532, pursuant to the Clean Air Act, as amended (42 U.S.C. § 7401 *et seq.*); the Federal Water Pollution Control Act, as amended (33 U.S.C. § 1251 *et seq.*); and Executive Order 11738, the Contractor agrees to:

(1) Not utilize any facility in the performance of this contract or any subcontract which is listed on the Excluded Parties List System, part of the System for Award Management (SAM), pursuant to 2 C.F.R. part 1532 for the duration of time that the facility remains on the list;

(2) Promptly notify the Owner if a facility the Contractor intends to use in the performance of this contract is on the Excluded Parties List System or the Contractor knows that it has been recommended to be placed on the List;

(3) Comply with all requirements of the Clean Air Act and the Federal Water Pollution Control Act, including the requirements of section 114 of the Clean Air Act and section 308 of the Federal Water Pollution Control Act, and all applicable clean air and clean water standards; and

(4) Include or cause to be included the provisions of this clause in every subcontract and take such action as EDA may direct as a means of enforcing such provisions.

24. **USE OF LEAD-BASED PAINTS ON RESIDENTIAL STRUCTURES**

(a) If the work under this Contract involves construction or rehabilitation of residential structures over \$5,000, the Contractor shall comply with the Lead-based Paint Poisoning Prevention Act (42 U.S.C. § 4831). The Contractor shall assure that paint or other surface coatings used in a residential property does not contain lead equal to or in excess of 1.0 milligram per square centimeter or 0.5 percent by weight or 5,000 parts per million (ppm) by weight. For purposes of this section, “residential property” means a dwelling unit, common areas, building exterior surfaces, and any surrounding land, including outbuildings, fences and play equipment affixed to the land, belonging to an owner and available for use by residents, but not

including land used for agricultural, commercial, industrial or other non-residential purposes, and not including paint on the pavement of parking lots, garages, or roadways.

- (b) As a condition to receiving assistance under PWEDA, recipients shall assure that the restriction against the use of lead-based paint is included in all contracts and subcontracts involving the use of federal funds.

25. **ENERGY EFFICIENCY**

The Contractor shall comply with all standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. § 6201) for the State in which the Work under the Contract is performed.

26. **ENVIRONMENTAL REQUIREMENTS**

When constructing a Project involving trenching and/or other related earth excavations, the Contractor shall comply with the following environmental constraints:

- (1) **Wetlands.** When disposing of excess, spoil, or other construction materials on public or private property, the Contractor shall not fill in or otherwise convert wetlands.
- (2) **Floodplains.** When disposing of excess, spoil, or other construction materials on public or private property, the Contractor shall not fill in or otherwise convert 100 year floodplain areas delineated on the latest Federal Emergency Management Agency (FEMA) Floodplain Maps, or other appropriate maps, i.e., alluvial soils on Natural Resource Conservation Service (NRCS) Soil Survey Maps.
- (3) **Endangered Species.** The Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of the Contractor, the Contractor will immediately report this evidence to the Owner and a representative of EDA. Construction shall be temporarily halted pending the notification process and further directions issued by EDA after consultation with the U.S. Fish and Wildlife Service.

27. **DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSIONS**

As required by Executive Orders 12549 and 12689, *Debarment and Suspension*, 2 C.F.R. Part 180 and implemented by the Department of Commerce at 2 C.F.R. part 1326, for prospective participants in lower tier covered transactions (except subcontracts for goods or services under the \$25,000 small purchase threshold unless the subrecipient will have a critical influence on or substantive control over the award), the Contractor agrees that:

- (1) By entering into this Contract, the Contractor and subcontractors certify, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared Economic Development Administration Contracting Provisions for Construction Projects

ineligible, or voluntarily excluded from participation in this Contract by any federal department or agency.

(2) Where the Contractor or subcontractors are unable to certify to any of the statements in this certification, the Contractor or subcontractors shall attach an explanation to this bid.

*See also 2 C.F.R. part 180 and 2 C.F.R. § 200.342.*

28. **EDA PROJECT SIGN**

The Contractor shall supply, erect, and maintain in good condition a Project sign according to the specifications provided by EDA. To the extent practical, the sign should be a free standing sign. Project signs shall not be located on public highway rights-of-way. Location and height of signs will be coordinated with the local agency responsible for highway or street safety in the Project area, if any possibility exists for obstructing vehicular traffic line of sight. Whenever the EDA site sign specifications conflict with State law or local ordinances, the EDA Regional Director will permit such conflicting specifications to be modified so as to comply with State law or local ordinance.

29. **BUY AMERICA**

To the greatest extent practicable, contractors are encouraged to purchase American-made equipment and products with funding provided under EDA financial assistance awards.



## EDA PROJECT SIGN

The Contractor shall supply, erect, and maintain in good condition a project sign according to the specifications set forth below:

### EDA SITE SIGN SPECIFICATIONS

Size: 4' x 8' x ¾"

Materials: Exterior grade/MDO plywood (APA rating A-B)

Supports: 4" x 4" x 12' posts with 2" x 4" cross branching

Erection: Posts shall be set a minimum of three feet deep in concrete footings that are at least 12" in diameter.

Paint: Outdoor enamel

Colors: Jet Black, Blue (PMS300), and Gold (PMS7406). Specifically, on white background the following will be placed:

The U. S. Department of Commerce seal in blue, black, and gold;

“EDA” in blue;

“U. S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT

ADMINISTRATION” in black;

“In partnership with” in blue;

(Actual name of the) “EDA Grant Recipient” in black;

Lettering: Specific fonts are named below; positioning will be as shown on the attached illustration.

“U. S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT  
ADMINISTRATION” use Bank Gothic Medium - **BANK GOTHIC MED**

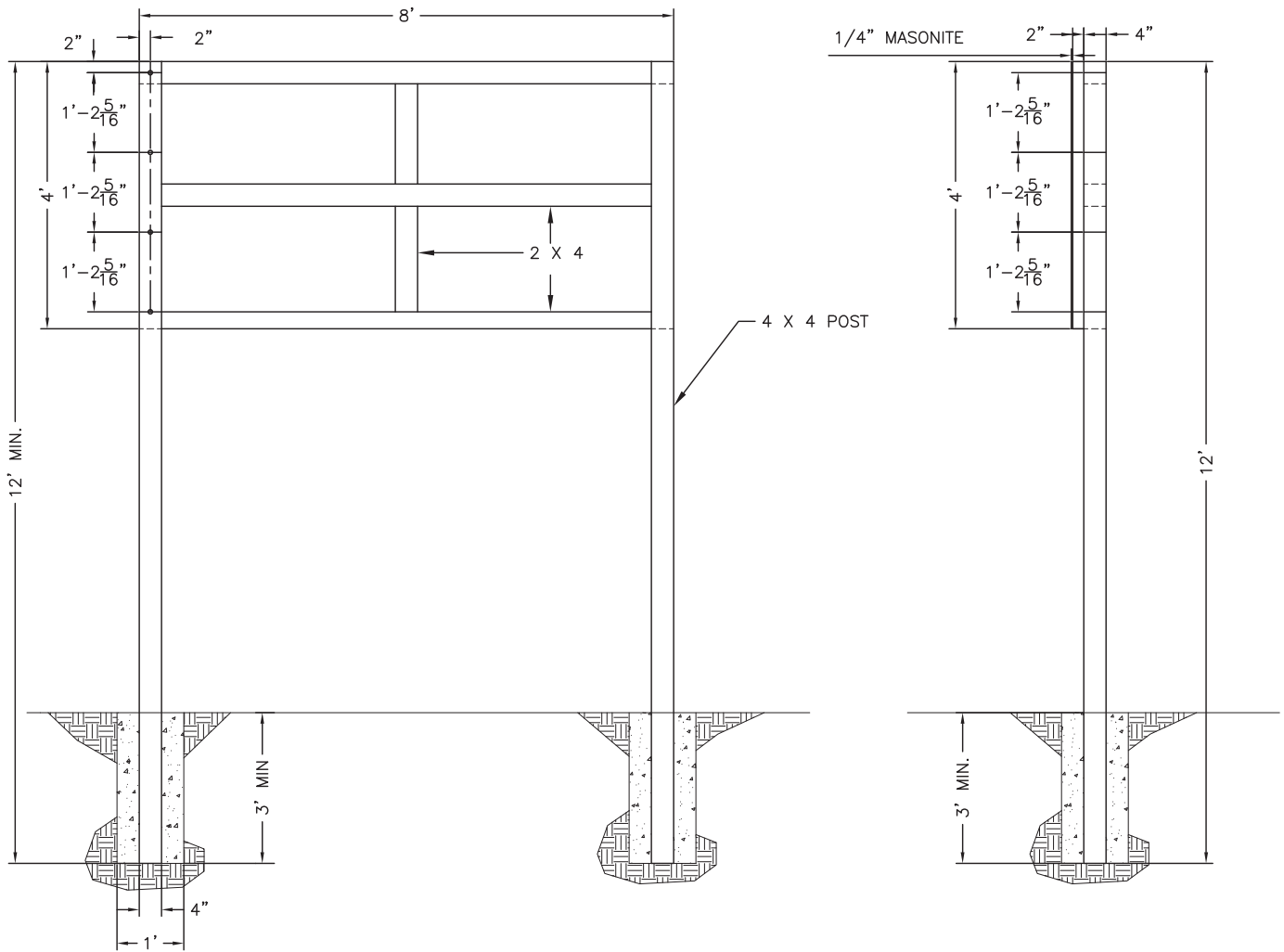
“In partnership with” use Univers™ 55 Oblique - **Univers 55**

(Name of) “EDA Grant Recipient” use Univers™ Extra Black 85 **Univers 85**

Project signs will not be erected on public highway rights-of-way. If any possibility exists for obstruction to traffic line of sight, the location and height of the sign will be coordinated with the agency responsible for highway or street safety in the area.

The EDA Regional Director may permit modifications to these specifications if they conflict with state law or local ordinances.



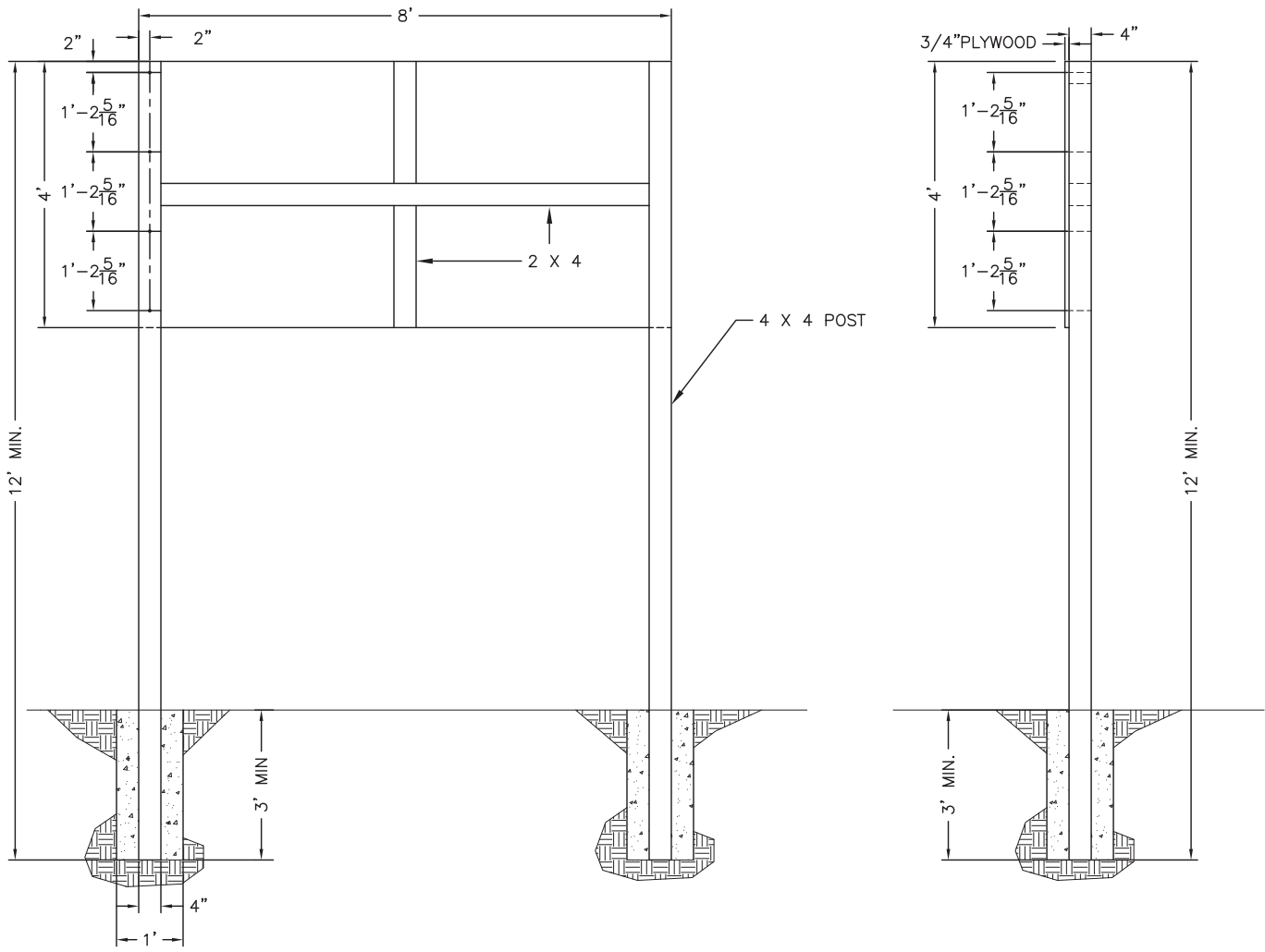


SIGN A  
MASONITE SIGN  
SCALE: 3/8" = 1'

PROJECT - SIGN A

ECONOMIC DEVELOPMENT ADMINISTRATION

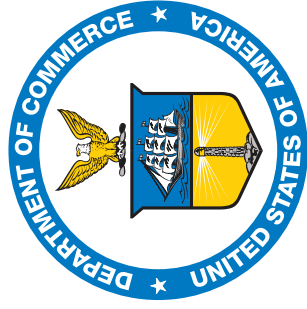




SIGN B  
PLYWOOD SIGN  
SCALE: 3/8" = 1'

PROJECT - SIGN B
ECONOMIC DEVELOPMENT ADMINISTRATION





# EDA

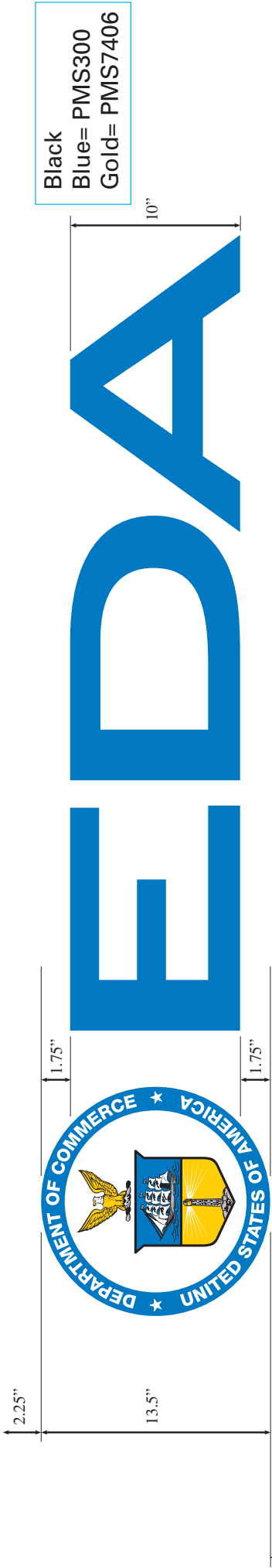
U.S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT ADMINISTRATION

*In partnership with*

**<EDA Grant Recipient Name>**







Black  
 Blue= PMS300  
 Gold= PMS7406

U.S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT ADMINISTRATION

*In partnership with*

**Recipient Name**

*Joseph R. Biden, Jr., President of the United States*



## **Manatee Guidelines for South Carolina**

To reduce potential construction-related impacts to the manatee to discountable and insignificant levels, the Service recommends implementing the following *Standard Manatee Construction Conditions* to all projects affecting the coastal waters of South Carolina.

The permittee will comply with the following construction conditions for manatee protection:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel **must** monitor water-related activities for the presence of manatee(s) during May 1 - November 15. Construction personnel are requested to monitor outside of that timeframe as manatees may be in the area before or after the above dates.
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.
- c. Any siltation barriers used during the project shall be made of material in which manatees cannot become entangled and must be properly secured, and regularly monitored to avoid manatee entrapment.
- d. All vessels associated with the project shall operate at “no wake/idle” speeds at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- e. If manatee(s) are seen within 100 yards of the active construction area all appropriate precautions shall be implemented to ensure protection of the manatee. These precautions shall include the operation of all moving equipment no closer than 50 feet to a manatee. Operation of any equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment. Activities will not resume until the manatee(s) has departed the project area of its own volition.
- f. The permittee understands and agrees that all in-water lines (rope, chain, and cable, including the lines to secure turbidity curtains) must be stiff, taut, and non-looping. Examples of such lines are heavy metal chains or heavy cables that do not readily loop and tangle. Flexible in-water lines, such as nylon rope or any lines that could loop or tangle, must be enclosed in a plastic or rubber sleeve/tube to add rigidity and prevent the line from looping and tangling. In all instances, no excess line is allowed in the water. Where appropriate in water wires, cables,

Updated: September 17, 2019

should be fitted with PVC sleeve from the surface to the bottom to prevent any potential scraping of the passing manatees.

- g. Any collision with and/or injury to a manatee shall be reported immediately to the U.S. Fish and Wildlife Service contacts: Melanie Olds, South Carolina Manatee Lead, Charleston Field Office, at 843-727-4707 ext. 205; or Terri Calleson, Manatee Recovery Coordinator, North Florida Field Office, at 904-731-3286.



October 24, 2022

Mr. Orlando Arteaga  
City of Georgetown  
PO Box 939  
Georgetown, SC 29440

**RE: Stormwater System Improvements – Historic District – Project #4015  
EDA Investment No. 04-79-07494  
Manatee Guidelines for South Carolina**

Dear Mr. Arteaga:

The construction contract documents (plans and specifications) for the above referenced project include the Manatee Guidelines for South Carolina (September 17, 2019, version). They have been incorporated into the Supplementary Conditions of the Specifications.

This project has two outfalls for the Front Street Stormwater System (Plan Sheets C1.2 and C1.5). Tide gates (check valves) will be installed on the two Front Street outfalls that are above the Mean Low Water elevation and only become partially or fully submerged as the tide approaches the Mean High-Water elevation. As the two outfalls are temporarily submerged (based on the tides) and the tide gates partially open only when water is exiting the system (tide gates are normally closed), there is a very low likelihood of manatee entry into the Front Street Stormwater System.

This project has one outfall to a ditch that runs out into the marsh for the Orange Street Stormwater System (Plan Sheets C2.3). The Orange Street outfall is higher and only becomes partially submerged (approx. one foot above invert elevation) at Mean High Water elevation. The Orange Street outfall is also located in an existing ditch that is tidal, and not open water. The likelihood of a manatee entering the Orange Street outfall is extremely low.

Mr. Orlando Arteaga

October 24, 2022

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Upon considering the migration patterns for the West Indian Manatee and design of the stormwater systems as presented, we find the likelihood of manatee entry to be extremely low and recommend that no further barriers be installed.

Please let us know if you'd like to discuss further or if we can provide additional information.

Sincerely,

W.K. Dickson & Co., Inc.

A handwritten signature in blue ink that reads "James C. Reigart". The signature is written in a cursive style with a large initial 'J'.

James C. Reigart, PE

Senior Project Manager

Enclosure

**SECTION 00 90 00**

**DRAWING INDEX**

Sheet No.	SHEET TITLE
C1.0	<b>Division I - Front Street - Location Map</b>
C1.1	Division I - Front Street - Existing Conditions and Demo Plan
C1.2	Division I - Front Street - Line A & D Plan & Profile
C1.3	Division I - Front Street - Line A & D Plan & Profile
C1.4	Division I - Front Street - Line B & C Profiles
C1.5	Division I - Front Street - Line E Plan & Profiles
C2.0	<b>Division II - Orange Street - Location Map</b>
C2.1	Division II - Orange Street - Existing Conditions and Demo Plans
C2.2	Division II - Orange Street - Existing Conditions and Demo Plans
C2.3	Division II - Orange Street - Line A - 1 of 3
C2.4	Division II - Orange Street - Line A - 2 of 3
C2.5	Division II - Orange Street - Line A - 3 of 3
C2.6	Division II - Orange Street - Line C - Plan and Profile
C2.7	Division II - Orange Street - Line A Laterals - Profiles
C2.8	Division II - Orange Street - Line B and Laterals - Profiles
C3.0	<b>Phase III - Queen Street - Location Map</b>
C3.1	Phase III - Queen Street - Existing Conditions and Demo Plan
C3.2	Phase III - Queen Street - Lines A, A1L, A1R, A2L, and A2R
C3.3	Phase III - Queen Street - Lines A, A3L, A3R, and A4
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D1.0	Erosion and Sediment Control Details - 1 of 3
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D3.0	Erosion and Sediment Control Details - 3 of 3
D4.0	SCDOT Standards - Catch Basin Type 1
D5.0	SCDOT Standards – Circular Catch Basin and Drop Inlet
D6.0	SCDOT Standards - Junction Boxes
D7.0	SCDOT Standards - Manhole and Junction Boxes
D8.0	SCDOT Standards – Catch Basin Type 9
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D12.0	SCDOT Standards - Pipe Collar & Headwall
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00 90 00-1

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*(END OF SECTION)*



SECTION 01 04 60  
CONTROL OF WORK AND MATERIALS

PART 1 GENERAL (NOT APPLICABLE)

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.01 HAULING, HANDLING AND STORAGE OF MATERIALS:

- A. The Contractor shall, at its own expense, handle and haul all materials furnished by it and shall remove any of its surplus materials at the completion of the work.
- B. The Contractor shall provide suitable and adequate storage for equipment and materials furnished by it that are liable to injury and shall be responsible for any loss of or damage to any equipment or materials by theft, breakage, or otherwise.
- C. All excavated materials and equipment to be incorporated in the Work shall be placed so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the work. Materials and equipment shall be kept neatly piled and compactly stored in such location as will cause a minimum of inconvenience to public travel and adjoining owners, tenants and occupants.
- D. The Contractor shall be responsible for all damages to the work under construction during its progress and until final completion and acceptance even though partial payments have been made under the Contract.

3.02 EASEMENTS AND ENCROACHMENTS:

- A. As indicated on the drawings, the work is located on property owned by the Owner.
- B. Contractor shall schedule work so that it will cause minimum inconvenience and nuisance to abutting property owners, over the shortest possible time.

3.03 OPEN EXCAVATIONS:

- A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons, and damage to property. The Contractor shall, at its own expense, provide suitable and safe means for completely covering all open excavations and for accommodating travel when work is not in progress.
- B. The length of open trench will be controlled by the particular surrounding conditions but shall always be confined to the limits prescribed by the Engineer.

3.04 CARE AND PROTECTION OF PROPERTY:

The Contractor shall be responsible for the preservation of all public and private property and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be promptly restored by the Contractor, at its expense, to a condition similar or equal to that existing before the damage was done, to the satisfaction of the Engineer.

3.05 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES:

- A. All existing buildings, utilities, pipes, poles, wires fences, curbing, property line markers and other structures which the Engineer decides must be preserved in place without being temporarily or permanently relocated, shall be carefully supported and protected from damage by the contractor. Should such property be damaged, it shall be restored by the Contractor, at no additional cost to the Owner.
- B. The Contractor shall determine the location of all underground structures and utilities (including existing water services, drain lines, electrical lines, and sewers). Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by Contractor.
- C. When fences interfere with the Contractor's operations, it shall remove and (unless otherwise specified) promptly restore them to a condition similar or equal to that existing before removal was done, to the satisfaction of the engineer.
- D. On paved surfaces the Contractor shall not use or operate tractors, bulldozers, or other power-operated equipment with treads or wheels which are shaped so as to cut or otherwise damage such surfaces.
- E. All property damaged by the Contractor's operations shall be restored to a condition at least equal to that in which it was found immediately before work was begun. Suitable materials and methods shall be used for such restoration.
- F. Restoration of existing property and structures shall be carried out as promptly as practicable and shall not be left until the end of the construction period.

3.06 MAINTENANCE OF FLOW:

- A. The Contractor shall at its own cost, provide for the flow of sewers and drains interrupted during the progress of the work, and shall immediately cart away and dispose of all offensive matter. The entire procedure of maintaining existing flow shall be fully discussed with the Engineer well in advance of the interruption of any flow.
- B. All existing drainage facilities including, but not limited to; brooks, streams, canals, channels, ditches, culverts, catch basins and drainage piping shall be adequately safeguarded so as not to impede drainage or to cause siltation of downstream areas in any manner whatsoever. If the Contractor damages or impairs any of the aforesaid drainage facilities, it shall repair the same within the same day.
- C. At the conclusion of the work, the Contractor shall remove all silt in drainage structures caused by its operations as described in Section 01710, CLEANING UP.

3.07 REJECTED MATERIALS AND DEFECTIVE WORK:

- A. Materials furnished by the Contractor and condemned by the Engineer as unsuitable or not in conformity with the specifications shall forthwith be removed from the work by the Contractor, and shall not be made use of elsewhere in the work.
- B. Any errors, defects or omissions in the execution of the work or in the materials furnished by the Contractor, even though they may have been passed or overlooked or have appeared after the completion of the work, discovered at any time before the final payment is made hereunder,

shall be forthwith rectified and made good by and at the expense of the Contractor and in a manner satisfactory to the Engineer.

- C. The Contractor shall reimburse the Owner for any expense, losses or damages incurred in consequence of any defect, error, omission or act of the Contractor or his employees, as determined by the Engineer, occurring previous to the final payment.

3.08 SANITARY REGULATIONS:

Sanitary conveniences for the use of all persons employed on the work, properly screened from public observation, shall be provided in sufficient numbers in such manner and at such locations as may be approved. The contents shall be removed and disposed of in a satisfactory manner as the occasion requires. The Contractor shall rigorously prohibit the committing of nuisances within, on or about the work. Any employees found violating these provisions shall be discharged and not again employed on the work without the written consent of the Engineer. The sanitary conveniences specified above shall be the obligation and responsibility of the Contractor.

3.09 SITE INVESTIGATION:

The Contractor acknowledges that it has satisfied itself as to the conditions existing at the site of the work, the type of equipment required to perform this work, the quality and quantity of the materials furnished insofar as this information is reasonably ascertainable from an inspection of the site, as well as from information presented by the drawings and specifications made a part of this contract. Any failure of the Contractor to acquaint itself with available information will not relieve it from the responsibility for estimating properly the difficulty or cost of successfully performing the work. The Owner assumes no responsibility for any conclusion or interpretation made by the Contractor on the basis of the information made available by the Owner.

END OF SECTION



SECTION 01 05 00  
FIELD ENGINEERING

PART 1 GENERAL

1.1 DESCRIPTION

- A. Work included: Provide such field engineering services as are required for proper completion of the Work including, but not necessarily limited to:
  - 1. Provide all staking required to construct the facility from coordinates established by the Engineer.
  - 2. Establish the proper line and levels for installation of utilities.
  - 3. Establish the proper grades and elevations for earthwork.
- B. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
  - 2. Additional requirements for field engineering also may be described in other Sections of these Specifications. These include but are not limited to the following:
- C. Work by others:
  - 1. Not less than one (1) benchmark elevation will be provided.

1.2 QUALITY ASSURANCE

- A. Provide a competent survey party and surveying instruments for staking the work.
- B. Exercise proper precautions to verify the figures shown on the Drawings prior to laying out any part of the Work.
  - 1. The Contractor will be held responsible for any errors therein that otherwise might have been avoided.
  - 2. Promptly inform the Engineer of any error or discrepancies discovered in the Drawings or Specifications in order that proper corrections may be made.

1.3 PROCEDURES:

- A. Locate and protect control points before starting work on the site.
- B. Preserve permanent reference points during progress of the Work.
- C. Do not change or relocate reference points or items of the Work without specific approval from the Engineer.
- D. Promptly advise the Engineer when a reference point is lost or destroyed or requires relocation because of other changes in the Work.

1.4 CONSTRUCTION LAYOUT:

- A. Perform calculations, and the set of marks and stakes necessary to ensure that the work conforms to the required lines, grades, and dimensions.
- B. Relate such layout to the coordinate grid system, elevation datum, and related survey control monuments and benchmarks identified on the drawings or elsewhere in the contract documents.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 01 06 00  
REGULATORY REQUIREMENTS

PART 1 GENERAL

The following requirements of Regulatory Agencies having an interest in this project are hereby made a part of this Contract.

- 1.1 The construction of the project, including the letting of the contracts in connection therewith, shall conform to the applicable requirements of State, territorial and local laws and ordinances to the extent that such requirements do not conflict with Federal laws and this subchapter.
- 1.2 South Carolina Sales Tax: All applicable South Carolina sales tax shall be to the account of the Contractors.
- 1.3 Use of chemicals: All chemicals used during the project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.
- 1.4 Safety and Health Regulations: 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 Hours and Safety Standards Act (PL 91-54)
- 1.5 The Contractor shall comply with Part V of the South Carolina Manual on Uniform Traffic Control Devices for Streets and Highways.
- 1.6 Inspection by Agencies: The representatives of the South Carolina Department of Health and Environmental Control, USDA Rural Development, Environmental Protection Agency, Department of Natural Resources and the Corps of Engineers shall have access to the work wherever it is, in preparation or in progress, and the Contractor shall provide proper facilities for such access and inspection.
- 1.7 Withholding for non-residents shall comply with the following:
  - A. Attention of non-residents Contractors is invited to Code Sections 12-8-540 and 12-8-550 as amended effective July 1, 1994, Section 49, Appropriations Bill, Part II.
  - B. If a non-resident Contractor is the successful bidder on this project, he/she shall be required to provide the Owner with an Affidavit (Form I-312, Nonresident Taxpayer Registration Affidavit Income Tax Withholding) affirming registration with the South Carolina Department of Revenue or the South Carolina Secretary of State's office. (Refer to attached form)
  - C. Forms to register for all taxes administered by the South Carolina Department of Revenue may be obtained by calling the License and Registration Section at (803) 737-4872 or writing to South Carolina Department of Revenue, Registration Unit, Columbia, South Carolina 29214-0140.
  - D. In the absence of an Affidavit being provided, withholding in the amount of two (2) percent of the contract price will be made by the Owner.

END OF SECTION

REGULATORY REQUIREMENTS

01 06 00 - 1





SECTION 01 06 10  
PERMITS AND RIGHTS-OF-WAY

PART 1 GENERAL

1.1 DESCRIPTION

- A. Work Included: This section established requirements pertaining to the securing and paying for licenses, building permits, right-of-way, etc. necessary for the construction of the project.
- B. Work Not Include: Owner will obtain and provide to the Contractor, as required, copies of the following:
  - 1. South Carolina Department of Health and Environmental Control - Permit to Construct Water/Wastewater Facilities
- C. Office of Ocean and Coastal Resource Management Certification
- D. Related Work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
  - 2. Additional requirements for field engineering also may be described in other Sections of these Specifications. These include but are not limited to the following:
    - a) None

1.2 SUBMITTALS

- A. Submit to the Engineer satisfactory evidence that all necessary licenses, building permits, etc., have been secured prior to commencing the work.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 BUSINESS LICENSE

- 3.1.1 Determine licenses necessary to perform the work at project location.
- 3.1.2 Obtain all necessary licenses at no permits required, whether of temporary or permanent nature.

3.2 BUILDING PERMITS

- 3.2.1 Secure and pay for all building permits required, whether temporary or permanent nature.

3.3 RIGHT-OF-WAY, EASEMENTS

(Not Used)

END OF SECTION

PERMITS AND RIGHT OF WAY

01 06 10 - 1



SECTION 01 09 00  
REFERENCED STANDARDS

PART 1 GENERAL

1.1 DESCRIPTION

- A. Throughout the Project Documents, reference is made to specifications and standards issued by nationally recognized professional and/or trade organizations:
1. These referenced standards are generally identified by abbreviating the name of the organization following with the specification/standard number.
  2. Unless specifically indicated otherwise, all references to standards refer to the latest edition available at the time of the bidding.

1.2 ABBREVIATIONS

- A. Wherever the following abbreviations are used in these Project Documents, they are to be construed the same as the respective expressions represented:

AASHTO American Association of State Highway and Transportation Officials

ACI American Concrete Institute

AISC American Institute of Steel Construction

ALS American Lumber Standards

ANSI American National Standards Institute, Inc

ASTM American Society for Testing and Materials

AWWA American Water Works Association

AWPA American Wood Preservers Association

AWS American Welding Society

FSS Federal Specifications and Standards

GSA General Services Administration

IBC International Building Code

NACE National Association of Corrosion Engineers

NFPA National Fire Protection Association

NSF Formerly: National Sanitary Foundation

OSHA Occupational Safety and Health Administration

SPIB Southern Pine Inspection Bureau

SSPC Steel Structures Painting Council

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

REFERENCED STANDARDS

01 09 00-1



SECTION 01 20 00  
CONTRACTOR/SUBCONTRACTOR QUALIFICATIONS

PART 1 GENERAL

The following information and completed forms may be requested by the Owner of the three lowest bidders. The request will be made within five (5) days following the bid opening. Requested data to be received by the Owner within five (5) days of the request. Failure to provide the data in this section, upon request, will subject bidder to disqualification.

1.1 DESCRIPTION

- A. Information submitted will be used by the Owner to determine the competency and ability of the Contractor/Subcontractor to perform the scheduled work in a manner deemed satisfactory to the Owner. The Owner's decision shall be final.
- B. Any Subcontractor used by the General Contractor whose portion of this project exceeds 10% of the total bid shall be required to provide the same information as the General Contractor.
- C. The Contractor/Subcontractor shall include with this section a detailed financial statement indicating the Contractor's/Subcontractor's financial resources. The information on that statement shall be certified by a Certified Public Accountant and shall be submitted on the Associated General Contractors of America from "Standard Questionnaires and Financial Statement for Bidders."
- D. The Contractor/Subcontractor shall certify by attaching his signature to this Section as provided that all information contained herein is complete and all statements and answers are accurate and true. Providing misinformation, incomplete information, inaccurate information, or failure to certify the information, will subject bidder to disqualification.

1.2 QUALIFICATIONS

- A. Complete the following (attach additional sheets as required):
  - 1. Name: \_\_\_\_\_
  - 2. Address: \_\_\_\_\_
  - 3. City, State, Zip: \_\_\_\_\_
  - 4. Principal: \_\_\_\_\_
- B. Number of years your firm has been in business: \_\_\_\_\_
- C. List and describe a minimum of five (5) previous projects of similar size and nature completed in the last five (5) years. (Attach additional sheets, if necessary):
  - 1. \_\_\_\_\_

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2. 

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3. 

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4. 

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5. 

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D. List Owner, contact and telephone number for each of the five (5) projects referenced above. (Attach additional sheets, if necessary):

1. 

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2. 

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3. \_\_\_\_\_  
\_\_\_\_\_  
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4. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

E. For the projects listed in Item C, list the original bid price, final construction costs, specified completion time, actual completion time and explanations for differences in costs and times as required. (Attach additional sheets, if necessary):

1. Original contract price: \_\_\_\_\_  
Final construction price: \_\_\_\_\_  
Specified completion time: \_\_\_\_\_  
Actual completion time: \_\_\_\_\_  
Explanation: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Original contract price: \_\_\_\_\_  
Final construction price: \_\_\_\_\_  
Specified completion time: \_\_\_\_\_  
Actual completion time: \_\_\_\_\_  
Explanation: \_\_\_\_\_

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3. Original contract price: \_\_\_\_\_  
Final construction price: \_\_\_\_\_  
Specified completion time: \_\_\_\_\_  
Actual completion time: \_\_\_\_\_  
Explanation: \_\_\_\_\_

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4. Original contract price: \_\_\_\_\_  
Final construction price: \_\_\_\_\_  
Specified completion time: \_\_\_\_\_  
Actual completion time: \_\_\_\_\_  
Explanation: \_\_\_\_\_

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5. Original contract price: \_\_\_\_\_  
Final construction price: \_\_\_\_\_  
Specified completion time: \_\_\_\_\_  
Actual completion time: \_\_\_\_\_  
Explanation: \_\_\_\_\_



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F. List the names, addresses and work of any portion of this project which will be subcontracted (more than 10% of the bid price). (Attach additional sheets, if necessary):

- 1. 

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- 2. 

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- 3. 

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- 4. 

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- 5. 

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G. List equipment owned that is available for this project:

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H. List equipment to be purchased, leased or rented to perform this work:

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I. List superintendent(s), foreman or others in charge who will be assigned to this project. Provide resumes and qualifications (insert sheets as required):

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J. List and describe current projects, current statues of job and estimate schedule of completion. (Attach additional sheets, if necessary):

- 1. 

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- 2. 

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3. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. \_\_\_\_\_  
\_\_\_\_\_

**K. List all projects involving litigation, arbitration and/or mediation in past five (5) years (Attach additional sheets, if necessary):**

1. Project Name: \_\_\_\_\_

Owner: \_\_\_\_\_

Engineer: \_\_\_\_\_

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

Explanation: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Result: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Project Name: \_\_\_\_\_

Owner: \_\_\_\_\_

Engineer: \_\_\_\_\_

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

Explanation: \_\_\_\_\_

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

Result: \_\_\_\_\_

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

3. Project Name: \_\_\_\_\_

Owner: \_\_\_\_\_

Engineer: \_\_\_\_\_

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

Explanation: \_\_\_\_\_

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

Result: \_\_\_\_\_

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

4. Project Name: \_\_\_\_\_

Owner: \_\_\_\_\_

Engineer: \_\_\_\_\_

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

Explanation: \_\_\_\_\_

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Result: \_\_\_\_\_

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5. Project Name: \_\_\_\_\_

Owner: \_\_\_\_\_

Engineer: \_\_\_\_\_

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

Explanation: \_\_\_\_\_

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Result: \_\_\_\_\_

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L. Attach rate schedule for equipment, labor, overhead and profit.

M. Additional information:

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I hereby certify that as a duly authorized representative of \_\_\_\_\_  
(bidder), the information provided is to the best of my knowledge accurate and that failure to provide  
accurate information will result in disqualification of my bid

(Seal)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name (Print)

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

Notary Public of \_\_\_\_\_ (State)

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

END OF SECTION

SECTION 01 21 00  
PRECONSTRUCTION CONFERENCE

PART 1 GENERAL

1.1 DESCRIPTION

- A. Work included: To help clarify construction contract administration procedures, the Engineer will conduct a Preconstruction Conference prior to start of the Work. Provide attendance by the designated personnel.
- B. Related work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE

- A. For those persons designated by the Contractor, his Subcontractors, and suppliers to attend the Preconstruction Conference, provide required authority to commit the entities they represent to solutions agreed upon in the Conference.

1.3 SUBMITTALS

- A. To the maximum extent practicable, advise the Engineer at least 24 hours in advance of the Conference as to items to be added to the agenda.
- B. The Engineer will compile minutes of the Conference, and will furnish one copy of the minutes to the Contractor and required copies to the Owner. The Contractor may make and distribute such other copies as he/she wishes.

1.4 PRECONSTRUCTION CONFERENCE

- A. The Conference is required and will be scheduled to be held within 30 working days after the Owner has determined the low bidder and may be held prior to issuance of the Notice to Proceed when required by regulatory agencies having jurisdiction. In any event, the Conference will be held prior to actual start of the work.
- B. Attendance:
  - 1. Provide attendance by authorized representatives of the Contractor and major subcontractors. The Engineer will advise other interested parties, including the Owner, and request their attendance.
- C. Minimum agenda: Data will be distributed and discussed on:
  - 1. Organizational arrangement of Contractor's forces and personnel and those of subcontractors, materials suppliers, and the Engineer.
  - 2. Channels and procedures for communication.
  - 3. Construction schedule, including sequence of critical work.
  - 4. Contract Documents, including distribution of required copies of Drawings and revisions.
  - 5. Processing of Shop Drawings and other data submitted to the Engineer for review.
  - 6. Processing of field decisions and Change Orders.
  - 7. Rules and regulations governing performance of Work.
  - 8. Procedures for security, quality control, housekeeping, and related matters.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION



SECTION 01 22 00  
PROJECT MEETINGS

PART 1 GENERAL

1.1 DESCRIPTION

- A. Work included: To enable orderly review during progress of the Project, and to provide for systematic discussion of problems, the Owner will conduct project meetings throughout the construction period.
- B. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
  - 2. The Contractor's relations with his subcontractors and materials suppliers, and discussions relative thereto, are the Contractor's responsibility and normally are not part of the project meetings content.

1.2 QUALITY ASSURANCE

- A. For those persons designated by the Contractor to attend and participate in project meetings, provide required authority to commit the Contractor to solutions agreed upon in the meetings.

1.3 SUBMITTALS

- A. Agenda items: To the maximum extent practicable, advise the Owner at least 48 hours in advance of project meetings regarding items to be added to the agenda.
- B. Minutes:
  - 1. The Owner will compile Minutes of each project meeting, and will furnish three copies to the Contractor and required copies to Engineer.
  - 2. Recipients of copies may make and distribute such other copies as they wish.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 MEETING SCHEDULE

- A. Project meetings will be held monthly.
- B. Coordinate as necessary to establish mutually acceptable schedule for meetings.

### 3.2 MEETING LOCATION

- A. The meeting will be held at the City of Georgetown – Water Utilities and Engineering Department.

2377 Anthuan Maybank Drive  
Georgetown, SC 29440

### 3.3 PROJECT MEETINGS

#### A. Attendance:

1. To the maximum extent practicable, assign the same person or persons to represent the Contractor at project meetings throughout progress of the Work.
2. Subcontractors, materials suppliers, and others may be invited to attend those project meetings in which their aspect of the Work is involved.

#### B. Minimum agenda:

1. Review, revise as necessary, and approve Minutes of previous meetings.
2. Review Safety Plan and any incidents since last meeting.
3. Review progress of the Work since last meeting, including status of submittals for approval.
4. Identify problems that impede planned progress.
5. Develop corrective measures and procedures to regain planned schedule.
6. Complete other current business.

### 3.4 Revision to Minutes:

- A. Unless published Minutes are challenged in writing prior to the next regularly scheduled progress meeting, they will be accepted as properly stating the activities and decisions of the meeting.
- B. Persons challenging published Minutes shall reproduce and distribute copies of the challenged to all Minutes.
- C. Challenge to Minutes shall be settled as priority portion of “old business” at the next regularly scheduled meeting.

END OF SECTION

SECTION 01 31 00  
CONSTRUCTION SCHEDULES

PART 1 GENERAL

1.1 DESCRIPTION

- A. Work included: To assure adequate planning and execution of the Work so that the Work is completed within the number of calendar days allowed in the Contract, and to assist the Engineer in appraising the reasonableness of the proposed schedule and in evaluating progress of Work, prepare and maintain the schedules and reports described in this Section.
- B. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
  - 2. Requirements for progress schedule: General Conditions.
  - 3. Construction period: Form of Agreement
- C. Definitions: "Day", as used throughout the Contract unless otherwise stated, means calendar day.

1.2 QUALITY ASSURANCE

- A. Employ a scheduler who is thoroughly trained and experienced in compiling construction schedule data, and in preparing and issuing periodic reports as required below.
- B. Perform data preparation, analysis, charting, and updating in accordance with standards approved by the Engineer.
- C. Reliance upon the approved schedule:
  - 1. The construction schedule as approved by the Engineer will be an integral part of the Contract and will establish interim completion dates for the various activities under the Contract.
  - 2. Should any activity not be completed within 15 days after the stated scheduled date, the Owner shall have the right to require the Contractor to expedite completion of the activity by whatever means the Owner deems appropriate and necessary, without additional compensation to the Contractor.
  - 3. Should any activity be 30 days or more behind schedule, the Owner shall have the right to perform the activity or have the activity performed by whatever method the Owner deems appropriate.
  - 4. Costs incurred by the Owner and by the Engineer in connection with expediting construction activity shall be reimbursed by the Contractor.
  - 5. It is expressly understood and agreed that failure by the Owner to exercise the option either to order the Contractor to expedite and activity or to expedite the activity by other means shall not be considered to set a precedent for any other activities.

1.3 SUBMITTALS

- A. Comply with pertinent provisions of Section 01 34 00.

- B. Preliminary analysis: Within 10 calendar days after the Contractor has received the Notice to Proceed, submit one reproducible copy and four prints of a preliminary construction schedule prepared in accordance with Part 3 of this Section.
- C. Construction schedule: Within 10 calendar days after the Contractor has received the Engineer's approval to revisions of a preliminary construction schedule, submit one reproducible copy and four prints of a construction schedule prepared in accordance with Part 3 of this Section.
- D. Periodic reports: On the first working day of each month following the submittal described in Paragraph 1.3.C above, submit four prints of the construction schedule updated as described in Part 3 of this Section.

## PART 2 PRODUCTS

### 2.1 CONSTRUCTION ANALYSIS

- A. Graphically show by bar chart the order and interdependence of all activities necessary to complete the work, and the sequence in which each activity is to be accomplished, as planned by the Contractor and his project field superintendent in coordination with all subcontractors whose work is shown on the diagram.
  - 1. Provide two-line bar chart; one for planned activity and one for actual completion.
- B. Include, but do not necessarily limit indicated activities to:
  - 1. Project mobilization.
  - 2. Submittal and approval of shop drawings and samples.
  - 3. Procurement of equipment and critical materials.
  - 4. Fabrication of special material and equipment, and its installation and testing.
  - 5. Final cleanup.
  - 6. Final inspecting and testing.
  - 7. All activities by the Engineer that affect progress, required dates for completion, or both, for all and each part of the Work.

## PART 3 EXECUTION

### 3.1 PRELIMINARY ANALYSIS

- A. Contents:
  - 1. Show all activities of the Contractor under this Work for the period between receipt of Notice to Proceed and submittal of construction schedule.
  - 2. Show the Contractor's general approach to remainder of the Work.
  - 3. Show cost of all activities scheduled for performance before submittal and approval of the construction schedule.

### 3.2 CONSTRUCTION SCHEDULE

- A. Provide a construction schedule incorporating all revisions from review of the preliminary analysis.

### 3.3 PERIODIC REPORTS

- A. Provide monthly updates of the approved construction schedule.
  - 1. Indicate “actual” progress for each activity on the bar chart.
  - 2. Provide written narrative summary of revisions causing delay in the program, and an explanation of correct actions taken or proposed.

### 3.4 REVISIONS

- A. Make periodic revisions to the schedule to incorporate delays, early completion, etc.
- B. Make only those revisions to approved construction schedule as are approved in advance by the Engineer.

END OF SECTION



SECTION 01 34 00  
SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 GENERAL

1.1 DESCRIPTION

- A. Work included: Make submittals required by the Contract Documents and revise and resubmit as necessary to establish compliance with the specified requirements.
- B. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to General Conditions, Supplementary Conditions and Sections in Division 1 of these specifications.
  - 2. Individual requirements for submittals also may be described in pertinent sections of these specifications.
- C. Work not included:
  - 1. Un-required submittals will not be reviewed by the Engineer.
  - 2. The Contractor may require his subcontractors to provide drawings, setting diagrams, and similar information to help coordinate the work, but such data shall remain between the Contractor and his subcontractors and will not be reviewed by the Engineer.

1.2 QUALITY ASSURANCE

- A. Coordination of submittals:
  - 1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
  - 2. Verify that each item and the submittal for it conform in all respects with the specified requirements.
  - 3. By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.
  - 4. Review and coordinate each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.
- B. Completeness of submittal:
  - 1. 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.
  - 2. Determine and verify all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
- C. "Or equal":
  - 1. Where the phrase "or equal" occurs in the Contract Documents, do not assume that the materials, equipment or methods will be considered as equal unless the item has been specifically so approved for this Work by the Engineer.

2. The decision of the Engineer shall be final.
- D. The Engineer shall assume that no shop drawing or related submittal comprises a variation unless the Contractor advises the Engineer otherwise in writing.

### 1.3 SUBMITTALS

- A. Within 10 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
  1. Schedule for submittals including specification section, type or submittal and submittal date.
  2. Construction schedule.
  3. Schedule of partial payment request.
- B. Make submittals of shop drawings, samples, substitution requests and other items in accordance with the provisions of this Section.

## PART 2 PRODUCTS

### 2.1 SHOP DRAWINGS

- A. Scale and measurements: Make shop drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the Work.
- B. Large prints (11" x 17" or larger):
  1. Submit shop drawings in the form of white copies.
  2. Blueprints will not be acceptable.
- C. Manufacturer's literature:
  1. Where contents of submitted literature from manufacturers include data not pertinent to the submittal, clearly show which portions of the contents are being submitted for review.
  2. Cross out or strikethrough all data not pertinent to the submittal.
- D. Number of copies:
  1. Product data: submit the number of copies which are required to be returned, plus three copies which will be retained by the Engineer.
  2. Shop drawings: submit the number of copies which are required to be returned, plus four copies which will be retained by the Engineer.
- E. Do not begin fabrication of equipment or materials prior to Engineer's approval of shop drawings.

### 2.2 VARIATIONS

- A. With each submittal, provide 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 Drawings 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.



- B. Provide an explanation of why the item(s) submitted are considered to be equal to the item(s) specified.
- C. Failure to submit a written notice will result in rejection of the submittal.

### 2.3 SAMPLES

- A. Provide sample or samples identical to the precise article proposed to be provided. Identify as described under "Identification of submittals" below.
  - 1. Unless otherwise specified, submit samples in the quantity, which is required to be returned, plus one which will be retained by the Engineer.
  - 2. By prearrangement in specific cases, a single sample may be submitted for review and, when approved, when installed in the work at a location agreed upon by the Engineer.

### 2.4 COLORS AND PATTERNS

- A. Unless the precise color and pattern is specifically called out in the Contract Documents, and whenever a choice of color or pattern is available to the specified products, submit accurate color and pattern charts to the Engineer for selection.

## PART 3 EXECUTION

### 3.1 CONTRACTOR'S REVIEW OF SUBMITTALS

- A. Before submitting a shop drawing or any related material, Contractor shall:
  - 1. Determine and verify all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto.
  - 2. Determine and verify the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the work.
  - 3. Review each such submission for conformance with the means, methods, techniques, sequences, and operations of construction, and safety precautions and programs incidental thereto, all of which are the sole responsibility of Contractor.
  - 4. Approve each such submission before submitting it.
  - 5. Stamp and sign each such submission before submitting it.
- B. Shop drawings and related materials shall be returned with comments provided that each submission has been specified and is stamped by the Contractor.
- C. Shop drawings or material not specified, or which have not been approved by the Contractor shall be returned without comment.
- D. Contractor is to utilize the following stamp on all shop drawing submittals:

This shop drawing has been reviewed by (Contractor) and approved with respect to the means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incidental thereto. (Contractor) also warrants that this shop drawing complies with contract documents and comprises no variations thereto.

By:

Date:

- E. 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 the General Conditions 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 the General Conditions.

### 3.2 IDENTIFICATION OF SUBMITTALS

- A. Consecutively number all submittals
  - 1. When material is resubmitted for any reason, transmit under a new letter of transmittal and with a new transmittal number.
  - 2. On re-submittals, cite the original submittal number for reference.
- B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.
- C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.
- D. Maintain an accurate submittal log for the duration of the work, showing current status of all submittals at all times. Make the submittal log available to the Engineer for his review upon request.

### 3.3 GROUPING OF SUBMITTALS

- A. Unless otherwise specified, make submittals in groups containing all associated items to assure that information is available for checking each item when it is received.
  - 1. Partial submittals may be rejected as not complying with the provisions of the Contract.
  - 2. The Contractor may be held liable for delays so occasioned.

### 3.4 TIMING OF SUBMITTALS

- A. Make submittals far enough in advance of scheduled dates for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and re-submittals, and for placing orders and securing delivery.
- B. In scheduling, allow at least twenty (20) days for review by the Engineer following his receipt of the submittal.

### 3.5 RESUBMITTAL SCHEDULE

- A. For submittals marked “Revise and Re-Submit”, “Submit Specified Item”, or “Rejected”, re-submittal shall be within ten (10) days of the review data shown on the Engineer’s shop drawing review stamp.

### 3.6 ENGINEER’S REVIEW

- A. Review by the Engineer does not relieve the Contractor from responsibility for errors which may exist in the submitted data.
- B. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer.
- C. 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 to the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
- D. 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.
- E. The review and approval of a separate item as such will not indicate approval of the assembly in which the items functions.
- F. Revisions:
  - 1. Make revisions required by the Engineer.
  - 2. If the Contractor considers any required revision to be a change, he/she shall so notify the Engineer as provided for in the General Conditions.
  - 3. Make only those revisions directed or approved by the Engineer.
- G. Submittals which have been reviewed and returned to the Contractor marked “Revise and Re-submit” or “Rejected” and which are re-submitted and not in an approvable state, will not be reviewed a third time unless payment for the third and any subsequent review is by the Contractor. The engineering costs for review shall be equal to the Engineer’s charges to the Owner under the terms of the Engineering Agreement with the owner.

END OF SECTION



SECTION 01 40 00  
QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 DESCRIPTION

- A. Work included: Provide workforce and equipment as are required for proper completion of the Work including, but not necessarily limited to:
  - 1. All work described in the Project Manual and Plans
  - 2. Additional work mutually agreed upon by the Owner and the Contractor
- B. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
  - 2. Additional requirements for quality requirements also may be described in other Sections of these Specifications. These include but are not limited to the following:
- C. Work by others:
  - 1. An inspection and testing agency, approved by the Owner, shall be retained by the Contractor to perform tests required by SCDOT as specified on plans and SCDOT Standard Specifications.
  - 2. The performance or lack of performance of such tests and inspections shall not be construed as granting relief from the requirements of these specifications or the other contract documents

1.2 QUALITY ASSURANCE

- A. The Contractor shall have a written Quality Control Program and Inspection Procedures document that shall provide details of how compliance with the requirements of these specifications and the shop and placement drawings shall be achieved.
- B. The Contractor shall use an adequate number of skilled personnel, who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specification requirements and the methods needed for the proper performance of the work of this Specification.
- C. The Contractor shall utilize equipment adequate in type, number, size and capacity to accomplish the work of this Specification in a safe and timely manner.
- D. The Owner reserves the right to make inspections at any time at the source of supply of materials, at the place of preparation of materials, and during execution of all work.

1.3 SUBMITTALS

- A. When required, an excavation Safety Plan shall be submitted for review and approval by the Engineer no less than 5 days before the scheduled date for start of excavation operations. The plan shall indicate the systems, methods, and techniques to be used to ensure that excavation sidewalls will be properly guarded to protect personnel, and existing facilities and structures in the vicinity of the work.

- B. When required, a Water Control Plan shall be submitted for review and approval no less than 5 days before the scheduled date for the start of earthwork operations. The plan shall indicate the methods and techniques to be used for control of water (both surface runoff and ground water) during Work.

#### 1.4 EXISTING SITE CONDITIONS

- A. Before starting work the Contractor shall thoroughly examine the site to ascertain conditions under which the work must be performed.
- B. The Contractor is responsible for familiarizing himself with the existing site conditions and be prepared to adequately care for and safeguard himself, his workers, and the Owner from damage.
- C. Existing Geotechnical Conditions if available, a copy of the report is included in the contract documents. The information contained in the report shall not be construed as a guarantee of the depth, extent, or character of materials actually present.
- D. Existing Utilities
  - 1. There now may exist in the construction area potable and non-potable water distribution systems, wastewater and stormwater collection systems, natural gas and electrical power distribution systems, telecommunication systems and other utilities.
  - 2. These utilities are both underground and overhead and their location, as shown on the plans, is approximate and is for information purposes only. In addition other utilities not shown on the plans may exist.
  - 3. The South Carolina Underground Utility Damage Prevention Act (S.C. Ann Code, 58-35-10, CT-SEQ, Supp. 1978) requires persons to ascertain the location of underground utilities, prior to excavation and demolition. The Act also requires such persons to give timely notice of intent to excavate or demolish prior to commencing such operations.

### PART 2 PRODUCTS (NOT APPLICABLE)

### PART 3 EXECUTION

#### 3.1 PRE-CONSTRUCTION EXAMINATION

- A. General
- B. Before starting work the Contractor shall thoroughly examine the site to ascertain conditions under which the work must be performed.
- C. Existing Facilities to Remain
- D. Take measures to protect existing facilities within the work area that are not designated for removal from being damaged by the work.
- E. Survey Monuments
  - 1. Locate and protect from damage any survey monuments within the work area. Properly relocate or witness any monument that must be disturbed by the work. After completion of the work, restore monument witnesses.

- F. Immediately notify Engineer of any discrepancies between the plans and the actual site conditions, or of any obstruction that will prevent or adversely affect the contractor's ability to complete the Work.

### 3.2 EXISTING OR COMPLETED UTILITIES

- A. Unless shown to be removed protect active utility lines shown on the drawings or otherwise made known to the Contractor.
- B. Use care in moving machinery and equipment over existing or newly installed pipes and utilities during construction so as not to cause damage to completed work.
- C. Do not use power-driven equipment to excavate closer than 2 feet from any existing utility or structure. For work immediately adjacent to, or for excavation exposing an existing utility or other structure, use manual or light equipment excavation methods until the obstruction is cleared.
- D. Support uncovered pipes and other existing work affected by the excavation until they are properly supported by backfill.
- E. Take the necessary precautions to maintain services provided by all active utility lines in the construction area. If service is interrupted as a result of the Work, immediately restore service by repairing the damaged utility.
- F. If during construction active utility lines not shown on the drawings or otherwise made known to the Contractor are encountered or if active utility lines will interfere with the work, immediately notify the Engineer

END OF SECTION





SECTION 01 50 00  
TEMPORARY FACILITIES

PART 1 GENERAL

1.1 DESCRIPTION

- A. Work included: Provide temporary facilities needed for the work including, but not necessarily limited to:
  - 1. Temporary utilities such as heat, water and electricity.
  - 2. Field office for the Contractor's personnel.
  - 3. Sanitary facilities.
- B. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to General Conditions, Supplementary Conditions and Sections in Division 1 of these specifications.
  - 2. Permanent installation and hookup of the various utility lines are described in other Sections.

1.2 PRODUCT HANDLING

- A. Maintain temporary facilities in proper and safe condition throughout progress of the work.

PART 2 PRODUCTS

2.1 UTILITIES

- A. Water:
  - 1. Provide necessary temporary piping and water supply and, upon completion of the work, remove such temporary facilities.
  - 2. The Owner shall provide water used in construction. The Contractor shall obtain a construction meter from the Owner.
- B. Electricity:
  - 1. Provide necessary temporary wiring and, upon completion of the work remove such temporary facility.
  - 2. Provide and pay for electricity used in construction.
- C. Heating: Provide and maintain heat necessary for proper conduction of operations needed in the work.

2.2 FACILITIES

- A. Sanitary facilities:
  - 1. Provide temporary sanitary facilities in the quantity required for use by all personnel.
  - 2. Maintain in a sanitary condition at all times.
- B. Strictly enforce their use.

2.3 PROJECT SIGNS

TEMPORARY FACILITIES

- A. If required provide and maintain a project information sign with following information
  - 1. Project Name
  - 2. Project Cost
  - 3. Anticipated Completion date
  - 4. Contractor
  - 5. Engineer
  - 6. Owner
  - 7. Members of City Council
- B. EMPLOYMENT SIGN
- C. SAFETY SIGN

### PART 3 EXECUTION

#### 3.1 MAINTENANCE AND REMOVAL

- A. Maintain temporary facilities and controls as long as needed for safe and proper completion of the work.
- B. Remove such temporary facilities and controls as rapidly as progress of the work will permit, or as directed by the Engineer.

END OF SECTION

SECTION 01 57 13  
EROSION AND SEDIMENTATION CONTROL  
(City Requirements – See Also Section 31 25 13)

PART 1 GENERAL

1.1 SCOPE

A. Submittals and Permits

1. Within 15 days after the date of the Notice to Proceed, the Contractor shall submit description, Drawings, and schedule for proposed temporary and permanent erosion and sedimentation controls to the Engineer. The description and Drawings shall be consistent with the Best Management Practices of the Erosion and Sediment Control Practices for Developing Areas, as published by the Erosion and Sediment Control Division of the South Carolina Land Resources Conservation Commission. All fines imposed for improper erosion and sedimentation control shall be paid by the Contractor. The Contractor shall obtain a copy of the South Carolina Department of Health and Environmental Control (DHEC) Office of Ocean and Coastal Resource Management (OCRM) Land Disturbance Permit from the Engineer. All fines imposed for improper erosion and sedimentation control shall be paid by the Contractor. A copy of the local soil erosion and sedimentation control ordinances is available from the Engineer.
2. Description and working drawings shall indicate controls which will ensure that storm water and drainage from the disturbed jobsite areas, which will be denuded, stripped or modified of its naturally existing or artificially established stabilization or protection against erosion, shall pass through some type of filter system before being discharged. These areas shall be kept sufficiently moist to control dust.
3. Submit a written plan for both temporary and permanent grassing. The plan shall include selection of species, dates and rates of application for seeding, fertilizer and mulching.
4. The schedule of values for lump sum Projects shall include separate costs for this work as well as maintenance costs.

B. Basic Principles

1. Conduct the earthwork and excavation activities in such a manner to fit the topography, soil type and condition.
2. Minimize the disturbed area and the duration of exposure to erosion elements.
3. Stabilize disturbed areas immediately.
4. Safely convey run off from the site to an outlet such that erosion will not be increased off site.
5. Retain sediment on site that was generated on site.

6. Minimize encroachment upon watercourses.

C. Implementation

1. The erosion and sedimentation control measures shown on the Drawings are minimal requirements. The Contractor's methods of operation may dictate additional erosion and sedimentation control measures not shown on the Drawings which shall be the Contractor's responsibility to determine and install said measures. The Contractor's failure to stabilize disturbed areas immediately following intermediate or final grading may dictate additional erosion and sedimentation control measures not shown on the Drawings which shall be the Contractor's responsibility to determine and install said measures.
  2. The Contractor shall notify the Engineer of any changes and/or additions to the erosion and sedimentation control plan necessary to accommodate the Contractor's methods of operation. No additional payment shall be made for erosion and sedimentation control measures made necessary by the Contractor's methods of operation.
  3. The Contractor shall be solely responsible for control of erosion within the Project site and prevention of sedimentation of any adjacent waterways.
  4. The Contractor shall install controls which will ensure that stormwater and drainage from the disturbed area of the Project site shall pass through some type of filter system before being discharged. The filter system must meet the requirements of the Best Management Practices of the Erosion and Sediment Control Practices for Developing Areas.
- D. Temporary Erosion and Sedimentation Control: In general, temporary erosion and sedimentation control procedures shall be directed toward:
1. Preventing soil erosion at the source.
  2. Preventing silt and sediment from entering any waterway if soil erosion cannot be prevented.
  3. Preventing silt and sediment from migrating downstream in the event it cannot be prevented from entering the waterway.
- E. Permanent Erosion Control: Permanent erosion control measures shall be implemented to prevent sedimentation of the waterways and to prevent erosion of the Project site.

1.2 QUALITY ASSURANCE

- A. General: Perform all work under this Section in accordance with all pertinent rules and regulations including, but not necessarily limited to, those stated herein and these Specifications.
- B. Conflicts: Where provisions of pertinent rules and regulations conflict with these Specifications, the more stringent provisions shall govern.

## PART 2 PRODUCTS

### 2.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL MATERIALS

#### A. Silt Fence

1. Silt fence shall be polymer type netting with a built in cord running throughout the top edge of the fabric. Posts shall be either steel or pressure treated fir, southern pine or hemlock and shall be spaced not more than six feet on center. Silt fence shall be provided with netting to provide reinforcing when necessary. Silt fence shall have an Equivalent Opening Size (EOS) of 40 to 100. Silt fence fabric shall have a maximum permeability of 40 gallons per minute per square foot.
2. Silt fence fabric shall be equal to Mirafi 100X, Amoco 1380 or Exxon GTF 100 Series.

B. Hay bales shall be clean, seedfree cereal hay type.

C. Netting shall be 1/2 inch, galvanized steel, chicken wire mesh.

D. Filter stone shall be coarse aggregate conforming to South Carolina Department of Highways and Public Transportation, Aggregate Number CR 14.

E. Concrete block shall be hollow, non load bearing type.

F. Plywood shall be 3/4 inch thick exterior type.

### 2.2 CONCRETE

A. Concrete shall have a compressive strength of not less than 3,000 psi, with not less than 5.5 bags of cement per cubic yard and a slump between 3 and 5 inches. Ready mixed concrete shall be mixed and transported in accordance with ASTM C 94. Reinforcing steel shall conform to the requirements of ASTM A 615, Grade 60.

B. Provide a concrete mix design for job mixed concrete for the Engineer's approval.

## PART 3 EXECUTION

### 3.1 GENERAL

A. Standards: Provide all materials and promptly take all actions necessary to achieve effective erosion and sedimentation control in accordance with the Best Management Practices of the Erosion and Sediment Control Practices for Developing Areas, local enforcing agency guidelines and these Specifications.

### 3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Temporary erosion and sedimentation control procedures should be initially directed toward preventing silt and sediment from entering the creeks. The preferred method is to provide an undisturbed natural buffer, extending a minimal 25 feet from the top of the

bank, to filter the run off. Should this buffer prove infeasible due to construction activities being too close to the creek, or if the amount of sediment overwhelms the buffer, the Contractor shall place silt fences to filter the run off and, if necessary, place permanent rip rap to stabilize the creek banks. When excavation activities disturb the previously stated preventative measures, or if they are not maintained, or whenever the construction activities cross the creeks, check dams shall be installed downstream and within 200 feet of the affected area.

- B. Silt dams, silt fences, traps, barriers, check dams, appurtenances and other temporary measures and devices shall be installed as indicated on the approved plans and working drawings, shall be maintained until no longer needed, and shall then be removed. Deteriorated hay bales and dislodged filter stone shall be replaced with new materials. Detention ponds, if constructed, shall be maintained in a condition ensuring that unfiltered water will not leave the pond.
- C. Where permanent grassing is not appropriate, and where the Contractor's temporary erosion and sedimentation control practices are inadequate, the Engineer may direct the Contractor to provide temporary vegetative cover with fast growing seedings. Such temporary vegetative cover shall be provided by the Contractor in compliance with the Best Management Practices of the Erosion and Sediment Control Practices for Developing Areas, specifically in the selection of species, planting dates and application rates for seedings, fertilizer and mulching with the exception that kudzu shall not be permitted.
- D. All erosion and sedimentation control devices, including check dams, shall be inspected by the Contractor at least weekly and after each rainfall occurrence and cleaned out and repaired by the Contractor as necessary.
- E. Temporary erosion and sedimentation control devices shall be installed and maintained from the initial land disturbance activity until the satisfactory completion and establishment of permanent erosion control measures. At that time, temporary devices shall be removed.

### 3.3 PERMANENT EROSION CONTROL

- A. Permanent erosion control shall include:
  - 1. Restoring the work site to its original contours, unless shown otherwise on the Drawings or directed by the Engineer.
  - 2. Permanent vegetative cover shall be performed in accordance with Article 3.4 of this Section.
  - 3. Permanent stabilization of steep slopes and creeks shall be performed in accordance with Article 3.5 of this Section.
- B. Permanent erosion control measures shall be implemented as soon as practical after the completion of pipe installation or land disturbance for each segment of the Project. In no event shall implementation be postponed when no further construction activities will impact that portion or segment of the Project. Partial payment requests may be withheld

for those portions of the Project not complying with this requirement.

### 3.4 GRASSING

#### A. General

1. All references to grassing, unless noted otherwise, shall relate to establishing permanent vegetative cover as specified herein for seeding, fertilizing, mulching, etc.
  2. When final grade has been established, all bare soil, unless otherwise required by the Contract Documents, shall be seeded, fertilized and mulched in an effort to restore to a protected condition. Critical areas shall be sodded as approved or directed by the Engineer.
  3. Specified permanent grassing shall be performed at the first appropriate season following establishment of final grading in each section of the site.
  4. Permanent grassing shall be of a perennial species.
- B. Replant grass removed or damaged in residential areas using the same variety of grass and at the first appropriate season. Where sod is removed or damaged, replant such areas using sod of the same species of grass at the first appropriate season. Outside of residential or landscaped areas, grass the entire area disturbed by the work on completion of work in any area. In all areas, promptly establish successful stands of grass.
- C. Grassing activities shall comply with the Best Management Practices of the Erosion and Sediment Control Practices for Developing Areas, specifically for the selection of species, with the exception that kudzu shall not be permitted, planting dates and application rates for seeding, fertilizer and mulching. Where permanent vegetative cover (grassing) cannot be immediately established (due to season or other circumstances) the Contractor shall provide temporary vegetative cover. The Contractor must return to the site (at the appropriate season) to install permanent vegetation in areas that have received temporary vegetative cover.

END OF SECTION





SECTION 01 64 00  
PRODUCT HANDLING

PART 1 GENERAL

1.1 DESCRIPTION

- A. Work included: Protect products scheduled for use in the work by means including, but not necessarily limited to, those described in this Section.
- B. Related work:
  - 1. Documents affecting work of this Section include, but are not necessarily limited to General Conditions, Supplementary Conditions and Sections in Division 1 of these specifications.
  - 2. Additional procedures also may be prescribed in other Sections of these specifications.

1.2 QUALITY ASSURANCE

- A. Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

1.3 MANUFACTURE'S RECOMMENDATIONS

- A. Except as otherwise approved by the Engineer, determine and comply with manufacture's recommendations on product handling, storage and protection.

1.4 PACKAGING

- A. Deliver products to the job site in their manufacturer's original container, with labels intact and legible.
  - 1. Maintain packaged materials with seals unbroken and labels intact until time of use.
  - 2. Promptly remove damaged material and unsuitable items from the job site and promptly replace with material meeting the specified requirements, at no additional cost to the Owner.
- B. The Engineer may reject as non-complying such material and products that do not bear identification satisfactory to the Engineer as to manufacture, grade, quality and other pertinent information.

1.5 PROTECTION OF MATERIAL AND WORK

- A. General:
  - 1. Carefully and properly protect all materials of every description, both before and after being used in the Work in accordance with manufacturer's recommendations.
  - 2. Provide any enclosing or special protection from weather deemed necessary by the Engineer at no additional cost to the Owner.
- B. Partial payments under the Contract will not relieve the Contractor from responsibility.
  - 1. When materials and work at the site that have been partially paid for are not adequately protected by the Contractor, such materials will be protected by the Owner at the expense of the Contractor and no further partial payment thereon will be made.

2. Maintain finished surfaces clean, unmarred, and suitably protected until accepted by the Owner.

#### 1.6 STORAGE

- A. Store all items of equipment, component parts, etc., in accordance with the manufacturer's recommendations or as may otherwise be necessary to prevent damage or deterioration of any sort.
- B. Electrical and control equipment:
  1. Store in a dry area protected from dust and humidity.
  2. Equipment can be protected by a weatherproof cover if shipped to the site no more than two (2) weeks prior to installation and energization.

#### 1.7 REPAIRS AND REPLACEMENTS

- A. In the event of damage, promptly make replacements and repairs to the approval of the Engineer and at no additional cost to the Owner.
- B. Additional time required to secure replacements and to make repairs will not be considered by the Engineer to justify an extension in the contract time or completion.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

PRODUCT HANDLING

01 64 00 - 2

SECTION 01 70 00  
CONTRACT CLOSEOUT

PART 1 GENERAL

1.1 DESCRIPTION

- A. Work included shall be providing compliance with the requirements of the General Conditions of these Specifications for administrative procedures in closing out the project work.
- B. Related work:
  - 1. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
  - 2. Other requirements for technical services are stated in other sections of these Specifications.
  - 3. Section 00 62 00 – Contractors Affidavit.
  - 4. Section 01 72 00 – Project Record Documents

1.2 SUBSTANTIAL COMPLETION

- A. The Contractor shall notify the Engineer that, in his/her opinion, the project is substantially complete. A written statement listing items complete shall be submitted.
- B. Upon receipt of the Contractor's notice, the Engineer shall make an observation to determine if substantial completion is provided.
- C. If, in the Engineer's opinion, the project is not substantially complete, a written notice to the Contractor shall follow outlining reasons and deficiencies in work that comprised the Engineer's decision. The Engineer's decision shall be final.

1.3 FINAL OBSERVATION

- A. The Engineer will make a final observation for the Contractor after all items noted in the substantial completion observation have been corrected. The Contractor shall notify the Engineer in writing when a final observation is needed. Incomplete and/or defective work shall be given to the Contractor by written notice.

1.4 RE-OBSERVATION

- A. Re-observation required due to failure by the Contractor to make previously noted corrections will be performed by the Engineer.
- B. Cost for such observations will be due to and payable by the Contractor at a rate equal to charges to the Owner for similar work.
- C. Re-observations will continue until the work is acceptable to the Engineer.

1.5 COMPLETION BY CONTRACTOR

- A. When the Engineer finds the Contractor's work acceptable, the Contractor shall be given such notice and should proceed with closeout submittals.
- B. Closeout submittals shall contain at least the following:
  - 1. Project record documents.
  - 2. Equipment operation and maintenance manuals and copies of start-up reports.

3. Warranties and bonds.
4. Spare parts and manuals.
5. Evidence of payment and release to liens per General Conditions.
6. Contractors Affidavit.

#### 1.6 FINAL PAYMENT

- A. Final payment to the Contractor will be made upon completion of previous items and others required by these specifications. A final statement shall be forwarded to the Engineer. The statement shall address:
  1. Previous change orders.
  2. Unit Prices.
  3. Deductions for uncorrected work.
  4. Deductions for liquidated damages.
  5. Deductions for re-testing work.
  6. Deductions for re-observation.
  7. Deductions for shop drawing review.
  8. Adjusted contract sum.
  9. Previous payments.
  10. Amount Due.
- B. When required, the Engineer will prepare a contract change order for adjustments not previously made.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 01 71 00  
CLEANING UP

PART 1 GENERAL

1.1 DESCRIPTION

The Contractor must employ at all times during the progress of its work adequate cleanup measures and safety precautions to prevent injuries to persons or damage to property. The Contractor shall immediately, upon request by the Engineer provide adequate material, equipment and labor to cleanup and make safe any and all areas deemed necessary by the Engineer.

1.2 RELATED WORK

- A. Section 00 70 00 GENERAL CONDITIONS
- B. Section 01 04 60 CONTROL OF WORK AND MATERIALS

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.01 DAILY CLEANUP:

- A. The Contractor shall clean up, at least daily, all refuse, rubbish, scrap and surplus material, debris and unneeded construction equipment resulting from the construction operations and sweep the area. The site of the work and the adjacent areas affected thereby shall at all times present a neat, orderly and workmanlike appearance.
- B. Upon written notification by the Engineer, the Contractor shall within 24 hours clean up those areas, which in the Engineer's opinion are in violation of this section and the above referenced sections of the specifications.
- C. If in the opinion of the Engineer, the referenced areas are not satisfactorily cleaned up, all other work on the project shall stop until the cleanup is satisfactory.

3.02 MATERIAL OR DEBRIS IN DRAINAGE FACILITIES:

- A. Where material or debris has washed or flowed into or has been placed in existing watercourses, ditches, gutters, drains, pipes, structures, such material or debris shall be entirely removed and satisfactorily disposed of during progress of the work, and the ditches, channels, drains, pipes, structures, and work shall, upon completion of the work, be left in a clean and neat condition.

3.03 REMOVAL OF TEMPORARY BUILDINGS, STRUCTURES AND EQUIPMENT:

- A. On or before completion of the work, the Contractor shall, unless otherwise specifically

required or permitted in writing, tear down and remove all temporary buildings and structures it built; shall remove all temporary works, tools and machinery or other construction equipment it furnished; shall remove all rubbish from any grounds which it has occupied; shall remove silt fences and hay bales used for trapping sediment; and shall leave the roads and all parts of the property and adjacent property affected by its operations in a neat and satisfactory condition.

3.04 RESTORATION OF DAMAGED PROPERTY:

- A. The Contractor shall restore or replace, when and as required, any property damaged by its work, equipment or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end the Contractor shall do as required all necessary highway or driveway, walk and landscaping work. Materials, equipment, and methods for such restoration shall be as approved by the Engineer.

3.05 FINAL CLEANUP:

- A. Before acceptance by the Owner, the Contractor shall perform a final cleanup to bring the construction site to its original or specified condition. This cleanup shall include removing all trash and debris off of the premises. Before acceptance, the Engineer shall approve the condition of the site.

END OF SECTION

SECTION 01 71 13  
MOBILIZATION

PART 1 GENERAL

1.1 SUMMARY:

- A. The work covered by this section consists of preparatory work and operations, including but not limited to:
1. Those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site.
  2. Those items necessary for providing the items required by the General Provisions, Special Provisions, and General Requirements.
  3. Those items including but not limited to: the establishment of all temporary fencing, staging areas, temporary access and haul routes, and other facilities necessary for work in the project.
  4. Those items necessary for the maintenance of vehicle and construction traffic; including but not limited to: portable and stationary construction signs, barricades, drums, cones, and other traffic control devices.
  5. Surveying and construction staking.
  6. All barricades, barricade lights, and other phasing and detour devices.
  7. Performance bond, labor and materials bond, insurance.
  8. Those items for all other work in the various items on the project site which must be performed or costs incurred prior to beginning work.
  9. This item also includes all work outside the limits of construction that is necessary to demobilize and restore areas disturbed by the Contractor to their original condition including, but not limited to, pavement rehabilitation, grading, seeding, mulching, cleaning, and disposal.

1.2 MEASUREMENT AND PAYMENT:

- A. All work covered by this section will be paid for at the contract lump sum price for "Mobilization."

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION - Not Used.

END OF SECTION

MOBILIZATION

01 71 13 - 2



SECTION 01 72 00  
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.1 DESCRIPTION

A. Work included:

1. Throughout progress of the Work, maintain an accurate record of changes in the Contract Documents, as described in Article 3.1 below.
2. Upon completion of the Work, deliver the recorded changes to the Engineer

B. Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
2. Additional requirements for field engineering also may be described in other Sections of these Specifications. These include but are not limited to the following:

1.2 QUALITY ASSURANCE

- A. Delegate the responsibility for maintenance of Record Documents to one person on the Contractor's staff as approved by the Engineer.
- B. Accuracy of records shall be such that future search for items shown on the Project Record Documents may rely reasonably on the information provided under this Section of the Work

1.3 SUBMITTALS

- A. The Engineer's approval of the current status of Project Record Documents may be a prerequisite to the Engineer's approval of requests for progress payment and request for final payment under the Contract.
- B. Prior to submitting each request for progress payment, secure the Engineer's approval of the current status of the Project Record Documents.
- C. Prior to submitting request for final payment, submit the final Project Record Documents to the Engineer and secure his approval.

1.4 PRODUCT HANDLING

- A. Maintain the job set of Record Documents completely protected from deterioration and from loss and damage until completion of the Work and transfer to the Engineer.
- B. In the event of loss of recorded data, use all means necessary to again secure the data to the Engineer's approval
  1. Such means shall include, if necessary in the opinion of the Engineer, removal and replacement of concealing materials.
  2. In such case, provide replacements to the standards originally required by the Contract Documents

PROJECT RECORD DOCUMENTS

## PART 2 PRODUCTS

### 2.1 JOB SET DOCUMENTS

- A. Promptly following receipt of the Owner's Notice to Proceed, secure from the Engineer, at no charge to the Contractor, one complete set of all Documents comprising the Contract

## PART 3 EXECUTION

### 3.1 MAINTENANCE JOB SET DOCUMENTS

- A. Immediately upon receipt of the job set described in above paragraph titled "JOB SET DOCUMENTS", identify each of the Documents with the title, "RECORD DOCUMENTS- JOB SET".
- B. Preservation:
  1. Considering the Contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set to the approval of the Engineer.
  2. Do not use the job set for any purpose except entry of new data and for review by the Engineer.
  3. Maintain the job set at the site of Work as that site is designated by the Engineer.
- C. Field work and making entries on Job Set Drawings:
  1. Use erasable colored pencil, preferably red (not ink or indelible pencil) to delineate changes.
  2. Show by station number location of all fittings, manholes, valves, wyes locations, etc.
  3. Reference all fittings and valves at least to two aboveground items reasonably safe from being relocated and indicate such references on the drawings.
  4. Field measure and reference all fittings and valves to two aboveground items reasonably safe from being relocated and indicate such references on the drawings.
  5. Show location of electrical conduit, pull boxes, etc.
  6. Gravity sewers and storm sewers
    - a) Provide survey grade state plane Geographic Information System (G.I.S.) electronic data horizontal coordinates for each structure location.
    - b) Provide ground elevation, top elevation and invert elevations for each structure.
    - c) Comply with Section 01050.1
- D. Submittals:
  1. Submit "marked-up" set of drawings to the Engineer.
  2. Make any necessary additions as required by the Engineer.

END OF SECTION

PROJECT RECORD DOCUMENTS

SECTION 01 40 00  
QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Quality control and control of installation.
  - 2. Tolerances.
  - 3. References.
  - 4. Testing and inspection services.
  - 5. Manufacturers' field services.
  - 6. Labeling.
  - 7. Examination.
  - 8. Preparation.

1.2 QUALITY CONTROL AND CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step, in sequence.
- C. When manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce required and specified quality.
- F. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.3 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. When manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

#### 1.4 REFERENCES

- A. For products or Work specified by association, trades, or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date for receiving Bids, (date of Owner-Contractor Agreement when there are no Bids), except where specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. When specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.
- E. Contractual relationships, duties, and responsibilities of parties in Contract and those of Engineer shall not be altered from Contract Documents by mention or inference otherwise in reference documents.

#### 1.5 TESTING AND INSPECTION SERVICES

- A. Employ and pay for services of an independent firm acceptable to Owner to perform specified testing and inspection.
  - 1. Prior to start of Work, submit testing laboratory name, address, and telephone number, and names of full-time registered Engineer, specialists and responsible officer.
- B. Independent firm will perform tests, inspections and other services specified in individual specification sections and as required by Engineer.
  - 1. Laboratory: Authorized to operate in the State of South Carolina.
  - 2. Laboratory Staff: Maintain full time registered Engineer and necessary specialists on staff to review services.
  - 3. Testing Equipment: Calibrated at reasonable intervals with devices of accuracy traceable to National Bureau of Standards or accepted values of natural physical constants.
- C. Testing and inspections may occur on or off project site. Perform off-site testing as required by Engineer or Owner.
- D. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
  - 1. Notify Engineer and independent firm 24 hours prior to expected time for operations requiring services.
  - 2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
- E. Testing and employment of independent firm does not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- F. Re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by same independent firm on instructions by Engineer.

1. Payment for re-testing or re-inspection will be charged to Contractor by deducting testing charges from Contract Sum/Price.
2. Submit final report indicating correction of Work previously reported as non-compliant.

G. Independent Firm Responsibilities:

1. Test samples of mixes submitted by Contractor.
2. Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.
3. Perform specified sampling and testing of products in accordance with specified standards.
4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
5. Promptly notify Engineer and Contractor of observed irregularities or non-conformance of Work or products.
6. Perform additional tests required by Engineer.
7. Attend preconstruction meetings and progress meetings.

H. Independent Firm Reports: After each test, promptly submit one copy of report to Engineer and Owner; and two copies to Contractor, and authority having jurisdiction. When requested by Engineer, provide interpretation of test results. Include the following:

1. Date issued.
2. Project title and number.
3. Name of inspector.
4. Date and time of sampling or inspection.
5. Identification of product and specifications section.
6. Location in Project.
7. Type of inspection or test.
8. Date of test.
9. Results of tests.
10. Conformance with Contract Documents.

I. Limits On Independent Firm:

1. May not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. May not approve or accept any portion of the Work.
3. May not assume duties of Contractor.
4. Has no authority to stop the Work.

## 1.6 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to:

1. Observe site conditions.
2. Observe conditions of surfaces.
3. Review installation and quality of Work.
4. Review start-up of equipment.
5. Review testing, adjusting and balancing of equipment.
6. Initiate instructions when necessary.

B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

## 1.7 LABELING

- A. Attach label from agency approved by authority having jurisdiction for products, assemblies, and systems required to be labeled by applicable code.
- B. Label Information: Include manufacturer's or fabricator's identification, approved agency identification, and the following information, as applicable, on each label.
  - 1. Model number.
  - 2. Serial number.
  - 3. Performance characteristics.

## PART 2 PRODUCTS – NOT USED

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify utility services are available, of correct characteristics, and in correct locations.

### 3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

END OF SECTION

SECTION 01 71 13  
MOBILIZATION

PART 1 GENERAL

1.1 SUMMARY:

- A. The work covered by this section consists of preparatory work and operations, including but not limited to:
1. Those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site.
  2. Those items necessary for providing the items required by the General Provisions, Special Provisions, and General Requirements.
  3. Those items including but not limited to: the establishment of all temporary fencing, staging areas, temporary access and haul routes, and other facilities necessary for work in the project.
  4. Those items necessary for the maintenance of vehicle and construction traffic; including but not limited to: portable and stationary construction signs, barricades, drums, cones, and other traffic control devices.
  5. Surveying and construction staking.
  6. All barricades, barricade lights, and other phasing and detour devices.
  7. Performance bond, labor and materials bond, insurance.
  8. Those items for all other work in the various items on the project site which must be performed, or costs incurred prior to beginning work.
  9. This item also includes all work outside the limits of construction that is necessary to demobilize and restore areas disturbed by the Contractor to their original condition including, but not limited to, pavement rehabilitation, grading, seeding, mulching, cleaning, and disposal.

1.2 MEASUREMENT AND PAYMENT:

- A. All work covered by this section will be paid for at the contract lump sum price for "Mobilization."

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION - Not Used.

END OF SECTION

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SECTION 02 20 00  
INFORMATION AVAILABLE TO BIDDERS

PART 1 GENERAL

1.1 INFORMATION USED DURING DESIGN

- A. The Engineer has relied upon documents related to geotechnical conditions and permit requirements in the preparation of plans and specifications. The following information is provided in the Appendix.
1. Soil Consultants, Inc. (SCI) Geotechnical Investigation Report, SCI Project 220017, dated March 17, 2022, and
  2. South Carolina Department of Health and Environmental Control (SCDHEC) and Ocean & Coastal Resource Management (OCRM) Permits.
- B. The Engineer has relied upon documents related to existing systems and process equipment in the preparation of plans and specifications. The following information will be available by the Owner for review by interested bidders.
1. Downtown Georgetown Revitalization Project by, Davis & Floyd, Inc., Consulting Engineers, Job No. 8298, dated March 1991.
  2. City of Georgetown Front Street Electrical Upgrade by Utility Technology Engineers – Consultants, Job No. 171007, dated December 15, 2022.
  3. City of Georgetown Harborwalk Renovation by Collins Engineers, Project No. 6226, dated January 15, 2010.
  4. City of Georgetown Harborwalk Standpipe Renovation by Buford Goff and Associates, Inc., Project No. 16107, dated December 7, 2016.
- C. It is understood that reports, manufacturer’s submittal information and record drawings are offered as an aid in bidding only and are not part of the Construction Documents.
- D. The Contractor may rely upon the general accuracy to the information made available. It is understood that no claim shall be made against the Owner or Engineer with respect to:
1. The completeness of any report and any reference to means, methods, techniques and procedures of construction to be employed by the Contractor and related safety precautions;
  2. Accuracy of dimensions and installation details; and
  3. Contractor interpretation of information made available by the Owner.

PART 2 (NOT USED)

PART 3 EXECUTION

3.1 DIFFERING CONDITIONS

- A. If the Contractor believes that any equipment feature, physical arrangement or subsurface condition is revealed to be materially different than shown by the Owner-supplied information and of such a nature as to require a change in the Contract Documents, the Contractor shall promptly and, before performing any Work notify the Engineer in writing of such condition.

END OF SECTION

SECTION 02 41 00  
DEMOLITION AND SALVAGE

PART 1 GENERAL

1.1 SUMMARY

A. SECTION INCLUDES

1. This Section specifies demolition, salvage, cutting, patching, relocation, and abandonment, removal, and disposal related to the Work shown on the Drawings and as specified herein.
2. The Contractor shall furnish all labor, material, equipment, and incidentals required for removal, salvage, and modification of existing features.

B. RELATED SECTIONS

1. The following Sections have work that is directly related to this Section. This does not relieve the Contractor of his responsibility of proper coordination of all the work:
  - a. Section 01 04 60 Control of Work and Materials
  - b. Section 01 40 00 Quality Requirements
  - c. Section 01 57 13 Erosion and Sedimentation Control
  - d. Section 01 71 00 Cleaning Up

1.2 MEASUREMENT AND PAYMENT

- A. Basis of Measurement: Demolition will be measured per LF for pipe removal, EA for structure removal and LF for chain link fence removal. Other demolition activities are considered incidental to the execution of the items identified as “Remove and replace...” and will not be measured for individual demolition payment.
- B. Basis of Payment: The Unit Price Bid per LF or EA shall include excavation, backfill to existing grade/asphalt subgrade, loading, removal from site and proper disposal.

1.3 SALVAGE, DISPOSITION, STORAGE, AND HANDLING

- A. Salvage items designated by the Owner for salvage are identified in the Contract Documents.
- B. Clean, list, and tag identified equipment for storage.
- C. Protect from damage salvaged equipment and deliver to locations designated by Owner.

1.4 DISPOSAL OF EQUIPMENT AND MATERIALS

- A. The Contractor shall dispose of offsite all items designated in the Contract Documents for demolition or removal, including but not limited to piping, concrete, pavement, and appurtenances, except for items specifically designated otherwise by the Engineer and identified herein for salvage. All demolished or removed materials shall become the property of the Contractor and shall be promptly removed from the site and properly disposed of in accordance with all applicable Federal, State, and Local laws and regulations. Demolition debris shall not be used for fill or backfill.

## 1.5 PROTECTION OF PROPERTY

- A. Remove materials in a manner that protects adjacent structures, piping, or landscaping to remain in place.
- B. Repair or replace property that is damaged at no additional cost to the Owner.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION

### 3.1 GENERAL

- A. Notify the Engineer at least one week in advance of beginning any demolition work so that existing conditions can be reviewed and the bounds of the demolition and impacts on any adjacent or nearby structures, piping, properties, or roadway improvements can be assessed.

### 3.2 OPERATION PROCEDURES

- A. Start and complete work in order or precedence as established by the latest approved project schedule.
- B. Execute work to protect occupants from injury and discomfort. Provide protection to persons and property. Conduct operations to ensure minimum interference with roads, walks, driveways, and other adjacent structures.
- C. Provide the following:
  - 1. Pedestrian traffic diversion where necessary to ensure safe passage of residents in or near areas of work.
  - 2. Substantial barricades and safety lights as required.

### 3.3 DEMOLITION AND REMOVAL

- A. Structures and Piping
  - 1. Demolition and removal of structures consist of designated stormwater catch basins, yard inlets, junction boxes, stormwater drainage piping, sanitary sewer piping, sanitary sewer manholes, sanitary sewer services, water main, hydrants, valves, water services, and any other structures. Neatly cut and remove materials to the limits shown on the Drawings, and prepare trenches and adjoining areas to receive new pipelines, structures, and appurtenances.
  - 2. Wet down work during demolition operations to prevent dust from rising.
  - 3. Provide shoring, bracing, and other supports to prevent movement, settlement, or collapse of remaining excavations and trenches. Arrange shoring, bracing, and supports to prevent overloading of existing structures.
  - 4. Take precautions necessary to prevent damage to existing remaining work or to adjacent property. Execute work using methods that will prevent interference with access to adjacent properties by residents.
- B. Pavement
  - 1. Pavement, curb and gutter, driveways, and sidewalks designated on the Drawings for removal or demolition shall be removed to the soil subgrade.

2. When portions of asphalt pavements, concrete driveways, sidewalks, and curb and gutter are to be removed and later construction is to be connected, edges shall be saw cut, on a neat line at right angles to the curb face.

C. Fencing

1. Demolition and removal of chain link and wooden fences as designated on the Drawings. All fence posts, including concrete base, are to be removed. Chain link fabric, wooden slats, gates and all accessories are to be removed and properly disposed.
2. Excavations from removed posts are to be filled and brought back to grade. Disturbed areas to be seeded with grass for stabilization.

D. Salvage

1. The Owner has the right to salvage any items scheduled for removal. The Contractor shall notify the Owner 14 days prior to any salvage or demolition work to determine the disposition of items to be removed. The Engineer will mark items to be salvaged. Such items shall be properly disconnected, removed from their foundations, cleaned, and stored as specified in paragraph 0 above.
2. The Contractor shall notify affected property owners of items to be removed 14 days prior to any salvage or demolition work. Property owners shall be informed that they have 14 days to remove items they want to salvage, otherwise items will be removed and disposed of.

3.4 ABANDONMENT

- A. Abandonment of existing buried stormwater piping shall be per requirements of the Drawings. If Drawings do not address abandonment requirements, Contractor shall install 12-inch thick (or as specified by the Engineer) concrete bulkhead(s) at abandonment locations designated on the Drawings and flowable fill placed within the pipeline identified for abandonment.
- B. Methods, materials, and finished work are subject to review by the Engineer.

3.5 CLEANUP

- A. Remove debris, rubbish and materials resulting from cutting, demolition, or patching operations.
- B. Transport materials and legally dispose of offsite.
- C. Leave property and adjacent areas clean and satisfactory to the Engineer.

END OF SECTION

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SECTION 02 41 13.13

PAVING REMOVAL

PART 1 GENERAL

1.1 SUMMARY

A. SECTION INCLUDES:

<u>Section</u>	<u>Title</u>
1.2	Measurement and Payment
1.3	References
1.4	Work Included
1.5	Submittals
2.1	Equipment
3.1	Trench Paving Removal
3.2	Milling Operation

1.2 MEASUREMENT AND PAYMENT

- A. Basis of Measurement: By square yards (SY) of removal. This excludes asphalt areas that are within the trench area footprint of underground utility installation. Pavement removal within the trench area footprint of the underground utility installation is considered incidental to that work. Pavement milling is considered incidental to the “Mill and Resurface Existing Asphalt Pavements” Work item.
- B. Basis of Payment: The Unit Price Bid per square yard of pavement removal shall include costs of labor, equipment and permitting to cut, remove, load, haul and properly dispose of paving materials.

1.3 REFERENCES

- A. Drawings and general provisions of the Contract, including general and supplementary conditions and Division 1 Specification Sections, apply to this section.
- B. South Carolina Department of Transportation Current Standard Specifications For Highway Construction.

1.4 WORK INCLUDED

- A. The Contractor shall furnish all labor, equipment, and materials necessary to remove, haul-off, and dispose asphalt and/or concrete paving as required for the removal, rehabilitation, replacement, and installation of proposed storm drainage, sanitary sewer, and water main systems and related appurtenances.

1.5 SUBMITTALS

- A. The Contractor shall submit for approval, in accordance with Section 01 34 00 Shop Drawings, Product Data, and Samples - and to South Carolina DOT when work is within

a state road right-of-way, all working drawings and schedules of materials and methods proposed to be followed in the execution of the Work under this item.

- B. The Contractor shall submit photographs and/or videotape, sufficiently detailed, of existing conditions of project site. These shall be used to evaluate project areas that might be misconstrued as damage caused by debris or construction material removal.

## PART 2 - PRODUCTS

### 2.1 EQUIPMENT

#### A. MILLING EQUIPMENT:

- 1. Use power-driven, self-propelled milling equipment that is the size and shape that allows traffic to pass safely through areas adjacent to the work. Also use equipment that is:
  - a. Designed to mill and remove specified depth of existing asphalt and/or concrete paving
  - b. Equipped with grade slope controls operating from a string line or ski and based on mechanical or sonic operation.
  - c. Capable of removing pavement to an accuracy of 1/8 in. (3 mm)
  - d. Furnished with lighting system for night work, as necessary
  - e. Provided with conveyors capable of side, rear, or front loading to transfer the milled material from the roadway to a truck

#### B. DUST CONTROL

- 1. Provide power brooms, vacuum sweepers, power blowers, or other means to remove loose debris or dust. Do not allow dust control to restrict visibility of passing traffic or to disrupt adjacent property owners.

## PART 3 - EXECUTION

### 3.1 TRENCH PAVING REMOVAL

- A. Where trench excavation within a paved surface is required, the Contractor shall saw cut vertical joints for the entire depth of pavement. The saw cut joints shall extend for the entire length of trench on both sides of the trench. Ragged edges shall be trimmed so as to provide a substantially straight-line juncture between the old and new surfaces.
- B. The saw cut joints shall be a minimum of 9 inches outside of the maximum width of excavated trench.
- C. Pavement shall be removed and hauled off site and disposed of in a proper legal manner. Contractor shall be careful not to disturb or damage any pavement that is to remain.



### 3.2 MILLING OPERATION

- A. Follow the Plans to mill the designated areas and depths, as required. Ensure the following requirements are met:
- B. Schedule the construction operation. Use milling methods that will produce a uniform finished surface and maintain a constant cross slope between extremities in each lane.
- C. Provide positive drainage to prevent water accumulation on the milled pavement, as shown on the Plans or directed by the Engineer.  

Bevel back the longitudinal vertical edges greater than 2 in (50 mm) that are produced by the removal process and left exposed to traffic. Bevel them back at least 3 in for each 2 in (75 mm for each 50 mm) of material removed. Use an attached mold board or other approved method.
- D. When removing material at ramp areas and ends of milled sections, taper the transverse edges 10 ft (3 m) to avoid creating a traffic hazard and to produce a smooth surface.
- E. Protect with a temporary asphaltic concrete tie-in (paper joint) vertical edges at other areas such as bridge approach slabs, drainage structures, and utility appurtenances greater than ½-inch that are left open to transversing vehicles. Place the temporary tie-in at taper rate of at least 6 to 1 horizontal to vertical distance.
- F. Remove dust, residue, and loose milled material from the milled surface. Do not allow traffic on the milled surface and do not place asphaltic concrete on the milled surface until removal is complete.
- G. The reclaimed asphaltic and/or concrete pavement becomes the Contractor's property unless otherwise specified.

END OF SECTION

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## SECTION 04 05 13

### MASONRY

#### PART 1 GENERAL

##### 1.01 RELATED DOCUMENTS

- A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this Section.

##### 1.02 UNIT PRICE – MEASUREMENT AND PAYMENT

- A. Basis of Measurement: By actual linear feet of curb and square yards of sidewalk/road, all types and sizes, restored in accordance with these specifications, as shown on the drawings or as authorized by the Engineer.
- B. Basis of Payment: The Unit Price Bid per linear foot for curbs and sidewalks/roads, all types and sizes, shall include cost for permit fees, maintenance charges and inspection fees and the furnishing of all materials, labor, tools, and appliances necessary to complete the Work as specified, as indicated on the drawings, or as directed by the Engineer. Included shall be the costs of additional excavation required to provide a firm foundation and any costs of furnishing necessary work beyond the limits of measurement as defined under these specifications. Removal, handling, hauling, and disposal of existing curb and sidewalk/road material will be considered incidental to this Pay Item and no additional compensation will be made.

##### 1.03 DESCRIPTION OF WORK

- A. Mortar
- B. Brick masonry
- C. Cast Stone
- D. Unit pavers

##### 1.04 QUALITY ASSURANCE

- A. All produces and execution shall conform to applicable standards and specifications published by the following:
  - 1. The American Society for Testing and Materials (ASTM)
  - 2. American National Standards Institute (ANSI)
  - 3. National Concrete Masonry Institute (NCMA)
  - 4. Structural Clay Products Institute (SPCI)
  - 5. Underwriters Laboratories, Inc. (UL)

##### 1.05 SUBMITTALS

- A. Product Data: Submit manufacturer's specifications and other data for each type of masonry unit, accessory, and other manufactured products, including certifications that each type complies with specified requirements. Include instructions for handling, storage installations and protections.

## 1.06 JOB CONDITIONS

- A. Protection of Work: During erection, cover top of walls with heavy waterproof sheeting at end of each day's work. Cover partially completed structures when work is not in progress.

## 1.07 COLD WEATHER PROTECTION

- A. Remove any ice or snow formed on masonry bed by carefully applying heat until tip surface is dry to the touch.
- B. Remove all masonry determined to be frozen or damaged by freezing conditions.
- C. Perform the following construction procedures while the work is progressing:
  - 1. When air temperature is from 40 degrees F (4 degrees C) to 32 Degrees F (0 degrees C), heat sand or mixing water to produce mortar temperatures between 40 degrees F (4 degrees C) and 120 degrees F (49 degrees C)
  - 2. Do not lay masonry when the temperature of the surrounding air is 32 degrees F (0 degrees C) and falling.
- D. Perform the following protections for completed masonry and masonry not being worked on:
  - 1. When the mean daily air temperature is from 40 degrees F (4 degrees C) to 32 degrees F (0 degrees C), protect masonry from rain or snow for at least 24 hours by covering with weather resistive membrane.
  - 2. When mean daily air temperature is from 32 degrees F (0 degrees C) to 25 degrees F (-4 degrees C), completely cover masonry with weather-resistive membrane for at least 24 hours.
  - 3. When mean daily air temperature is from 25 degrees F (-4 degrees C) to 20 degrees C) completely cover masonry with insulating blankets or similar protection for at least 24 hours.
  - 4. When mean daily temperature is 20 degrees F (-7 degrees C) and below, maintain masonry temperature above 32 degrees F (0 degrees C) for 24 hours using enclosures and supplementary heat, electric heating blankets, infrared lamps, or other acceptable methods.

## PART 2 PRODUCTS

### 2.01 MORTAR MATERIALS

- A. Portland Cement: ASTM C150, Type I. Provide natural color or white cement as required to produce the required mortar color.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Aggregates: ASTM C 144, except for joints less than ¼" use aggregate graded with 100% passing the No. 16 sieve.
- D. Mortar Color: Supply mortar color with fast-color, mineral pigments to produce color of mortar selected by architect.
- E. Water: Clean, free of deleterious materials which would impair strength or bond.

### 2.02 UNIT PAVERS

- A. Solid concrete interlocking paving stones: ASTM C936-82 paving stones shall be Holland

Stone as manufactured by Metromont Materials, Spartanburg, South Carolina or approved equal. Paving stones shall be 2 3/8" x 4" x 8" with hidden spacer and meet the following physical requirements:

1. Compression Strength- At the time of delivery to the work site, the average compressive strength shall not be less than 8,000 psi with no individual unit strength less than 7,200 psi with testing procedures in accordance with ASTM Standard C-140.
2. Absorption- The average absorption shall not be greater than five percent (5%) with no individual unit absorption greater than seven percent (7%).
3. Proven Field Performance – Satisfying field performance is indicated with units similar in composition and made with the same manufacturing equipment as those to be supplied to the purchaser, do not exhibit objectionable deterioration after at least one (1) year.
4. All units shall be manufactured with a separate surfaced hardened mix to ensure consistent texture and concentration of color on the wearing surface.

**B. Visual Inspection**

1. All units shall be sound and free of defects that would interfere with the proper placing of the unit or impair the strength of performance of the construction. Minor cracks incidental to the usual methods of manufacture, or minor chipping resulting from customary methods of handling in shipment and delivery, shall not be deemed grounds for rejection.

**C. Sampling and Testing**

1. The purchaser or his authorized representative shall be accorded facilities to inspect and sample the units at the place of manufacture from lots ready for delivery.
2. Sample and test units in accordance with ASTM Methods C-140.

**D. Rejection**

1. In case the shipment fails to conform to the specified requirements, the manufacturer may sort it, and new test units shall be selected at random by the purchaser from the retained lot and tested at the expense of the manufacturer. In case the second set of test unit fails to conform to the specified requirements, the entire lot shall be rejected.

**E. Expense of Tests**

1. The expense of inspection and testing shall be borne by the purchaser unless otherwise agreed.

**PART 3 EXECUTION**

**3.01 MORTARED BRICK MASONRY**

- A. Do not lower the freezing point of mortar by use of admixtures or antifreeze agents.
- B. Do not use calcium chloride in mortar by use of admixtures or antifreeze agents.
  1. Type M: ¼ part lime per part of Portland cement.
  2. Type S: Over ¼ up to ½ part lime per part Portland cement.
- C. Thickness: Build masonry construction to the full thickness shown, except, build single- width walls (if any) to the actual thickness of the masonry units, using units of nominal thickness

shown or specified.

- D. Cut masonry units with motor-driven saw designed to cut masonry with clean, sharp, unchipped edges. Cut units as required to provide pattern shown and to fit adjoining work neatly. Use full units without cutting wherever possible.
- E. Do not wet concrete masonry units.
- F. Frozen Materials and Work: Do not use frozen materials or materials mixed or coated with ice or frost. For masonry, which is specified to be wetted, comply with BIA recommendations. Do not build on frozen work. Remove and replace masonry work damaged by frost or freezing.
- G. Lay-up walls plumb and true and courses level accurately spaced and coordinated with other work.
- H. Stopping and Resuming Work: Rack back ½-masonry unit length in each course; do not tooth. Clean exposed surfaces of set masonry, wet units lightly (if specified to be wetted) and removed loose masonry units and mortar prior to laying fresh masonry.
- I. Mortar Bedding and Jointing:
  - 1. Use Type M mortar for masonry below grade and in contact with earth, interior and exterior load bearing walls.
  - 2. Use Type S mortar for exterior above grade and in contact with earth, interior and exterior load bearing walls.
  - 3. Measure and batch materials either by volume or weight, such that the required proportions for mortar can be accurately controlled and maintained. Measurement of sand exclusively by shovel will not be permitted.
  - 4. Mix mortars with the maximum amount of water consistent with workability to provide maximum tensile bond strength within the capacity of the mortar.
  - 5. Mix mortar ingredients for a minimum amount of water consistent with workability to provide maximum tensile bond strength within the capacity of the mortar.
  - 6. Mix mortar ingredients of a minimum of 5-minutes in a mechanical batch mixer. Use water clean and free of deleterious materials, which would impair the work. Do not use mortar, which has begun to set, or if more than 2 ½ hours has elapsed since initial mixing. Re-temper mortar during 2 ½ hour period as required to restore workability.
  - 7. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells; also, bed webs in mortar in starting course on footings and foundation walls and in all courses of piers, columns and pilasters, and where adjacent to cells, or cavities to be reinforced or to be filled with concrete or grout.
  - 8. Joints: Maintain joint widths shown, except for minor variations required to maintain bond alignment. If not otherwise indicated, lay walls with 3/8" joints. Cut joints flush for masonry walls which are to be concealed or to be covered by other materials.
  - 9. Remove masonry units disturbed after laying, clean and relay in fresh mortar. Do not pound corners at jambs to fit stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar, and reset in fresh mortar.

10. Formwork for Supporting Reinforced Masonry: Construct formwork to fully support reinforced arch for its entire length. Tolerance for formwork shall be 1/8" true to radius, 1/16" true to level. Leave formwork in place for 14 days after erection.

### 3.02 UNIT PAVERS

- A. The paving stone installer/contractor must have related experience in the installation of interlocking concrete paving stones.
- B. Subgrade Preparation
  1. Any unsuitable material, such as organic material, large rocks, etc., shall be removed from the subgrade and replaced with suitable backfill. The subgrade shall be drained and protected against flooding and ground water by sub-soil drainage. The installation of pipes and sub-soil drainage shall be completed before initiating the base or subbase construction. The width of the subgrade shall be sufficient to extend to the back edge of the proposed edge restraint or abut existing structures.
  2. The subgrade top surface shall be scarified and conditioned to the proper moisture content, and then recompacted to established relative densities. Compaction of the soil shall be at least 90% standard Proctor density per ASTM D 698 for pedestrian areas and residential driveways and to at least 98% modified Proctor density per ASTM D 1557 for areas subject to heavy vehicular traffic.
- C. Concrete Base Course Preparation
  1. Install concrete base course in accordance with the Contract Documents.
  2. Surfaces to receive masonry paving units shall be firm, free from frost, dirt, dust and foreign materials. Inspect surfaces prepared by other trades before starting Work and report to the Owner in writing any conditions which will prevent satisfactory execution of finished Work and have same corrected before starting Work. Application of materials in any given area indicates acceptance of surfaces provided and latter claims of defects to these surfaces provided will not relieve the applicator from responsibility to produce first class work.
  3. Tack coat, bituminous setting bed (3/4") and neoprene modified asphalt adhesive to be applied per project drawing details.
  4. The base course shall be shaped to grade and cross section with an allowable tolerance of 1/4" (5mm).
  5. The concrete base thickness is as follows: Sidewalks, and other designated areas for pedestrian walkways shall be at least 4" (100mm). For other areas such as driveways, receiving wheeled traffic loads, a minimum of 6" (150mm) base thickness is required.

#### D. Laying of Concrete Paving Stones

1. The paving stones shall be laid in the approved pattern as noted or shown on the drawings. Layering pattern shall be Runner bond.
2. The paving stones shall be laid in such a manner that the desired pattern is maintained and the joints between the stones are as tight as possible. Joints between stones shall not exceed 1/8" (3mm).
3. String lines should be used to hold all pattern lines true.
4. The gaps at the ends of the paver surface be filled with standard edge stone or with stones cut to fit. Cutting shall be accomplished to leave clean edge to the traffic surface using a masonry saw. Whenever possible, no cuts should result with a paver less than 1/3 of original dimension.
5. A tack coat shall be applied to the concrete surface to enhance the bond of the setting bed to the underlying base. The tack coat should be installed when the ambient temperature is above 50 °F (10 °C). The surface of the base material should be thoroughly clean and dry before application. The tack coat should not be applied if rain is likely before placing the setting bed. The tack coat should be thoroughly mixed and heated to the appropriate application temperature, taking all necessary safety precautions. The tack coat should not be diluted. It should be uniformly applied by spraying, brushing or squeegeeing to the top of the base and to all surfaces that will be in contact with bituminous setting bed. The application rate should be established before the work starts. As work progresses, the rate can be verified by marking out the area that one pail or drum will cover. The installer should not apply more tack coat at any time than can be covered with the bituminous setting bed during the same day. Emulsified asphalt tack coats are typically applied at a rate of 0.9 to 1.3 gal per 100 ft<sup>2</sup> (3.6 to 5.3 liters per 10.0 m<sup>2</sup>) to concrete bases and 0.6 to 1.0 gal per 100 ft<sup>2</sup> (2.5 to 4.1 liters per 10.0 m<sup>2</sup>) to asphalt bases. Cutback asphalt tack coats are typically applied at a rate of 1.2 to 1.5 gal per 100 ft<sup>2</sup> (4.8 to 6.1 liters per 10.0 m<sup>2</sup>) to concrete bases and 1.0 to 1.3 gal per 100 ft<sup>2</sup> (4.1 to 5.3 liters per 10.0 m<sup>2</sup>) to asphalt bases. Once applied the tack coat should not be disturbed and should be allowed to cure or break before covering with the setting bed material. This may take a few hours dependent on weather conditions. The tack coat should be applied to the base in a thin, continuous, uniform layer. If it is applied too thin or so that some areas of the base remain uncoated, the setting bed will not bond properly, creating a weakness or layer separation in the pavement. This can be detrimental if water accumulates and freezes in the separated area. If too much tack coat is applied, the thicker areas can create a slip plane, or the tack coat can penetrate the bituminous setting bed material and reduce its stability. These issues become more critical as the amount of vehicular traffic increases.
6. A setting bed shall be installed over the tack coat. The temperature should be above 40 °F (4 °C) before placing setting bed material. Depth-control rails should be set on the existing surface to proper line and level using shims to account for surface irregularity. Allowance should be made for compaction of the bituminous mix, not only during construction but also in service. The setting bed thickness should be established so that when the pavers are fully set on the adhesive layer, their top surface will be about 1/8 in. (3.1 mm) above the required grades to allow for future settlement. Setting bed material should be delivered to the job site in trucks with steel linings that are clean and have not been treated with materials (e.g., gasoline, kerosene, etc.) detrimental to the asphalt mix. To retain heat, the bituminous mixture should be covered prior to use. The temperature of the setting bed material at the time of delivery should not be less than 260 °F (127 °C)



or more than 320 °F (160 °C). The installer should work quickly to spread and roll the material before it cools below 180 °F (82 °C). Steel depth control rails, typically 12 ft. (3.6 m) long, are set up at 8 to 12 ft (2.4 to 3.6 m) centers on shims to achieve a uniform profile. The compacted setting bed should be within  $\pm\frac{1}{8}$  in. (3.2 mm) of  $\frac{3}{4}$  in. (19.1 mm) in thickness. Care should be taken to ensure that release agents applied to the screed rails and tools do not cause damage to the bituminous setting bed. The hot bituminous material should be spread over the tack-coated base and screeded to the appropriate profile between the depth control rails. The screeded panels should be advanced across the pavement as each screed rail length is completed. To minimize foot traffic on the screeded material, alternate panels should be constructed so that the screed rails and shims can be removed without disturbing the screeded material. The infill panel is screeded using the edges of the two outside panels to set the thickness.

7. The pavers are laid on the adhesive working away from an edge restraint or the existing laying face while following the pattern lines that have been established.
8. Upon completion of work covered in the Section, the Contractor shall cleanup all work areas by removing all debris, surplus material and equipment from the site.
9. Cleaning- all dirt, grime, and fresh oil and grease shall be removed from the concrete paver surface prior to job being complete. Spray or brush cleaner onto paver surface and then rinse away with clean, potable water. Flammable ingredients or acids are not to be used. Use Addiment Dirt and Grim Remover, or Addiment Efflorescence Remover and General Cleaner, or approved equal.
10. Sealers- No sealer shall be applied until after a thorough cleaning of paver surface. Sealer shall be sprayed or rolled onto clean, dry surface, using Addiment Paver Seal - WB, or approved equal.

END OF SECTION

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SECTION 31 10 00  
SITE CLEARING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Removing surface debris.
2. Removing designated trees, shrubs, and other plant life.
3. Protecting plant life and structures designated to remain.

B. Related Sections:

1. Section 31 23 16 - Excavation and Fill: Topsoil and subsoil removal, proof rolling.

1.2 REFERENCES

- A. Standard Specifications for Highway Construction, latest edition, published by the South Carolina Department of Transportation.
- B. South Carolina Department of Health and Environmental Control Storm Water Management Best Management Practices, latest edition, published by the South Carolina Department of Health and Environmental Control.

1.3 MEASUREMENT AND PAYMENT

1.4 Site Clearing: Will not be measured for payment. This item is considered incident to the Work.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with SCDOT Section 201 of the Standard Specifications, latest edition.
- B. Maintain one copy of document on site.
- C. Conform to applicable code for environmental requirements and disposal of debris.

## PART 2 PRODUCTS – Not Used.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01 40 00 - Quality Requirements: Verification of existing conditions before starting work.
- B. Verify existing plant life designated to remain is tagged or identified.
- C. Identify waste area or salvage area for placing removed materials when materials are indicated to remain on site.

### 3.2 PREPARATION

- A. Call Palmetto Utility Protection Services, Inc. (PUPS) and/or Local Utility Line Information service designated on Drawings three (3) working days before performing Work.
  - 1. Request underground utilities to be located and marked within and surrounding construction areas.
  - 2. Contractor will not perform work prior to the expiration of the mandatory period unless all utilities have been located.
- B. Notify affected utility companies before starting work and comply with utility's requirements.

### 3.3 PROTECTION

- A. Locate, identify, and protect from damage utilities indicated to remain.
- B. Protect trees, plant growth, and features designated to remain as final landscaping.
- C. Protect benchmarks and survey control points from damage or displacement.

### 3.4 CLEARING

- A. Remove trees and shrubs within areas indicated on Drawings.
- B. Remove stumps, main root ball, root system, surface rock, and pavements to depth of 12 inches below proposed Subgrade elevation.
- C. Clear undergrowth and deadwood without disturbing subsoil.

### 3.5 REMOVAL

- A. Remove debris, rock, and extracted plant life from site.

- B. .
- C. Continuously clean-up and remove waste materials from site. Do not allow materials to accumulate on site.
- D. Do not burn or bury materials on site unless authorized in writing by authority having jurisdiction.
- E. Leave site in clean condition.

### 3.6 SCHEDULES

- A. Protect the following materials:

END OF SECTION

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SECTION 31 23 16  
EXCAVATION AND FILL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavating topsoil.
2. Excavating subsoil for buildings, pavements, and landscape.
3. Backfilling building perimeter to subgrade elevations.
4. Backfilling site structures to subgrade elevations.
5. Filling under pavements or slabs-on-grade.
6. Undercutting and filling over-excavation.
7. Disposal of excess material.

B. Related Sections:

1. Section 02 41 00 - Demolition and Salvage:
2. Section 31 25 13 - Erosion Controls: Controlling sediment and erosion from Work of this section.
3. Section 31 23 16.13 - Trenching: Excavating and backfilling for utilities.

1.2 UNIT PRICE – MEASUREMENT AND PAYMENT

A. Excavating Topsoil:

1. Basis of Measurement: By cubic yard.
2. Basis of Payment: Includes excavating existing soil, stockpiling, and removing excess material from site. NOTE: Excavation related to stormwater conveyance installation is considered incidental to that Work.

B. Excavating Subsoil Materials:

1. Basis of Measurement: By cubic yard.
2. Basis of Payment: Includes excavating to required elevations, moving to fill areas, scarifying substrate surface, placing, compacting, and removing excess material from site. No payment will be made for over-excavating or for replacement materials. NOTE: Excavation related to stormwater conveyance installation is considered incidental to that Work.

C. Undercutting:

1. Basis of Measurement: By cubic yard.
2. Basis of Payment: Includes excavating to required elevations, moving to fill areas, scarifying substrate surface, placing, compacting, and removing excess material from site.

D. Borrow Material:

1. Basis of Measurement: By cubic yard.
2. Basis of Payment: Includes excavating material at borrow site, supplying materials to Project site, stockpiling, scarifying substrate surface, placing where required, and

compacting. NOTE: Borrow material related to stormwater conveyance installation is considered incidental to that Work.

E. Subsoil Fill:

1. Basis of Measurement: By cubic yard.
2. Basis of Payment: Includes providing subsoil fill materials, stockpiling, scarifying substrate surface, placing where required, and compacting. NOTE: Subsoil Fill related to stormwater conveyance installation is considered incidental to that Work.

F. Granular Fill:

1. Basis of Measurement: By cubic yard.
2. Basis of Payment: Includes providing granular fill materials, stockpiling, scarifying substrate surface, placing where required, and compacting. NOTE: Granular Fill related to stormwater conveyance installation is considered incidental to that Work.

G. Structural Fill:

1. Basis of Measurement: By cubic yard.
2. Basis of Payment: Includes providing structural fill materials, stockpiling, scarifying substrate surface, placing where required, and compacting. NOTE: Structural Fill related to stormwater conveyance installation is considered incidental to that Work.

### 1.3 REFERENCES

A. SCDOT Standard Specifications:

1. Standard Specifications for Highway Construction, latest edition, published by the South Carolina Department of Transportation.

B. American Association of State Highway and Transportation Officials:

1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.

C. ASTM International:

1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)).
2. ASTM D1556 - Standard Test Method for Density of Soil in Place by the Sand-Cone Method.
3. ASTM D1557 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN-m/m<sup>3</sup>)).
4. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
5. ASTM D2419 - Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
6. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
7. ASTM D6938 – Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).



## 1.4 SUBMITTALS

- A. Section 01 34 00 - Shop Drawings, Product Data and Samples: Submittals
- B. Excavation Protection Plan: Describe sheeting, shoring, and bracing materials and installation required to protect excavations and adjacent structures and property; include structural calculations to support plan.
- C. Dewatering Plan: Describe dewatering methods to be used to keep excavations dry if required.
- D. Samples: Submit, in air-tight containers, 10-pound sample of each type of fill to testing laboratory.
- E. Materials Source DOT Approval: Submit certification that aggregate and soil material suppliers are approved by the State Department of Transportation.
- F. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

## 1.5 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Contract Closeout: Requirements for submittals.
- B. Project Record Documents: Accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.

## 1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with SCDOT Sections 104, 203, 205, 206, 211, 225, 230, 235 and 260 of Standard Specifications.
- B. Maintain one copy of document on site.
- C. Prepare excavation protection plan under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of South Carolina.

## 1.7 PROJECT CONDITIONS

- A. Refer to the geotechnical report for additional information regarding site conditions and work directions.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Topsoil: Original surface soil typical of the area which is capable of supporting native plant growth. It shall be free of large stones, roots, waste, debris, contamination, or other unsuitable material which might hinder plant growth.

- B. Subsoil: Clean natural soil with a plasticity index of 15 or less that is free of clay, rock, or gravel lumps larger than two inches in any dimension, debris, waste, frozen material, and any other deleterious material that might cause settlement. Suitable material excavated from the site may be used as subsoil fill under optimum moisture conditions.
- C. Granular Fill: Clean sand, slightly silty sand, or slightly clayey sand having a Unified Soil Classification of SW, SP, SP-SM, or SP-SC.
- D. Structural Fill: Clean coarse aggregate Gradation No. 57 conforming to the SCDOT Division 200 of Standard Specifications.
- E. Borrow Material: Conform to subsoil requirements.

## 2.2 ACCESSORIES

- A. Geotextile Fabric: Fabric conforming to Section [804] of the SCDOT Standard Specifications for Highway Construction, latest edition, for Class 1 Fabrics.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01 40 00 - Quality Requirements: Verification of existing conditions before starting work.
- B. Verify survey benchmark and intended elevations for the Work are as indicated on Drawings.
- C. Verify subdrainage, damp proofing, or waterproofing installation has been inspected.
- D. Verify underground structures are anchored to their own foundations to avoid flotation after backfilling.
- E. Verify structural ability of unsupported walls to support loads imposed by fill.

### 3.2 PREPARATION FOR EXCAVATION

- A. Call Palmetto Utility Protection Services, Inc. (PUPS) and/or Local Utility Line Information service designated on Drawings three (3) working days before performing Work.
  - 1. Request underground utilities to be located and marked within and surrounding construction areas.
  - 2. Contractor will not perform work prior to the expiration of the mandatory period unless all utilities have been located.
- B. Notify affected utility companies before starting work and comply with utility's requirements.
- C. Identify required lines, levels, contours, and datum.
- D. Notify utility company to remove and relocate utilities.

- E. Protect utilities indicated to remain from damage.
- F. Protect plant life, lawns, rock outcropping, and other features remaining as portion of final landscaping.
- G. Protect benchmarks, survey control point, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

### 3.3 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas to be further excavated, re-landscaped, or regraded without mixing with foreign materials for use in finish grading.
- B. Do not excavate wet topsoil.
- C. Stockpile in area designated on site and protect from erosion.
- D. Remove from site excess topsoil not intended for reuse.

### 3.4 SUBSOIL EXCAVATION

- A. Underpin adjacent structures which may be damaged by excavation work.
- B. Excavate subsoil to accommodate building foundations, structures, slabs-on-grade, paving, landscaping, and construction operations.
- C. Compact disturbed load bearing soil in direct contact with foundations to original bearing capacity.
- D. Slope banks with machine to angle of repose or less until shored.
- E. Do not interfere with 45-degree bearing splay of foundations.
- F. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- G. Trim excavation. Remove loose matter.
- H. Remove lumped subsoil, boulders, and rock up to 1/3 cubic yard measured by volume.
- I. Notify Engineer and testing agency of unexpected subsurface conditions.
- J. Correct areas over excavated with granular fill and compact as required for fill areas.
- K. Remove excess and unsuitable material from site.
- L. Repair or replace items indicated to remain damaged by excavation.
- M. Excavate subsoil from areas to be further excavated, re-landscaped, or regraded.

- N. Do not excavate wet subsoil or excavate and process wet material to obtain optimum moisture content.
- O. When excavating through roots, perform Work by hand and cut roots with sharp axe.
- P. Remove from site excess subsoil not intended for reuse.
- Q. Benching Slopes: Horizontally bench existing slopes greater than 3:1 to key placed fill material into slope to provide firm bearing.
- R. Stability: Replace damaged or displaced subsoil as specified for fill.

### 3.5 SHEETING AND SHORING

- A. Sheet, shore, and brace excavations to prevent danger to persons, structures, and adjacent properties and to prevent caving, erosion, and loss of surrounding subsoil.
- B. Support excavations more than five feet deep excavated through unstable, loose, or soft material. Provide sheeting, shoring, bracing, or other protection to maintain stability of excavation.
- C. Design sheeting and shoring to be left in place as part of the completed Work, cut off minimum 18 inches below finished subgrade, or design sheeting and shoring to be removed at completion of excavation work.
- D. Repair damage caused by failure of the sheeting, shoring, or bracing and for settlement of filled excavations or adjacent soil.
- E. Repair damage to new and existing Work from settlement, water, or earth pressure or other causes resulting from inadequate sheeting, shoring, or bracing.

### 3.6 SURFACE WATER CONTROL

- A. Control and remove unanticipated water seepage into excavation.
- B. Provide ditches, berms, and other devices to divert and drain surface water from excavation area as specified in Section 31 25 13 – Erosion Controls.
- C. Divert surface water and seepage water within excavation areas into sumps or settling basins prior to pumping water into drainage channels and storm drains.

### 3.7 DEWATERING

- A. Design and provide dewatering system to permit Work to be completed on dry and stable subgrade.
- B. Operate dewatering system continuously until backfill is minimum two feet above normal ground water table elevation.

- C. When dewatering system cannot control water within excavation, notify Engineer and stop excavation work.
  - 1. Supplement or modify dewatering system and provide other remedial measures to control water within excavation.
  - 2. Demonstrate dewatering system operation complies with performance requirements before resuming excavation operations.
- D. Modify dewatering systems when operation causes or threatens to cause damage to new construction, existing site improvements, adjacent property, or adjacent water wells.
- E. Discharge ground water and seepage water within excavation areas into sumps or settling basins prior to pumping water into drainage channels and storm drains.
- F. Remove dewatering and surface water control systems after dewatering operations are discontinued.

### 3.8 PROOF ROLLING

- A. Proof roll areas to receive fill, pavement and building slabs to identify areas of soft yielding soils.
  - 1. Use loaded tandem-axle pneumatic tired dump truck or large smooth drum roller.
  - 2. Load equipment to make a minimum of four passes with two passes perpendicular to the others.
- B. Undercut such areas to firm soil, backfill with granular fill and compact to density equal to or greater than requirements for subsequent fill material.
- C. Do not proof roll or undercut until soil has been dewatered.

### 3.9 BACKFILLING

- A. Scarify subgrade surface to depth of four inches.
- B. Compact subgrade to density requirements for subsequent backfill materials.
- C. Backfill areas to contours and elevations with unfrozen materials.
- D. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
- E. Place fill material in continuous layers and compact in accordance with Schedule at end of this Section.
- F. Employ placement method that does not disturb or damage other work.
- G. Maintain optimum moisture content of backfill materials to attain required compaction density.
- H. Support foundation walls and structures prior to backfilling.

- I. Backfill simultaneously on each side of unsupported foundation walls and structures until supports are in place.
- J. Slope grade away from building minimum two percent slope for minimum distance of 10 feet, unless noted otherwise.
- K. Make gradual grade changes. Blend slope into level areas.
- L. Remove surplus backfill materials from site.

### 3.10 BRIDGING DEGRADED SOILS

- A. If soil conditions degrade, spread an 18 to 24 inches granular fill material ahead of equipment. Use this lift to bridge degraded soils. Place subsequent lifts per Schedule.

### 3.11 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Top Surface of Backfilling Within Building and Paved Areas: Plus or minus one inch from required elevations.
- C. Top Surface of Backfilling Within Landscape Areas: Plus or minus two inches from required elevations.

### 3.12 PROTECTION

- A. Prevent displacement or loose soil from falling into excavation; maintain soil stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- C. Protect structures, utilities, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth operations.
- D. Repair or replace items indicated to remain damaged by excavation or filling.

### 3.13 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Independent laboratory, field inspecting, testing, adjusting, and balancing.
- B. Request visual inspection of bearing surfaces by Engineer and inspection agency before installing subsequent work.
- C. Laboratory Material Tests: In accordance with ASTM D1557 or AASHTO T180. [ASTM D698.]
- D. In-Place Compaction Tests: In accordance with the following:
  - 1. Density Tests: ASTM D1556, ASTM D2167, or ASTM D6938.

2. Moisture Tests: ASTM D6938.
- E. When tests indicate Work does not meet specified requirements, remove Work, replace, and retest.
- F. Frequency of Tests:
1. Building and Pavement Areas: Two (2) times per lift for every 5,000 square feet.
  2. Landscape Areas: Two (2) times per lift for every 10,000 square feet.

### 3.14 SCHEDULES

- A. Under Pavement and Slabs:
1. Maximum 8-inch compacted depth.
  2. Compact material to a minimum of 95 percent of maximum density, except the top 12 inches.
  3. Compact top 12 inches to a minimum of 98 percent of maximum density.
- B. Under Landscape Areas:
1. Maximum 8-inch compacted depth.
    1. Compact to minimum 90 percent of maximum density.
- C. Footing Foundation Fill:
1. Structural fill to maximum 12-inch compacted depth.
  2. Compact to 98 percent of maximum density.
- D. Bridge Lift Fill:
1. Granular fill in 18 to 24-inch lift on top of degraded soil.
  2. Place ahead of construction equipment.

END OF SECTION

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SECTION 31 23 16.13  
TRENCHING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavating trenches for utilities and utility structures.
2. Bedding.
3. Backfilling and compacting to subgrade elevations.
4. Sheeting and Shoring.
5. Dewatering.
6. Compacting backfill material.

B. Related Sections:

1. Section 31 23 16 - Excavation and Fill: Topsoil and subsoil removal from site surface.
2. Section 31 25 13 - Erosion Controls: Controlling sediment and erosion from Work of this section.
3. Section 33 42 13 – Stormwater Culverts: Corrugated polyethylene pipe and reinforced concrete pipe and fittings for circular, elliptical, and arch pipes.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. General: Work of this Section will not be measured for payment but is included in the unit cost for the various utilities and structures installed.

1.3 REFERENCES

A. SCDOT Standard Specifications:

1. Standard Specifications for Highway Construction, latest edition, published by the South Carolina Department of Transportation.

1.4 DEFINITIONS

- A. Utility: Any buried pipe, duct, conduit, or cable.
- B. Utility Structures: Manholes, catch basins, inlets, valve vaults, hand holes, and other utility access structures as indicated on Drawings.
- C. Trench Terminology:
1. Foundation: Area under bottom of trench supporting bedding.
  2. Bedding: Fill placed under utility pipe.
  3. Haunching: Fill placed from bedding to center line of pipe.
  4. Initial Backfill: Fill placed from center line to 6 to 12 inches above top of pipe.
  5. Final Backfill: Fill placed from initial backfill to subgrade.

## 1.5 UNIFIED SOIL CLASSIFICATION SYSTEM

- A. Class I
  - 1. ¼” – 1-1/2” well graded stone including coral, slag, cinders, crushed stone and crushed shells.
  
- B. Class II
  - 1. GW Coarse gravel well graded stone and crushed shells
  - 2. GP Coarse gravel poorly graded
  - 3. SW Coarse sands well graded
  - 4. SP Coarse sands poorly graded
  
- C. Class III
  - 1. GM Silty-sandy gravel
  - 2. GC Clayey-sandy gravel
  - 3. SM Silty-sands
  - 4. SC Clayey-sands
  
- D. Class IV
  - 1. ML Inorganic silts and fine sands
  - 2. CL Inorganic clays – low plasticity
  
- E. Fill material shall exhibit a plasticity index of less than 20 and Standard Proctor maximum density at optimum moisture greater than 90 pounds per cubic foot. The following materials are unacceptable.
  
- F. Class V
  - 1. OL Organic silts
  - 2. OH Organic clays
  - 3. PT Highly organic soil
  - 4. MH Inorganic elastic silts
  - 5. CH Inorganic clays – high plasticity

## 1.6 SUBMITTALS

- A. Section 01 34 00 - Shop Drawings, Product Data and Samples: Submittals.
  
- B. Excavation Protection Plan: Describe sheeting, shoring, and bracing materials and installation required to protect excavations and adjacent structures and property; include structural calculations to support plan. Prepare excavation protection plan under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of South Carolina.
  
- C. Dewatering Plan if required: Describe methods of dewatering and disposal of water.
  
- D. Product Data: Submit data for geotextile fabric indicating fabric and construction.

- E. Samples: Submit to testing laboratory, in air-tight containers, 10-pound sample of each type of fill.
- F. Materials Source: Submit name of imported fill material suppliers.
- G. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

#### 1.7 QUALITY ASSURANCE

- A. Perform Work in accordance with Division 200 of SCDOT Standard Specifications.
- B. Maintain one copy of document on site.

#### 1.8 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

#### 1.9 COORDINATION

- A. Section 01 40 00 - Quality Requirements: Submittals, Existing Site Conditions.
- B. Verify Work associated with lower elevation utilities is complete before placing higher elevation utilities.

### PART 2 PRODUCTS

#### 2.1 BACKFILL MATERIALS

- A. Subsoil Fill: Class II, III, or IV - Clean natural soil with a plasticity index of 15 or less that is free of clay, rock, or gravel lumps larger than 2 inches in any dimension; debris; waste; frozen material; and any other deleterious material that might cause settlement. Suitable material excavated from the site may be used as subsoil fill under optimum moisture conditions.
- B. Granular Fill: Class II, III - Clean sand, slightly silty sand, or slightly clayey sand having a Unified Soil Classification of SW, SP, SP-SM or SP-SC.
- C. Foundation Stone: Class I - Clean course aggregate Gradation No. 57 conforming to Division 200 of SCDOT Standard Specifications for Highway Construction, latest edition.
- D. Bedding and Haunching Material:
  - 1. Rigid Pipe: Granular Fill.
  - 2. Flexible Pipe: Foundation Stone.
- E. Bedding for Structures: Foundation Stone.
- F. Initial Backfill to 6 inches Minimum Above Utility:

1. Rigid Pipe: Subsoil Fill.
  2. Flexible Pipe: Foundation Stone.
- G. Final Backfill to Subgrade:
1. Under Pavement: Granular Fill.
  2. Under Landscape: Subsoil Fill.

## 2.2 ACCESSORIES

- A. Geotextile Fabric: Non-woven, non-biodegradable. from the following manufacturers:
1. Alkzo Nobel Geosynthetic Co.
  2. Huesker, Inc.
  3. TC Mirafi
  4. Tenax Corp.
  5. Tensar Earth Technologies, Inc.
  6. Substitutions: Equal per Section 01 34 00 – Shop Drawings, Product Data and Samples.
- B. Concrete: Class A Concrete conforming to Section 701 of the SCDOT Standard Specifications for Highway Construction, latest edition.
1. Compressive strength of 3,000 psi at 28 days.
  2. Air entrained.
  3. Water cement ratio of 0.488 with rounded aggregate and 0.532 with angular aggregate.
  4. Maximum slump of 3.5 inches for vibrated concrete and 4 inches for non-vibrated concrete.
  5. Minimum cement content of 564 lbs per cubic yard for vibrated and 602 lbs. per cubic yard for non-vibrated concrete.

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Call local utility line information service indicated on Drawings not less than three working days before performing Work.
1. Request underground utilities to be located and marked within and surrounding construction areas.
  2. Contractor will not perform work prior to the expiration of the mandatory period unless all utilities have been located.
- B. Notify affected utility companies before starting work and comply with utility's requirements.
- C. Identify required lines, levels, contours, and datum locations.
- D. Protect plant life, lawns, rock outcropping, and other features remaining as portion of final landscaping.

- E. Protect bench marks, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- F. Maintain and protect above and below grade utilities indicated to remain.
- G. Establish temporary traffic control and detours when trenching is performed in public right-of-way. Relocate controls and reroute traffic as required during progress of Work.

### 3.2 LINES AND GRADES

- A. Excavate to lines and grades indicated on Drawings.
  - 1. Owner reserves right to make changes in lines, grades, and depths of utilities when changes are required for Project conditions.
- B. Use laser-beam instrument with qualified operator to establish lines and grades.

### 3.3 TRENCHING

- A. Excavate subsoil required for utilities.
- B. Perform excavation within 48 inches of existing utility service in accordance with utility's requirements.
- C. Do not advance open trench more than 200 feet ahead of installed pipe.
- D. Remove water or materials that interfere with Work.
- E. Trench Width: Excavate bottom of trenches maximum 16 inches wider than outside diameter of pipe or as indicated on Drawings.
- F. Excavate trenches to depth indicated on Drawings. Provide uniform and continuous bearing and support for bedding material and pipe.
- G. Maintain vertical faces to an elevation equal to 12 inches above top of pipe.
  - 1. When Project conditions permit, side walls may be sloped or benched above this elevation.
  - 2. When side walls cannot be sloped, provide sheeting and shoring to protect excavation as specified in this Section.
- H. Support Utilities and Structures:
  - 1. Keep trench width at top of trench to practical minimum to protect adjacent or crossing utility lines
  - 2. Support utilities crossing trench by means acceptable to utility company.
  - 3. Do not interfere with 45-degree bearing splay of foundations.
  - 4. Provide temporary support for structures above and below ground.
- I. When subsurface materials at bottom of trench are loose or soft, excavate to firm subgrade or to depth directed by Engineer.

1. Cut out soft areas of subgrade not capable of compaction in place.
  2. Backfill with foundation stone and compact to density equal to or greater than requirements for subsequent backfill material.
- J. Trim Excavation: Hand trim for bell and spigot pipe joints where required. Remove loose matter.
- K. Correct areas over excavated areas with compacted backfill as specified for authorized excavation or replace with fill concrete as directed by Engineer.
- L. Place geotextile fabric over trench foundation stone prior to placing subsequent bedding materials.

### 3.4 SHEETING AND SHORING

- A. Sheet, shore, and brace excavations to prevent danger to persons, structures, and adjacent properties and to prevent caving, erosion, and loss of surrounding subsoil.
- B. Support trenches more than 5 feet deep excavated through unstable, loose, or soft material. Provide sheeting, shoring, bracing, or other protection to maintain stability of excavation.
- C. Design sheeting and shoring to be removed at completion of excavation work unless approved by Engineer.
- D. Repair damage caused by failure of the sheeting, shoring, or bracing and for settlement of filled excavations or adjacent soil.
- E. Repair damage to new and existing Work from settlement, water, or earth pressure or other causes resulting from inadequate sheeting, shoring, or bracing.

### 3.5 SURFACE WATER CONTROL

- A. Control and remove unanticipated water seepage into excavation.
- B. Provide ditches, berms, and other devices to divert and drain surface water from excavation area as specified in Section 31 25 13 – Erosion Controls.
- C. Divert surface water and seepage water within excavation areas into sumps or settling basins prior to pumping water into drainage channels and storm drains.

### 3.6 DEWATERING

- A. Design and provide dewatering system to permit Work to be completed on dry and stable subgrade.
- B. Operate dewatering system continuously until backfill is minimum 2 feet above normal ground water table elevation.

- C. When dewatering system cannot control water within excavation, notify Engineer and stop excavation work.
  - 1. Supplement or modify dewatering system and provide other remedial measures to control water within excavation.
  - 2. Demonstrate dewatering system operation complies with performance requirements before resuming excavation operations.
- D. Modify dewatering systems when operation causes or threatens to cause damage to new construction, existing site improvements, adjacent property, or adjacent water wells.
- E. Discharge ground water and seepage water within excavation areas into sumps or settling basins prior to pumping water into drainage channels and storm drains.
- F. Remove dewatering and surface water control systems after dewatering operations are discontinued.

### 3.7 BEDDING, HAUNCHING, AND INITIAL BACKFILL

- A. Place bedding full width of trench to the depth indicated on Drawings. Excavate for pipe bells.
- B. Install utility pipe and conduit in accordance with the respective utility section.
- C. Support pipe uniformly along entire length of pipe.
- D. Carefully place haunching material to center of pipe, rod and tamp material to fill voids and provide uniform support of pipe haunches.
- E. Carefully place initial backfill to 6 inches above top of pipe or to depth indicated on Drawings.
- F. Compact as indicated on the drawings.

### 3.8 FINAL BACKFILLING TO SUBGRADE

- A. Backfill trenches to contours and elevations with unfrozen fill materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.
- C. Place fill material in continuous layers and compact in accordance with schedule at end of this Section.
- D. Employ placement method that does not disturb or damage utilities in trench or foundation perimeter drainage.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.
- F. Do not leave more than 50 feet of trench open at end of working day.

G. Protect open trench to prevent danger to the public.

### 3.9 DISPOSAL OF EXCESS MATERIAL

A. Dispose of excess material offsite and legally.

B. Furnish Engineer with certificate of disposal site or agreement from private property owner.

### 3.10 TOLERANCES

A. Section 01 40 00 - Quality Requirements: Tolerances.

B. Top Surface of Backfilling: Plus or minus 1 inch from required elevations.

### 3.11 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

B. Perform laboratory material tests in accordance with ASTM D1557 or AASHTO T180. [ASTM D698.]

C. Perform in place compaction tests in accordance with the following:  
1. Density Tests: ASTM D1556, ASTM D2167, or ASTM D6938.  
2. Moisture Tests: ASTM D6938.

D. When tests indicate Work does not meet specified requirements, remove Work, replace, compact, and retest.

E. Frequency of Tests: Two tests per lift for every 1,000 feet of trench.

### 3.12 PROTECTION OF FINISHED WORK

A. Section 01 40 00 - Quality Requirements: Existing or Completed Utilities.

B. Reshape and re-compact fills subjected to vehicular traffic during construction.

### 3.13 SCHEDULE OF COMPACTION

A. Under Pavement and Slabs:

1. Granular Fill in maximum 8-inch loose lifts.
2. Compact to minimum 95 percent maximum density except the top 12 inches.
3. Compact top 12 inches to minimum 98 percent maximum density.

B. Under Landscape Areas:

1. Subsoil Fill in maximum 8-inch loose lifts.
2. Compact to minimum 90 percent maximum density.



- C. In Unstable or Unsuitable Trench Foundation Areas:
  - 1. Foundation Stone in maximum 12-inch loose lifts.
  - 2. Compact to 98 percent maximum density.

END OF SECTION

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SECTION 31 23 23.33

FLOWABLE FILL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The work covered by this specification consists of furnishing and placing flowable fill. Flowable fill is a controlled low strength material consisting of Portland cement, fly ash, fine aggregate, and water. It is suitable for filling underground storage tanks and pipe culverts and for back-filling culverts, bridges (where culverts or pipes are installed under a bridge), retaining walls, and roadway trenches.
- B. The Contractor shall submit the intended use of the flowable fill. The submittal shall be accompanied by a listing of compressive strength of at least three 4" x 8" cylinders at the age of 7 and 28 days. The Engineer will advise the Contractor in writing of the acceptability of the mix design.
- C. The Contractor may use flowable fill as an option to conventional fill and backfill methods with the approval of the Engineer.

1.2 UNIT PRICE – MEASUREMENT AND PAYMENT

- A. Basis of Measurement: 1) Flowable fill shall be measured per linear foot of material placed within each size of storm drain being abandoned or cubic yard of material placed within each storm structure being abandoned as shown on the drawings or as authorized by the Engineer. 2) Flowable fill in trenches as base for paving is incidental to the trench and replacement and will be included in the cost for permanent or temporary trench replacement.
- B. Basis of Payment: The Unit Price Bid per linear foot and cubic yard shall include cost for flowable fill, bulkheads, vent piping, injection piping, testing, reporting, monitoring, handling, rehandling, hauling, pipe and joint repair, dewatering, bypass pumping, waste removal, and all other labor, materials, equipment, and incidentals required to complete the Work as specified, as indicated on the drawings, or as directed by the Engineer.

1.3 DELIVERY, HANDLING, AND STORAGE

- A. Mixing and Delivery: The Contractor shall comply with the applicable portions of Section 32 13 13.
- B. Temperature Requirements: The temperature requirements of Section 32 13 13, Paragraph 1.7B & 1.7C., shall apply.

1.4 DESIGN REQUIREMENTS

- A. Composition and Design: The Contractor shall submit to the Engineer the proposed mix design(s) at least 35 day prior to use. Mix proportions shall be determined by a testing laboratory which has been approved by the SC Department of Transportation and shall be based on laboratory trial batches meeting the following requirements:

BATCH ITEM	FILL TO BE EXCAVATED	FILL TO REMAIN IN PLACE
Compressive Strength @ 28 Days	80-150 PSI Max	500 PSI Min.
Approximate Quantities Per C.Y.		
Cement	40-100 Lbs. Min.	150 Lbs. Min.
Fly Ash	250-600 Lbs. Min.	300 Lbs. Min.

Fine Aggregate	2000-2500 Lbs. SSD	2650 Lbs. SSD
Water	60 Gals	60 Gals

- 1.5 To achieve desired placement consistency, flowability may be adjusted by varying the water content approximately + or - 5 gallons per cubic yard without quantitative changes in other materials. Less flowable mixes are desirable when it is necessary to put traffic back on a roadway quickly (i.e., within 8 to 10 hours) or when less buoyant fill is needed to backfill pipes that could float out of position. Pipes that could float shall be anchored or placement shall be in stages to prevent the pipe from floating.

## PART 2 PRODUCTS

### 2.01 MATERIALS

All materials shall meet the requirements of S.C. Department of Transportation Standard Specifications For Highway Construction dated 2007, or current edition, Section 210.

- A. Steel plates shall be Grade A36 steel and of a size to cover openings completely and shall be of suitable thickness to support all traffic that may pass over the plate. Steel plates shall be solid with only small holes on the sides to aid in lifting and moving the plates.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. Placing: Flowable fill shall be discharged directly from the truck into the space to be filled, or by other methods approved by the Engineer. The mix may be placed full depth or in lifts as site conditions dictate. In roadway trenches, the flowable fill shall be brought level with the bottom of the pavement and then paved over. Between filling and paving operations, steel plates may be placed over the trench to accommodate traffic.

END OF SECTION

SECTION 31 25 13  
EROSION CONTROLS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes installing, maintaining and removing:
  - 1. Silt Fence.
  - 2. Temporary Construction Entrances.
  - 3. Fiber Rolls.
  - 4. Inlet Protection
  - 5. Grassing by Seeding, Sod, or Hydro-seeding
  
- B. Related Sections:
  - 1. Section 31 10 00 - Site Clearing.
  - 2. Section 31 23 16 - Excavation and Fill.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Silt Fence:
  - 1. Basis of Measurement: By linear foot.
  - 2. Basis of Payment: Includes excavating, furnishing stakes and wire fence, and furnishing geotextile fabric.
  
- B. Temporary Construction Entrance:
  - 1. Basis of Measurement: By each unit.
  - 2. Basis of Payment: Includes clearing, excavating, removing unsuitable material, backfilling, placing embankment, placing aggregate, and compaction.
  
- C. Fiber Roll:
  - 1. Basis of Measurement: By linear foot.
  - 2. Basis of Payment: Includes complete installation, maintenance, and removal.
  
- D. Inlet Protection:
  - 1. Basis of Measurement: By each unit.
  - 2. Basis of Payment: Includes excavating, placing posts and sediment tubes.
  
- E. Grassing by Seeding, Sod, or Hydro-seeding:
  - 1. Basis of Measurement: By square yard.
  - 2. Basis of Payment: Includes clearing, mulching, fine grading, planting and maintenance until replacing temporary grassing with permanent grassing or until permanent stabilization is established and accepted.

1.3 REFERENCES

- A. SCDOT Standard Specifications:

1. Standard Specifications for Highway Construction, latest edition, published by the South Carolina Department of Transportation.

#### 1.4 SUBMITTALS

- A. Section 01 34 00 – Shop Drawings, Product Data, and Samples: Requirements for submittals.
- B. Product Data: Submit data on geotextile, posts, woven wire, concrete mix design, and pipe.
- C. Manufacturer's Certificate: Certify products and aggregates meet or exceed specified requirements.
- D. Closeout Submittals: Section 01 70 00 - Contract Closeout:

#### 1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with Section 815 of SCDOT 2007 Standard Specifications For Highway Construction, or latest edition.
- B. Maintain one copy of document on site.

#### 1.6 PRE-INSTALLATION MEETINGS

- A. Section 01 22 00 - Project Meetings:
- B. Convene minimum one week prior to commencing work of this Section.

### PART 2 PRODUCTS

#### 2.1 GEOTEXTILE MATERIALS

- A. Engineering Fabric Materials: Non-biodegradable conforming to Section 815.2.5.2 of SCDOT Standard Specifications For Highway Construction, 2007.

#### 2.2 STONE, AGGREGATE, AND SOIL MATERIALS

- A. Washed Stone: Coarse aggregate, Section 305 of SCDOT Standard Specifications For Highway Construction, 2007. Aggregate for Construction Entrance: Section 815.4.14 of SCDOT Standard Specifications For Highway Construction, 2007.
- B. Soil Fill: Clean natural soil with a plasticity index of 15 or less that is free of clay, rock, or gravel lumps larger than 2 inches in any dimension; debris; waste; frozen material; and any other deleterious material that might cause settlement. Suitable material excavated from the site may be used as soil fill under optimum moisture conditions.

#### 2.3 PLANTING MATERIALS

- A. General: Conform to the construction plans for temporary and permanent seeding.

- B. Fertilizer: Commercial grade; recommended for grass.
- C. Lime: ASTM C602, Class O agricultural ground limestone containing a minimum 80 percent calcium carbonate equivalent.
- D. Mulch: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.

## 2.4 ACCESSORIES

- A. Posts for Silt Fence and Inlet Protection: Steel posts 5 feet long, 1-3/8 inches wide, minimum weight 1.25 lbs/ft. conforming to Section 815.2.12 of SCDOT Standard Specifications For Highway Construction, 2007.
- B. Woven Wire Fence for Silt Fence: Per Section 815 of SCDOT Standard Specifications For Highway Construction, 2007.
- C. Attachment Devices for Silt Fence: No. 9 staple, minimum 1-1/2 inches long, or other approved attachment devices.
- D. Hardware Cloth for Inlet Protection: 24 gage, 1/4-inch mesh opening hardware cloth.

## 2.5 SOURCE QUALITY CONTROL (AND TESTS)

- A. Section 01 40 00 - Quality Requirements: Testing, inspection, and analysis requirements.
- B. Perform tests on cement, aggregates, and mixes to ensure conformance with specified requirements.
- C. Make rock available for inspection at producer's quarry prior to shipment. Notify Architect/Engineer at least seven days before inspection is allowed.
- D. Allow witnessing of inspections and tests at manufacturer's test facility. Notify Architect/Engineer at least seven days before inspections and tests are scheduled.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01 40 00 - Quality Requirements: Existing site conditions.
- B. Verify compacted subgrade is acceptable and ready to support devices and imposed loads.
- C. Verify gradients and elevations of base or foundation for other work are correct.

### 3.2 SILT FENCE

- A. Install in accordance with the plans and Section 815 of SCDOT Standard Specifications For Highway Construction, 2007 at locations shown on Drawings.
- B. Use wire fence with Class A fabric.
- C. Class B fabric may be used without woven wire backing subject to the following:
  - 1. Fabric is approved by Architect/Engineer.
  - 2. Maximum post spacing is 6 feet.
  - 3. Posts are inclined toward runoff source not more than 20 degrees from vertical.

### 3.3 TEMPORARY CONSTRUCTION ENTRANCES

- A. Excavate and compact subgrade as specified in Section 31 23 16 – Excavation and Fill.
- B. Install construction entrances to the dimensions and locations as shown on Drawings. Minimum thickness is 6 inches.
- C. Mound aggregate near intersection with public road to prevent site runoff entering road.
- D. Periodically dress entrances with 2-inch-thick coarse aggregate when aggregate becomes clogged with soil.

### 3.4 INLET PROTECTION

- A. Install four posts around drainage structure and attach sediment tubes as indicated on Drawings.

### 3.5 SITE STABILIZATION

- A. Incorporate erosion control devices indicated on the Drawings into the Project at the earliest practicable time.
- B. Construct, stabilize, and activate erosion controls before site disturbance within tributary areas of those controls.
- C. Stockpile and waste pile heights shall not exceed 35 feet. Slope stockpile sides at 2:1 or flatter.
- D. Stabilize any disturbed area of affected erosion control devices on which activity has ceased and which will remain exposed for more than 20 days.
  - 1. During non-germinating periods, apply mulch at recommended rates.
  - 2. Stabilize disturbed areas which are not at finished grade, and which will be disturbed within one year.
  - 3. Stabilize disturbed areas which are either at finished grade or will not be disturbed within one year.

### 3.6 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.



- B. Inspect erosion control devices on a weekly basis and after each runoff event. Make necessary repairs to ensure erosion and sediment controls are in good working order.
- C. Perform laboratory material tests in accordance with ASTM D698 or AASHTO T180.
- D. Perform in place compaction tests in accordance with the following:
  - 1. Density Tests: ASTM D1556, ASTM D2167, or ASTM D6938.
  - 2. Moisture Tests: ASTM D6938.
- E. When tests indicate Work does not meet specified requirements, remove Work, replace, and retest.
- F. Frequency of Tests: Twice per lift for every 10,000 square feet.

### 3.7 CLEANING

- A. Section 01 71 00 - Cleaning Up:
- B. When sediment accumulation in sedimentation structures has reached a point one-half depth of sediment structure or device, remove, and dispose of sediment.
- C. Do not damage structure or device during cleaning operations.
- D. Do not permit sediment to erode into construction or site areas or natural waterways.
- E. Clean channels when depth of sediment reaches approximately one-half channel depth.

### 3.8 SCHEDULES

- A. Erosion Control Schedule:

Erosion Control Element	Location	Size
Silt Fence		
Temporary Construction Entrance		
Diversion Channel		
Sediment Trap		
Rock Lining (Rip Rap)		
Stone Check Dams		
Inlet Protection		
Sediment Pond		

END OF SECTION

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SECTION 32 11 23  
AGGREGATE BASE COURSES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Aggregate base course on a prepared subgrade.
- B. Related Sections:
  - 1. Section 31 23 16 - Excavation and Fill: Preparing subgrade under base course.
  - 2. Section 32 12 16 - Asphalt Paving: Binder and finish asphalt courses.
  - 3. Section 32 13 13 - Concrete Paving: Finish concrete surface course.
  - 4. Section 32 14 16 - Brick Unit Paving.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Coarse Aggregate:
  - 1. Basis of Measurement: By the square yard.
  - 2. Basis of Payment: Includes preparing subgrade, supplying aggregate, stockpiling, placing where required, and compacting. Aggregate used within trench limits area for storm sewer installation is considered incidental to that Work.
- B. Fine Aggregate:
  - 1. Basis of Measurement: By the square yard.
  - 2. Basis of Payment: Includes preparing subgrade, supplying aggregate, stockpiling, and placing where required. Aggregate used within trench limits area for storm sewer installation is considered incidental to that Work.

1.3 REFERENCES

- A. SCDOT Standard Specifications:
  - 1. Standard Specifications for Highway Construction, latest edition, published by the South Carolina Department of Transportation.

1.4 SUBMITTALS

- A. Section 01 34 00 - Shop Drawings, Product Data, and Samples: Requirements for submittals.
- B. Samples: Submit to testing laboratory 10-pound sample of each type of aggregate in airtight containers.
- C. Materials Source: Submit name of imported materials suppliers.
- D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

## 1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with SCDOT Standard Specifications.
- B. Maintain one copy of document on site.
- C. Furnish each aggregate material from single source throughout the Work.
- D. Use sources participating in SCDOT Aggregate Quality Assurance/Quality Control Program.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Aggregate Base Course: Coarse aggregate Type A or B with a gradation of ABC conforming to SCDOT Standard Specifications.
- B. Fine Aggregate: Sand gradation 1S or 2S conforming to SCDOT Standard Specifications.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01 40 00 - Quality Requirements: Existing Site Conditions
- B. Verify substrate has been inspected and gradients and elevations are correct and dry.

### 3.2 PREPARATION

- A. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and recompacting as specified in Section 31 23 16 – Excavation and Fill.
- B. Do not place fill on soft, muddy, or frozen surfaces.

### 3.3 AGGREGATE PLACEMENT

- A. Place aggregate in minimum 4-inch and maximum 10-inch layers and roller compact to specified density. When total thickness is 10 inches or less, place in one layer. When total thickness is greater than 10 inches, place in two equal layers.
- B. Have each layer of material compacted and approved prior to placing succeeding layers.
- C. Level and contour surfaces to elevations and gradients indicated on Drawings.
- D. Add small quantities of fine aggregate to coarse aggregate as appropriate to assist compaction.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.

- F. Use mechanical tamping equipment in areas inaccessible to roller compaction equipment.

### 3.4 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Maximum Variation from Thickness: 1/2 inch.
- C. Maximum Variation from Elevation: 1/2 inch.

### 3.5 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Independent laboratory, field inspecting, testing, adjusting, and balancing.
- B. Laboratory Material Tests: Conform to Modified Proctor ASTM D1557 or AASHTO T180. [Standard Proctor ASTM D698.]
- C. In-place Compaction Tests: Conform to:
  - 1. Density Tests: ASTM D1556, ASTM D2167, or ASTM D6938.
  - 2. Moisture Tests: ASTM D6938.
- D. Compaction:
  - 1. 100 percent of maximum when measured in-place by standard methods.
  - 2. 98 percent of maximum when measured in-place by nuclear methods.
- E. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.
- F. Frequency of Compaction Tests: Two tests per layer for every 5,000 tons of aggregate base course.

END OF SECTION

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SECTION 32 12 16  
ASPHALT PAVING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Asphaltic Concrete Paving: Surface, binder, and base courses.
  - 2. Prime Coat and Tack Coat.
  - 3. Surface Sealer.
  - 4. Quality Control and Testing.
  
- B. Related Sections:
  - 1. Section 31 23 16 - Excavation and Fill: Compacted subbase for paving.
  - 2. Section 32 11 23 - Aggregate Base Courses: Compacted base for paving.
  - 3. Section 32 13 13 - Concrete Paving: Concrete curbs.
  - 4. Section 32 17 23 - Pavement Markings.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Asphalt Base Course:
  - 1. Basis of Measurement: By square yard.
  - 2. Basis of Payment: Includes preparing base, prime coat, placing, compacting and rolling, and testing. NOTE: Asphalt paving replacement related to stormwater conveyance installation is considered incidental to that Work.
  
- B. Asphalt Surface Course (resurfacing):
  - 1. Basis of Measurement: By square yard.
  - 2. Basis of Payment: Includes tack coating surfaces, placing, compacting and rolling, and testing.

1.3 REFERENCES

- A. SCDOT Standard Specifications:
  - 1. Standard Specifications for Highway Construction, latest version, published by the South Carolina Department of Transportation.

1.4 SUBMITTALS

- A. Section 01 34 00 - Submittal Procedures: Requirements for submittals.
  
- B. Product Data: Submit product information and mix design.
  
- C. Manufacturer's Certification: Certify products are produced at a plant approved by SCDOT and that products meet or exceed specified requirements.

- D. Installer Certification: Certify installer is on list of SCDOT approved contractors with an approved Quality Control Plan.

## 1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with SCDOT Standard Specifications.
- B. Maintain on site one copy of each document.
- C. Obtain materials from same source throughout.
- D. Installer Qualification: Company specializing in performing work of this Section with minimum 5 years' experience.

## 1.6 ENVIRONMENTAL REQUIREMENTS

- A. Do not place asphalt base course or intermediate course when ambient air or road surface temperature is less than 35 degrees F. or surface is wet or frozen.
- B. Do not place asphalt surface course when ambient air or road surface temperature is less than 50 degrees F. or wet.
- C. Place bitumen mixture when temperature is not more than 15 degrees F. below temperature at when initially mixed and not more than maximum specified temperature.

## PART 2 PRODUCTS

### 2.1 MATERIALS

- A. Asphalt Plant Mix Materials: Conform to SCDOT Standard Specifications.
- B. Prime Coat and Tack Coat: Conform to SCDOT Standard Specifications.
- C. Reclaimed Asphalt Pavement (RAP): Processed material obtained by milling or full depth removal of existing asphalt concrete pavements. Conform to SCDOT Standard Specifications.
- D. Sand: Fine aggregate, gradation S1 or S2 conforming to SCDOT Standard Specifications.

### 2.2 ASPHALT PAVING MIX

- A. General: Use Superpave mix design conforming to SCDOT Standard Specifications For Highway Construction, latest edition.
- B. Base Course: Type B-25.0C.
- C. Intermediate Course: Type I-19.0C.
- D. Surface Course: Type S-9.5B.



- E. Wedging or Leveling Mix: Conform to intermediate course.
- F. Reclaimed Asphalt Pavement (RAP) Content: Use maximum 50 percent for base and intermediate courses, maximum 15 percent for surface course.

### 2.3 SOURCE QUALITY CONTROL AND TESTS

- A. Section 01 40 00 - Quality Requirements: Testing, inspection, and analysis requirements.
- B. Submit proposed mix design of each class of mix for review prior to beginning Work.
- C. Obtain materials from plant approved by SCDOT.
- D. Test plant samples in accordance with SCDOT Standard Specifications For Highway Construction, latest edition.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify compacted subgrade and aggregate base is dry and ready to support paving and imposed loads.
- B. Verify gradients and elevations of base are correct.
- C. Verify utility structure frames and lids are installed in correct position and elevation.

### 3.2 PRIME COAT

- A. Apply primer on aggregate base course at uniform rate of 0.2 to 0.5 gal/sq. yd. in accordance with SCDOT Standard Specifications For Highway Construction, latest edition.
- B. Apply primer to contact surfaces of curbs and gutters.
- C. Use clean sand to blot excess primer.

### 3.3 TACK COAT

- A. Apply tack coat on asphalt or concrete surfaces at uniform rate of 0.04 to 0.08 gallons/square yard in accordance with SCDOT Standard Specifications For Highway Construction, latest edition.
- B. Apply tack coat to contact surfaces of curbs and gutters.
- C. Coat surfaces of utility structures with oil to prevent bond with asphalt pavement. Do not tack-coat these surfaces.

### 3.4 PLACING ASPHALT PAVEMENT

- A. Install Work in accordance with SCDOT Standard Specifications For Highway Construction, latest edition.
- B. Place asphalt within 24 hours of applying prime coat or tack coat.
- C. Place asphalt in courses to the thicknesses and dimensions shown on the Drawings.
- D. Place binder and intermediate courses.
- E. Place surface course within 2 hours of placing and compacting binder course. When binder course is placed more than 24 hours before placing wearing course, clean surface and apply tack coat before placing wearing course.
- F. Place surface course to thicknesses and dimensions shown on the Drawings.
- G. Compact each course by rolling to specified density. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.
- H. Perform rolling with consecutive passes to achieve even and smooth finish without roller marks.

### 3.5 JOINTS

- A. Traverse Joints:
  - 1. When Work is suspended long enough to allow mixture to chill, construct transverse joint.
  - 2. Use butt joint when traffic will not pass over pavement.
  - 3. Use sloped wedge ahead of the end of pavement when traffic will pass over pavement. Place paper parting strip to removal of wedge.
  - 4. Tack coat edge of pavement prior to placing adjoining pavement.
- B. Longitudinal Joints:
  - 1. Tack the edge of longitudinal joints prior to placing adjoining pavement.
  - 2. Pinch joint by rolling immediately behind the paver.
  - 3. Offset longitudinal joints in each layer by approximately 6 inches.

### 3.6 TOLERANCES

- A. Density Compaction: Minimum of 92 percent of Maximum Specific Gravity ( $G_{mm}$ ).
- B. Flatness: Maximum variation of 1/8-inch measured with 10-foot straight edge.
- C. Compacted Thickness: Within 1/4-inch.
- D. Variation From Indicated Elevation: Within 1/2-inch.

### 3.7 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Independent testing firm, field testing, and inspecting.

- B. Perform Contractor Quality Control Program in accordance with SCDOT Standard Specifications For Highway Construction, latest edition.
- C. Take compaction tests every 2,000 linear feet or fraction thereof per day on pavement placed at the paver lay down width.
- D. Take 6-inch diameter full depth pavement cores every 2,000 linear feet or fraction thereof per day on pavement placed at the paver lay down width.
- E. When tests indicate Work does not meet specified requirements, remove Work, replace, and retest.

### 3.8 PROTECTION OF FINISHED WORK

- A. Section 01 04 60 - Control of Work and Materials: Care and Protection of Property.
- B. Immediately after placement, protect pavement from mechanical injury for seven days or until surface temperature is less than 140 degrees F.

END OF SECTION

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SECTION 32 13 13  
CONCRETE PAVING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Concrete sidewalks.
  - 2. Concrete median barriers.
  - 3. Concrete base and surface for parking areas and roads.
  - 4. Small miscellaneous slabs.
  - 5. ADA Ramps
  
- B. Related Sections:
  - 1. Section 31 23 16 - Excavation and Fill: Compacted subgrade for paving.
  - 2. Section 32 11 23 - Aggregate Base Courses: Compacted base for paving.
  - 3. Section 32 12 16 - Asphalt Paving: Asphalt wearing course.
  - 4. Section 32 17 23 - Pavement Markings.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Concrete Pavement:
  - 1. Basis of Measurement: By square yard. ADA ramps would be paid per each.
  - 2. Basis of Payment: Includes removal and replacement, forms, reinforcement and concrete, accessories, placing, finishing, curing, and testing.

1.3 REFERENCES

- A. American Association of State Highway Transportation Officials (AASHTO)
  - 1. AASHTO M 31 – Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement.
  - 2. AASHTO M 32 – Standard Specification for Steel Wire, Plain for Concrete Reinforcement.
  - 3. AASHTO M 148 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
  - 4. AASHTO M 282 – Standard Specification for Joint Sealants, Hot Poured, Elastomeric-Type, for Portland Cement Concrete Pavements.
  
- B. American Concrete Institute:
  - 1. ACI 301 - Specifications for Structural Concrete.
  - 2. [ACI 304 - Guide for Measuring, Mixing, Transporting, and Placing Concrete.]
  
- C. ASTM International:
  - 1. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
  - 2. ASTM A 497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.

3. ASTM A 615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
4. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.
5. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
6. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
7. ASTM D3406 – Standard Specification for Joint Sealant, Hot-Applied, Elastomeric-Type, for Portland Cement Concrete Pavements.

D. SCDOT Standard Specifications:

1. Standard Specifications for Highway Construction, latest edition, published by the South Carolina Department of Transportation.

#### 1.4 SUBMITTALS

A. Section 01 34 00 - Shop Drawings, Product Data and Samples:

B. Concrete Mix Design: Submit concrete mix design 30 days prior to use of concrete.

C. Product Data: Submit data on joint materials, admixtures, and curing compounds.

D. Manufacturer's Certification: Certify products are produced at a plant approved by SCDOT and that products meet or exceed specified requirements.

E. Installer Certification: Certify installer is on list of SCDOT prequalified contractors with an approved Quality Control Plan.

F. Process Control Plan: Submit process control plan for delivering and placing concrete.

#### 1.5 QUALITY ASSURANCE

A. Perform Work in accordance with Sections 720, SCDOT Standard Specifications For Highway Construction, 2007 except as modified herein.

B. Maintain one copy of document on site.

C. Obtain cementitious materials from same source throughout.

#### 1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section and prequalified by SCDOT.

B. Installer: Company specializing in performing Work of this Section and prequalified by SCDOT.

## 1.7 ENVIRONMENTAL REQUIREMENTS

- A. Section 00 21 13[14] - Instructions to Bidders [EPMS]: Environmental conditions affecting products on site.
- B. Do not place concrete when base surface temperature or air temperature in the shade is 40 degrees F and falling or surface is wet or frozen.
- C. Do not place concrete when air temperature in the shade is 95 degrees F and rising or when concrete temperature is greater than 95 degrees F.

## PART 2 PRODUCTS

### 2.1 FORM MATERIALS

- A. Slip Form Methods: Use slip form methods wherever possible.
- B. Fixed Form Materials: Metal conforming to SCDOT Standard Specifications.

### 2.2 JOINT MATERIALS

- A. General: Conform to SCDOT Standard Specifications.
- B. Joint Filler: Sponge rubber or cork type conforming to ASTM D1751 (AASHTO M213) or bituminous, non-extruding, resilient type conforming to ASTM D1752 (AASHTO M153), Type 1; thickness as indicated on Drawings.
- C. Silicone Sealant: Low modulus, cold applied, single component, chemically curing silicone material.
  - 1. Type NS: Non-sag silicone, toolable.
  - 2. Type SL: Self-leveling silicone, tooling not required.
- D. Rubber Asphalt Sealant: Hot poured rubber asphalt joint sealer conforming to AASHTO M282 (ASTM D3406).
- E. Bond Breaker:
  - 1. General: Product that does not stain or adhere to the sealant and is chemically inert and resistant to oils, gasoline, solvents, and primer.
  - 2. For On-Grade Pavements: Circular backer rod, diameter 25 percent larger than joint width.
    - a. Type L, For Cold Pour Sealants Only: Closed cell expanded polyethylene foam. Use with Type NS silicone only.
    - b. Type M, For Cold or Hot Pour Sealants: Closed cell polyolefin with closed skin over an open cell core.
  - 3. For Bridge Decks Only: Bond breaking tape, extruded polyethylene with pressure sensitive adhesive on one side, minimum 0.005 inches thick.

## 2.3 REINFORCEMENT

- A. General: Conform to SCDOT latest edition Standard Specifications.
- B. Reinforcing Steel: ASTM A615 (AASHTO M 31); 60 ksi yield grade; deformed billet steel bars; epoxy coated finish.
- C. Dowels and Tie Bars: ASTM A615 (AASHTO M 31); 60 ksi yield grade, plain steel, epoxy coated finish.
- D. Welded Wire Fabric Steel: Deformed type, ASTM A497; unfinished.

## 2.4 CONCRETE MATERIALS

- A. Concrete Materials: Provide fine aggregate, coarse aggregate, Portland Cement, fly ash, ground granulated blast furnace slag, water, air entraining agent, and chemical admixtures in accordance with SCDOT Standard Specifications For Highway Construction, 2007.

## 2.5 CONCRETE MIX

- A. Mix and deliver concrete in accordance with SCDOT Standard Specifications For Highway Construction, 2007.
- B. Roadway and Area Pavement concrete: Air entrained conforming to the following criteria:
  - 1. Flexural Strength: 650 psi at 28 days.
  - 2. Slump: 1.5 inch maximum for slip form method, 3 inches maximum for fixed form hand methods.
  - 3. Minimum Cement Content: 526 pounds/cubic yard.
  - 4. Maximum Water/Cement Ratio: 0.559.
  - 5. Air Entrainment: Between 4.5 and 5.5 percent.
- C. Class A Concrete for sidewalk, curb, curb and gutter, and other incidental site concrete: Air entrained, vibrated conforming to the following criteria:
  - 1. Compressive Strength: 3,000 psi at 28 days.
  - 2. Maximum Slump Vibrated: 3.5 inches.
  - 3. Minimum Cement Content: 564 pounds/cubic yard.
  - 4. Maximum Water/Cement Ratio for Angular Aggregate: 0.532.
  - 5. Maximum Water/Cement Ratio for Rounded Aggregate: 0.488.
  - 6. Air Entrainment: 6.0 percent plus or minus 1.5 percent.
- D. Use accelerating admixtures in cold weather only when approved by the Engineer in writing. Use of admixtures will not relax cold weather placement requirements.
- E. Use calcium chloride only when approved by the Engineer in writing.
- F. Use set retarding admixtures during hot weather only when approved by the Engineer in writing.



## 2.6 SOURCE QUALITY CONTROL AND TESTS

- A. Section 01 40 00 - Quality Requirements: Testing and Inspection Services.
- B. Submit proposed mix design of each class of concrete to independent firm for review prior to commencement of Work.
- C. Tests on cement, aggregates, and mixes will be performed to ensure conformance with specified requirements.
- D. Test samples in accordance with ACI 301 for compressive strength (cylinders) and flexural strength (beams.)

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify compacted base course is acceptable and ready to support paving and imposed loads.
- C. Verify gradients and elevations of base are correct.
- D. Verify utility structure frames and lids are installed in correct position and elevation.

### 3.2 PREPARATION

- A. Moisten base to minimize absorption of water from fresh concrete.
- B. Coat surfaces of manhole, catch basin, and other utility structure frames with oil to prevent bond with concrete pavement.
- C. Notify Engineer minimum 24 hours prior to commencement of concreting operations.

### 3.3 FORMING

- A. Place and secure forms to correct location, dimension, profile, and gradient.
- B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- C. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement.

### 3.4 REINFORCEMENT

- A. Place reinforcement as indicated on Drawings.

- B. Interrupt reinforcement at contraction and expansion joints.
- C. Place dowels to achieve pavement and curb alignment as detailed.
- D. Provide doweled joints 18 inches on center at transverse joints with one end of dowel set in capped sleeve to allow longitudinal movement.

### 3.5 PLACING CONCRETE

- A. Place concrete in accordance with SCDOT Standard Specifications.
- B. Place concrete using the slip form technique wherever possible.
- C. Ensure reinforcement, inserts, embedded parts, and formed joints are not disturbed during concrete placement.
- D. Place concrete continuously over the full width of the panel and between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.
- E. Place concrete to pattern indicated on Drawings.

### 3.6 PAVEMENT JOINTS

- A. Provide expansion, contraction, and construction joints as indicated on Drawings.
- B. Place expansion joints at 60 foot maximum intervals. Place contraction joints at 20-foot maximum intervals. Align pavement joints with curb, gutter, and sidewalk joints.
- C. Place joint filler between paving components and building or other appurtenances. Recess top of filler 1/2 inch for backer rod and sealant placement.
- D. Saw cut contraction joints 3/16 inch wide or as indicated at an optimum time after finishing. Cut 1/3 into depth of slab.

### 3.7 SIDEWALK, CURB, AND CURB AND GUTTER JOINTS

- A. Provide sawn joints at 5-foot intervals. Provide 3/4-inch expansion joint at 30 feet maximum and between sidewalks and curbs and structures.
- B. Align sidewalk, curb and gutter joints with pavement joints.

### 3.8 FINISHING

- A. Area Paving: Heavy broom.
- B. Sidewalk Paving: Light broom. [Brush to 6-inch radius with smooth trowel joint edges.]
- C. Median Barrier: Light broom and trowel joint edges.

- D. Curbs and Gutters: Light broom.
- E. Inclined Vehicular Ramps: V-grooves with mechanical equipment and spring tines, perpendicular to slope.

### 3.9 EXPOSED AGGREGATE

- A. Apply surface retarder where exposed aggregate finish is indicated.
- B. Wash exposed aggregate surface with clean water and scrub with stiff bristle brush exposing aggregate to match sample panel.
- C. Sand blast concrete surfaces to achieve aggregate exposure surface to match sample panel.

### 3.10 CURING

- A. Place curing compound on concrete surfaces immediately after finishing.
- B. Cover with burlap or polyethylene film to protect from cold weather and rain.

### 3.11 JOINT SEALING

- A. Separate pavement from vertical surfaces with 1/2-inch-thick joint filler.
- B. Place joint filler in pavement pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
- C. Extend joint filler from bottom of pavement to within 1/2 inch of finished surface.

### 3.12 TOLERANCES

- A. Maximum Variation of Surface Flatness: 1/4 inch in 10 feet.
- B. Maximum Variation From True Position: 1/2 inch.
- C. Maximum Variation in thickness: 1/2 inch.

### 3.13 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Prepare three concrete test beams for every 1,333 or less square yards of pavement for each class of concrete placed each day.
- C. Prepare one additional test beam during cold weather and cured on site under same conditions as concrete it represents.
- D. One slump test will be taken for each set of test cylinders taken.

- E. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.
- F. Take one 4-inch diameter core for every 1,333 square yards or less of pavement for each class of concrete placed each day.

### 3.14 PROTECTION

- A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury.
- B. Do not permit pedestrian or vehicular traffic over pavement for 7 days minimum after finishing.

### 3.15 SCHEDULES

- A. Concrete Sidewalks: Class A Concrete, compressive strength of 3,000 psi at 28 days, 4 inches thick, buff color Portland cement, light broom finish.
- B. Roadway Pavement Concrete: Non-reinforced, flexural strength of 650 psi at 28 days, 8 inches thick, wood float finish.

END OF SECTION

SECTION 32 14 16  
BRICK UNIT PAVING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Clay brick pavers.
  - 2. Bituminous setting bed.
  - 3. Curbs and borders.
  - 4. Control and expansion joints.
  
- B. Related Sections:
  - 1. Section 32 12 16 - Asphalt Paving: Bituminous base preparation.
  - 2. Section 32 13 13 - Concrete Paving: Concrete base preparation.
  - 3. Section 04 05 13 - Masonry

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Brick Pavers on Bituminous Bed:
  - 1. Basis of Measurement: By square yard
  - 2. Basis of Payment: Includes removal of existing pavers, preparation of substrate, bituminous setting bed, pavers, mortar joints, finishing.
  
- B. Brick Curbs and Border:
  - 1. Basis of Measurement: By linear foot
  - 2. Basis of Payment: Includes removal of existing curb, preparation of substrate, curbs, jointing.

1.3 REFERENCES

- A. American National Standards Institute:
  - 1. ANSI A118.4 - Latex-Portland Cement Mortar.
  
- B. ASTM International:
  - 1. ASTM A185/A185M - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
  - 2. ASTM C33 - Standard Specification for Concrete Aggregates.
  - 3. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar.
  - 4. ASTM C150 - Standard Specification for Portland Cement.
  - 5. ASTM C270 - Standard Specification for Mortar for Unit Masonry.
  - 6. ASTM C797 - Standard Terminology for Use of Oil- and Resin-Based Putty and Glazing Compounds.
  - 7. ASTM C902 - Standard Specification for Pedestrian and Light Traffic Paving Brick.
  - 8. ASTM C1272 - Standard Specification for Heavy Vehicular Paving Brick.

9. ASTM C1371[-2004a] - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.
10. ASTM C1549[-2004] - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
11. ASTM D946 - Standard Specification for Penetration-Graded Asphalt Cement for Use in Pavement Construction.
12. ASTM D1073 - Standard Specification for Fine Aggregate for Bituminous Paving Mixtures.
13. ASTM E408[-1971(1996)e1] - Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.
14. ASTM E903[-1996] - Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres.
15. ASTM E1918[-1997] - Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field.
16. ASTM E1980[-2001] - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

#### 1.4 SYSTEM DESCRIPTION

- A. Paving and Setting Bed: To accommodate pedestrian traffic.

#### 1.5 SUBMITTALS

- A. Section 01 34 00 - Submittal Procedures
- B. Shop Drawings: Indicate on shop drawings, layout of pavers, plan area layout, layout of curbs and borders, dimensions of paved areas, control joints, expansion joints, elevations, and affected adjacent construction.
- C. Product Data: Submit data on characteristics of paver unit, curbs and border, special shapes, dimensions, mortar, setting and grouting materials.
- D. Samples: Submit **five** sample pavers, curb, and border units illustrating color, surface finish, and texture.

#### 1.6 QUALITY ASSURANCE

- A. All produces and execution shall conform to applicable standards and specifications published by the following:
  1. The American Society for Testing and Materials (ASTM)
  2. American National Standards Institute (ANSI)
  3. National Concrete Masonry Institute (NCMA)
  4. Structural Clay Products Institute (SPCI)
  5. Underwriters Laboratories, Inc. (UL)

#### 1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

- B. Installer: Company specializing in performing work of this section with three years of documented experience and/or approved by the Product manufacturer.

## 1.8 MOCKUP

- A. Section 01 40 00 - Quality Requirements: Requirements for mockup.
- B. Construct mockup, 100 sq ft, including bituminous setting bed, brick pavers, curbs and border, joint sealers, control joint, expansion joint, and accessories to pattern indicated.
- C. Locate Engineer
- D. Incorporate accepted mockup as part of Work.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers:
  - 1. Manufacturer to be on pre-approved list of SCDOT. Substitutions: Section 01 34 00: 2.2 Variations

### 2.2 PAVER MATERIALS

- A. Pavers: ASTM C902, [Weather Class MX,] [Traffic Type I,] Application [PX], to the following characteristics:

### 2.3 CEMENTITIOUS MATERIALS

- A. Portland Cement: ASTM C150, Type I;. Sample color to be submitted to owner prior to installation.
- B. Sand: ASTM C144 sharp, coarse, clean, screened sand free from deleterious material.
- C. Latex-Portland Cement Mortar: ANSI A118.4.
- D. Water: Potable and not detrimental to mortar.
- E. Admixtures: Air entrainment to achieve 5-7\_percent.

### 2.4 BITUMINOUS MATERIALS

- A. Asphalt Cement: **ASTM D6373.**
- B. Fine Aggregate: **ASTM D1073**, sand, sharp, coarse, clean, screened to pass No. 4 sieve, free from deleterious material.

## 2.5 REINFORCEMENT

- A. Reinforcing Mesh: ASTM A185/A185M; **4x4 [W2.9 x W2.9]** ; galvanized steel.

## 2.6 ACCESSORIES

- A. Edging: Formed **galvanized steel**.
- B. Cleaning Solution: Type recommended by paver manufacturer.
- C. Joint Filler: To be selected from SCDOT Qualified Product List and approved by Engineer.
- D. Sealant: To be selected from SCDOT Qualified Product List and approved by Engineer.
- E. Neoprene Modified Asphalt Adhesive: To be selected from SCDOT Qualified Product List and approved by Engineer.

## 2.7 MIXES

- A. Bituminous Setting Bed: Bituminous mixture of 93percent dry fine aggregate and 7 percent hot asphalt cement.
- B. Add admixtures to cementitious mixes.
- C. Thoroughly mix ingredients in quantities required for immediate use.
- D. Use cementitious mixes within two hours after mixing. Do not re-temper.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01 40 00 - Quality Requirements: Coordination and project conditions.
- B. Verify substrate is ready to support pavers and imposed loads.
- C. Verify gradients and elevations of substrate are correct.

### 3.2 INSTALLATION - BITUMINOUS SETTING BED

- A. Place bituminous setting bed over prepared firm substrate to thickness of 3/4 inches.
- B. Apply bonding adhesive over bituminous setting bed with notched trowel, not to exceed 1/16 inch thickness.
- C. Place paver units in running bond pattern to match existing, from straight reference line.



- D. Spread sand over surface and sweep into joints. Moisten joints and recover with additional sand until firm joints are achieved. Remove excess sand.

### 3.3 CLEANING

- A. Section 01 71 00 - Cleaning Up: Final cleaning.
- B. Do not clean pavers until pavers and mortar are dry for minimum of three days.
- C. Clean soiled surfaces using cleaning solution. Do not harm pavers, joint materials, or adjacent surfaces.
- D. Use non-metallic tools in cleaning operations.
- E. Rinse surfaces thoroughly with clean water.
- F. Broom clean paving surfaces. Dispose of excess sand.

### 3.4 PROTECTION OF FINISHED WORK

- A. Section 01 04 60 - Control of Work and Materials: Care and Protection of Property..
- B. Protect paver surface with sheets of plywood for seven days.

END OF SECTION

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## SECTION 32 16 13

### CONCRETE CURBS, AND GUTTERS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

###### A. SECTION INCLUDES:

<u>Section</u>	<u>Title</u>
1.2	References
1.3	Work Included
1.4	Submittals
1.5	Quality Control
2.1	Materials
3.1	Preparation
3.2	Joints
3.3	Finishes
3.4	Construction
3.5	Curing

- B. This section provides general requirements for providing labor, materials, and equipment for the replacement of concrete sidewalks, curbs, and gutters disturbed by construction. However, it is the Contractor's responsibility to ensure all work meets the requirements of the SCDOT Standard Specifications For Highway Construction, 2007.

##### 1.2 UNIT PRICE – MEASUREMENT AND PAYMENT

- A. Basis of Measurement: By actual linear feet of curb and combination curb and gutter, all types and sizes, restored in accordance with these specifications, as shown on the drawings or as authorized by the Engineer.
- B. Basis of Payment: The Unit Price Bid per linear foot for curbs/curbs and gutter, all types and sizes, shall include cost for permit fees, maintenance charges and inspection fees required by all road departments and the furnishing of all materials, labor, tools, and appliances necessary to complete the Work as specified, as indicated on the drawings, or as directed by the Engineer. Included shall be the costs of additional excavation beyond trench width to provide firm foundation and any costs of furnishing necessary work beyond the limits of measurement as defined under these specifications. Removal, handling, hauling, and disposal of existing curb and gutter material will be considered incidental to this Pay Item and no additional compensation will be made.

##### 1.3 REFERENCES

- A. Drawings and general provisions of the Contract, including general and supplementary conditions and Division 1 Specification Sections, apply to this section.

#### 1.4 WORK INCLUDED

- A. The Contractor shall furnish all labor, equipment, and materials necessary to remove, handle, haul-off, and install concrete sidewalks, curbs, and gutters, as required for the rehabilitation, replacement, and/or installation of storm drainage systems and related appurtenances.

#### 1.5 SUBMITTALS

- A. The Contractor shall submit for approval, in accordance with Section 01 34 00 Shop Drawings, Product Data, and Samples and to SCDOT when work is within a state road right-of-way, all working drawings and schedules of materials and methods proposed to follow in the execution of the Work under this item.

#### 1.6 QUALITY CONTROL

- A. Tolerances: Construct concrete surfaces within 0.05 feet of the indicated elevation and deviating not more than 3/8-inch from a ten-foot straightedge placed anywhere on the surface.
- B. Strictly conform to requirements for compaction of subgrade, air entrainment of concrete and curing of concrete.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. Concrete: All concrete shall be Class 2500 in accordance with SCDOT Standard Specifications For Highway Construction, 2007, Section 720, and have a 28-day compressive strength of 2,500 psi.
- B. Joint filler: Non-extruding joint material, furnished in a single piece for the full depth and width required for the joint unless otherwise specified by the Engineer.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Excavate and compact the subgrade true to the indicated grade and cross section.
- B. Place forms or extrusion machine guides to exact elevation and location required. Visually check forms and machine guides and adjust where necessary to ensure smooth curves and transitions in grade. Provide close spacing on curves to maintain a smooth curve.

#### 3.2 JOINTS

- A. Expansion Joints: Install expansion joints at intervals as indicated, but not exceeding 40 feet for walks and curbs, and wherever new concrete abuts existing construction. Additional joints are to be placed at tangent points of circular curbs and other places

where stresses may develop.

B. Contraction (Control) Joints:

1. Sidewalks: Cut joints with a saw immediately after concrete reaches adequate hardness to allow sawing. Contraction joints in sidewalks shall be 3/4 inch deep and spaced at a distance equal to the width of the walk.
2. Curb and Gutter: For formed work, use full depth steel forms to achieve contraction joints. For extruded work, cut contraction joints with a saw immediately after concrete reaches adequate hardness to allow sawing. Contraction joints in curb and gutters shall be 1 1/2 inch deep and spaced at 10-foot intervals.

Concrete flatwork: Cut joints with a saw immediately after concrete reaches adequate hardness to allow sawing. Contraction joint depth shall be 1/4 of the concrete thickness. Spacing and pattern shall be as shown on plans or determined by Engineer.

- C. Premolded expansion joint filler must be cut to full cross section of the proposed construction and shall extend the full depth, width, and length of the construction. Trim expansion joint material protruding after the concrete has been finished as directed by the Engineer. All longitudinal expansion joints shall be placed as indicated on the drawings.

### 3.3 FINISHES

- A. Pedestrian and Wheelchair Ramps: Non-slip finish.
- B. All others: Broom finish.

### 3.4 CONSTRUCTION

- A. Place forms true to line, grade, and cross section.
- B. Brace forms adequately before placing the concrete. Place concrete in forms and thoroughly tamp, vibrate or work it into all corners, removing air pockets. Allow forms to remain in place until the concrete has set sufficiently to hold its shape.
- C. Begin each phase of screed, float, trowel and finish work as soon as the concrete can be properly worked. Completely finish sidewalks and flat work with forms in place.
- D. Remove forms on the front face of curbs as soon as the concrete will hold its shape and finish the face. For gutters, a strike-off template of the form and shape of the gutter shall be used to shape the top surface of the gutter. Round top edges of curb and edges of gutter using a radius tool matching the radius shown on the drawings. Finish the edges where templates have been removed or expansion joint material has been placed with an edging tool with a radius of not over 1/4-inch and then all lines or marks removed with a wet brush.
- E. Remove all tool marks with a wetted brush or wooden float, and the finished surface shall present a uniform and smooth appearance.

3.5 CURING

- A. Cure concrete as specified in Section 720.4.8 of SCDOT Standard Specifications For Highway Construction, 2007.

END OF SECTION

SECTION 32 17 23  
PAVEMENT MARKINGS

PART 1 GENERAL

1.1 SUMMARY

1. Traffic lines, legends and markings on asphalt and concrete surfaces.
2. Waterborne Traffic Paint.
3. Thermoplastic Pavement Markings.
4. Glass beads.

B. Related Sections:

1. Section 32 12 16 - Asphalt Paving.
2. Section 32 13 13 - Concrete Paving.

1.2 MEASUREMENT AND PAYMENT

- A. All work covered in this section will be paid for at the contract lump sum price for “SCDOT Pavement Markings”.

1.3 REFERENCES

A. SCDOT Standard Specifications:

1. Standard Specifications for Highway Construction, latest edition, published by the South Carolina Department of Transportation.

1.4 PERFORMANCE REQUIREMENTS

- A. Paint Adhesion: Adhere to road surface forming smooth continuous film one minute after application.
- B. Paint Drying: Tack free by touch so as not to require coning or other traffic control devices to prevent transfer by vehicle tires within ten minutes after application.

1.5 SUBMITTALS

- A. Section 01 34 00 - Shop Drawings, Product Data, and Samples: Requirements for submittals.
- B. Product Data: Submit paint formulation for each type of paint and glass beads if required.
- C. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
- D. Manufacturer's Installation Instructions: Submit instructions for application temperatures, eradication requirements, application rate, line thickness, and application of glass beads if required.

- E. Samples: Submit eight sample plates of each color of material. Prepare four plates without glass beads and four with glass beads for each different batch of material. After approval, Owner will retain these plates for field comparisons of applied paint.

## 1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with SCDOT Standard Specifications For Highway Construction, latest edition.
- B. Maintain one copy of document on site.

## 1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum five years' experience.
- B. Applicator: Company specializing in performing work of this section with minimum five years' experience.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Invert containers several days prior to use when paint has been stored more than two months. Minimize exposure to air when transferring paint. Seal drums and tanks when not in use.
- B. Where glass beads are required, store glass beads in cool, dry place. Protect from contamination by foreign substances.

## 1.9 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by paint product manufacturer or:
  - 1. Waterborne Paint: Apply when ambient air temperature and surface temperature is minimum 40 degrees F and rising and a maximum of 160 degrees F.
  - 2. Thermoplastic: Do not apply until ambient air temperature and temperature of the pavement is 50 degrees F or higher.
- B. Do not apply materials during rain or snow when relative humidity is outside humidity ranges or moisture content of surfaces exceed those required by paint product manufacturer.
- C. Volatile Organic Content (VOC). Do not exceed State or Environmental Protection Agency maximum VOC on traffic paint.

## PART 2 PRODUCTS

### 2.1 PAINTED PAVEMENT MARKINGS

- A. Furnish materials in accordance with SCDOT latest edition Standard Specifications For Highway Construction.



- B. Waterborne Paint: Ready mixed, fast dry waterborne traffic paints, lead-free, non-toxic, suitable for roadway or parking lots.
- C. Thermoplastic: Alkyd based ready mixed, fast dry, lead free, nontoxic, for roadways.
- D. Glass Beads: AASHTO M247, Type 1, coated to enhance embedment and adherence with paint.

## 2.2 EQUIPMENT

- A. Roadway Application for Continuous Longitudinal Lines: Use equipment with following capabilities.
  1. Dual nozzle paint gun to simultaneously apply parallel lines of indicated width in solid or broken patterns or various combinations of those patterns.
  2. Pressurized bead-gun to automatically dispense glass beads onto painted surface, at required application rate.
  3. Measuring device to automatically and continuously measure length of each line placed, to nearest foot.
  4. Device to heat paint to manufacturer's temperature recommendation for fast dry and thermoplastic applications.
- B. Machine Calibration: Calibrate machines to meet specified tolerances.
- C. Other Equipment: For application of crosswalks, intersections, stop lines, legends and other miscellaneous items by walk behind stripers, hand spray or stencil trucks, apply with equipment meeting requirements of this section. Do not use hand brushes or rollers. Optionally apply glass beads by hand.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01 40 00 – Quality Requirements: Verification of existing conditions before starting work.
- B. Do not apply paint to concrete surfaces until concrete has cured for 28 days.

### 3.2 PREPARATION

- A. Maintenance and Protection of Traffic:
  1. Provide short term traffic control in accordance with Section 01 50 00 - Temporary Facilities and Controls.
  2. Prevent traffic from interrupting or driving on newly applied markings before markings dry.
  3. Maintain roadway travel lanes between 7:00 a.m. to 9:00 a.m. and between 4:00 p.m. and 6:00 p.m.
  4. Maintain access to existing businesses and other properties requiring access.
- B. Surface Preparation.
  1. Clean and dry paved surface prior to painting.

2. Blow or sweep surface free of dirt, debris, oil, grease, or gasoline.
3. Spot location of final pavement markings as specified and as indicated on Drawings by applying pavement spots 25 feet on center.
4. Notify Engineer after placing pavement spots and minimum three days prior to applying traffic lines.

### 3.3 EXISTING WORK

- A. Remove existing markings in an acceptable manner. Do not remove existing pavement markings by painting over with black paint. Remove by methods that will cause least damage to pavement structure or pavement surface. Satisfactorily repair any pavement or surface damage caused by removal methods.
- B. Clean and repair existing or remaining lines and legends.

### 3.4 APPLICATION

- A. Agitate paint for 10-15 minutes prior to application to ensure even distribution of paint pigment.
- B. [Dispense paint at temperature recommended by manufacturer to wet-film thickness of 15 mils.
- C. [Dispense thermoplastic at temperature recommended by manufacture to thickness of:]
  1. 120 mils for center lines, skip lines, transverse markings, and legends.
  2. 90 mils for edge lines diagonals and arrow symbols.
- D. [Apply glass beads at rate of 1 to 3 pounds per gallon of paint.]
- E. Apply markings to indicated dimensions at indicated locations.
- F. Prevent splattering and over spray when applying markings.
- G. Unless material is track free at end of paint application convoy, use traffic cones to protect markings from traffic until track free.
- H. When vehicle crosses a marking and tracks it or when splattering or overspray occurs, eradicate affected marking and resultant tracking and apply new markings.
- I. Collect and legally dispose of residues from painting operations.

### 3.5 APPLICATION TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Maximum Variation from Wet Film Thickness: 1 mil.
- C. Maximum Variation from Wet Paint Line Width: Plus or minus 1/8 inch.
- D. Maintain cycle length for skip lines at tolerance of plus or minus six (6) inches per forty (40) feet and line length of plus or minus three (3) inches per ten (10) feet.

- E. Maximum Variation from Specified Application Temperature: Plus or minus 5 degrees F.

### 3.6 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Inspect for incorrect location, insufficient thickness, line width, coverage, retention, uncured or discolored material, and insufficient bonding.
- C. Repair lines and markings which after application and curing do not meet following criteria:
  - 1. Incorrect Location: Remove and replace incorrectly placed patterns.
  - 2. Insufficient Thickness, Line Width, Paint Coverage, Retention or Glass Bead Coverage (where required): Prepare defective material by acceptably grinding or blast cleaning to remove substantial amount of beads and to roughen marking surface. Remove loose particles and debris. Apply new markings on cleaned surface in accordance with this Section.
  - 3. Uncured or Discolored Material, Insufficient Bonding: Remove defective markings in accordance with this Section and clean pavement surface one foot beyond affected area. Apply new markings on cleaned surface in accordance with this Section.
- D. Replace failed or defective markings in entire section of defective markings within 30 days after notification when any of the following exists:
  - 1. Marking is discolored or exhibits pigment loss and is determined to be unacceptable by visual comparison with beaded color plates.
  - 2. If glass beads are used, the average retro-reflectivity is less than 375 mcd/m<sup>2</sup>/1x for white pavement markings and 250 mcd/m<sup>2</sup>/1x for yellow pavement markings.
- E. When eradication of existing paint lines is necessary, eradicate by shot blast or water blast method. Do not gouge or groove pavement more than 1/16 inch during removal. Limit area of removal to area of marking plus one inch on all sides. Prevent damage to transverse and longitudinal joint sealers and repair any damage according to requirements in Section 32 12 16 - Asphalt Paving or Section 32 13 13 – Concrete Paving.
- F. Maintain daily log showing work complete, results of inspections or tests, pavement and air temperatures, relative humidity, presence of any moisture on pavement, and any material or equipment problems. Make legible entries in log in ink, sign, and submit by end of each work day. Enter environmental data into log prior to starting work each day and at two additional times during day.

### 3.7 PROTECTION OF FINISHED WORK

- A. Section 01 04 60 - Control of Work and Materials: Care and Protection of Property.
- B. Protect painted pavement markings from vehicular and pedestrian traffic until paint is dry and track free. Follow manufacturer's recommendations or use minimum of 30 minutes. Consider barrier cones as satisfactory protection for materials requiring more than two minutes dry time.

### 3.8 SCHEDULES

#### A. Pavement Markings:

<b>Items</b>	<b>Location</b>
4 inch white paint	Parking lot lines
4 inch yellow paint	Parking lot lane lines
24 inch white thermoplastic	Stop line
4 inch yellow thermoplastic	Roadway center lines
4 inch white thermoplastic	Roadway edge lines

END OF SECTION

SECTION 32 31 29  
WOOD FENCE AND GATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes

1. Construction of wood fences and gates.
2. On utility projects:
  - a. When the existing fence is within the project Site (i.e. parallel to the utility trench and/or within utility easement) and is directly disturbed by construction activities, fencing will be paid for as listed in Article 1.2 below.
  - b. When existing fence is outside of the limits of the project Site or is identified as protected on the Drawings and is disturbed and/or by construction activities, replacement will be at the expense of the Contractor and no other compensation will be allowed.

1.2 UNIT PRICE – MEASUREMENT AND PAYMENT

A. Fencing

1. Basis of Measurement: By linear foot to fence height specified, based on specified post spacing.
2. Basis of Payment: Includes gates, posts, rails, slats, accessories, attachments, excavation, and concrete footing.

1.3 REFERENCES

A. Reference Standards

1. Reference standards cited in this specification refer to the current reference standard published at the time of the latest revision date logged at the end of this specification, unless a date is specifically cited.
2. American Society for Testing and Materials (ASTM):
  - a. A 123, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

1.4 SYSTEM DESCRIPTION

- A. Fence Height: As documented existing in the field or as indicated on Drawings.
- B. Line Post Spacing: As documented existing in the field or as indicated on Drawings., 8 feet maximum.
- C. Gates: As documented existing in the field or as indicated on Drawings.

1.5 SUBMITTALS

- A. Section 01 34 00 - Shop Drawings, Product Data, and Samples: Requirements for submittals.
- B. Shop drawings: Layout of fences and gates with dimensions, details, and finishes of

components, accessories, and post foundations

- C. Product data: Manufacturer’s catalog cuts indicating material compliance and specified options

## 1.6 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Contract Closeout: Closeout procedures.
- B. Project Record Documents: Accurately record actual locations of property perimeter posts relative to property lines and easements.
- C. Operation and Maintenance Data: Procedures for submittals.

## 2.1 PART 2 – PRODUCTS

### A. MATERIALS

- 1. General
  - a. Gate hinges and post caps shall be of steel, malleable iron, ductile iron or equal.
  - b. Post tops may be of aluminum.
- 2. Slats: Pressure treated free from all major decay or defects which would weaken or otherwise cause them to be unsuitable for fence slats.
- 3. Bottom and Top Rail: Minimum 2-inch x 4-inch x 8-foot pressure treated or match existing.
- 4. Corner, Gate, End, or Line Posts
  - a. Wood Posts
    - 1) Minimum size: 4-inch x 4-inch pressure treated wood post or match existing
    - 2) Free from all decay, splits, multiple cracks, or any other defect which would weaken the posts or otherwise cause them to be structurally unsuitable for the purpose intended
- 5. Accessories
- 6. Setting Materials
  - a. Concrete
    - 1) Minimum 28-day compressive strength of 3,000 psi
    - 2) Bagged concrete allowed.

## PART 3 - EXECUTION

### 3.1 INSTALLERS [NOT USED]

### 3.2 EXAMINATION

#### A. Verification of Conditions

- 1. Verify areas to receive fencing are completed to final grades and elevations.
- 2. Ensure property lines and legal boundaries of work are clearly established.

### 3.3 PREPARATION [NOT USED]

### 3.4 INSTALLATION

A. Wood Fence Framing

1. Locate terminal post at each fence termination and change in horizontal or vertical direction of 30 degrees or more.
2. Space line posts uniformly at 8 feet on center.
3. Set all posts in concrete.
  - a. Drill holes in firm, undisturbed or compacted soil.
  - b. Drill hole diameter 4 times greater than outside dimension of post (minimum 12 inches).
  - c. Set post bottom 24 inches below surface when in firm, undisturbed soil.
  - d. Excavate deeper as required for adequate support in soft and loose soils, and for posts with heavy lateral loads.
  - e. Place concrete around posts in a continuous pour.
  - f. Trowel finish around post. Slope to direct water away from posts.
4. Check each post for vertical and top alignment and maintain in position during placement and finishing operations.

B. Slats

1. Place slats approximately 1 inch above the ground, and on a straight grade between posts by excavating high points of the ground.
2. Fasten slats to top and bottom railings with 2 galvanized screws designed for wood fence construction at both the top and bottom rail.

END OF SECTION

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SECTION 33 05 13.16  
PUBLIC MANHOLES AND STRUCTURES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Precast reinforced concrete manholes and structures with tongue-and-groove joints with masonry transition to frames, lids, grates, anchorage, and accessories.
2. Masonry manhole and structure sections with masonry transition to frames, lids, grates, anchorage, and accessories.
3. Cast-in-place concrete manholes and structures with masonry transition to frames, lids, grates, covers, anchorage, and accessories.
4. Structure connections to existing public utility lines.
5. Bedding and backfill materials.

B. Related Sections:

1. Section 31 23 16.13 - Trenching
2. Section 33 42 13 – Stormwater Culverts

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Manholes:

1. Basis of Measurement: By each for various structure types, sizes and materials.
2. Basis of Payment: Includes excavating, bedding, concrete foundation slab, concrete structure sections, brick or concrete masonry structure construction, brick masonry transition to frame, frame and cover, forming and sealing pipe inlets and outlets, backfilling, and testing.

1.3 REFERENCES

A. American Concrete Institute:

1. ACI 530/530.1 - Building Code Requirements for Masonry Structures and Specifications for Masonry Structures.

B. ASTM International:

1. ASTM A48 - Standard Specification for Gray Iron Castings.
2. ASTM C32 - Standard Specification for Sewer and Manhole Brick (Solid Masonry Units Made From Clay or Shale).
3. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
4. ASTM C55 - Standard Specification for Concrete Brick.
5. ASTM C443 – Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber gaskets.
6. ASTM C478 - Standard Specification for Precast Reinforced Concrete Manhole Sections.
7. ASTM C497 - Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile.

8. **[ASTM C857 - Standard Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures.]**
  9. ASTM C891 - Standard Practice for Installation of Underground Precast Concrete Utility Structures.
  10. ASTM C990 - Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.
- C. National Precast Concrete Association:
1. NPCA Quality Control Manual for Precast Plants.
  2. NPCA Plant Certification Program.
- D. SCDOT Standard Specifications:
1. Standard Specifications for Highway Construction, latest edition, published by the South Carolina Department of Transportation.

#### 1.4 SUBMITTALS

- A. Section 01 34 00 – Shop Drawings, Product Data and Samples
- B. Shop Drawings:
1. Standard Fabrication: Indicate structure locations, elevations, sections, equipment support, piping sizes, and elevations of penetrations.
  2. Custom Fabrication: Indicate design, construction and installation details, typical reinforcement and additional reinforcement at openings for each custom type, size and configuration.
- C. Product Data: Submit manhole frames and lids, accessories, component construction, features, configuration, dimensions, and joint data.
- D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
- E. Project Record Documents: Record actual locations of manholes and structures with rim and invert elevations.
- F. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

#### 1.5 QUALITY ASSURANCE

- A. Obtain precast concrete utility structures from single source.
- B. Perform Work in accordance with SCDOT Standard Specifications.
- C. Maintain one copy of document on site.

## 1.6 QUALIFICATIONS

- A. Manufacturer: Certified by NPCA Plant Certification Program prior to and during Work of this section.
- B. Installer: Company specializing in performing work of this Section with minimum five years experience.
- C. Design custom utility structures under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of South Carolina.

## 1.7 DELIVERY, STORAGE AND HANDLING

- A. Comply with precast concrete manufacturer's instructions and ASTM C913 for unloading, storing and moving precast manholes and drainage structures.
- B. Store precast concrete manholes and drainage structures to prevent damage to Owner's property or other public or private property. Repair property damaged from materials storage.
- C. Mark each precast structure by indentation or waterproof paint showing date of manufacture, manufacturer and identifying symbols, and numbers shown on Drawings to indicate its intended use.

## 1.8 ENVIRONMENTAL REQUIREMENTS

- A. Masonry Work: Maintain materials and surrounding air temperature to minimum 50 degrees F prior to, during, and 48 hours after completion of masonry work.
- B. Cold Weather Requirements: ACI 530/530.1.

## PART 2 PRODUCTS

### 2.1 PRECAST REINFORCED MANHOLES AND STRUCTURES

- A. Precast Manhole and Structure Sections: Reinforced precast concrete in accordance with ASTM C478.
  - 1. Joints for Precast Manholes and Structures for Other Utility uses: Butyl rubber gaskets in accordance with ASTM C990.

### 2.2 MASONRY CONSTRUCTION

- A. Concrete Brick: ASTM C55, Grade S, Type II - Non-moisture controlled; except that the absorption of brick shall not exceed 10 lbs / cubic foot.
- B. Clay or Shale Brick: ASTM C32, Grade SW, solid units.
- C. Mortar: Conform to the SCDOT Standard Specifications proportioned as described below. Do not add more water than is necessary to make a workable mixture.

1. Mix No. 1: 1 part Portland cement, 1/4 part hydrated lime, 3-3/4 parts mortar sand (maximum).
  2. Mix No. 2: 1 part Portland cement, 1 part masonry cement, 6 parts mortar sand (maximum).
- D. Grout: Non-shrink, non-metallic in accordance with SCDOT Standard Specifications with a compressive strength of at least 5,000 psi at 3 days.

## 2.3 CAST-IN-PLACE CONCRETE

- A. Concrete: Class 4000 Concrete conforming to section 719 of the SCDOT Standard Specifications For Highway Construction.

## 2.4 FRAMES AND COVERS

- A. Per section 719 in SCDOT Standard Specifications For Highway Construction, 2007.

## 2.5 CONFIGURATION

- A. Provide size and shape as indicated on Drawings.
- B. Foundation Slab: Cast-in-place or precast reinforced concrete integral with bottom section, level top surface.

## 2.6 ACCESSORIES

- A. Steps: Conform to local agency requirements, minimum 12 inches wide spaced vertically 16 inches on center.
- B. Strap Anchors: Stainless steel capable of supporting pipe or accessories indicated on Drawings, minimum 1-inch-wide x 1/8 inch thick.
- C. Geotextile Filter Fabric: SCDOT Standard Specifications; non-woven, needle punched, non-biodegradable, and rot-proof.

## 2.7 BEDDING AND BACKFILL MATERIALS

- A. Bedding: Clean coarse aggregate Gradation No. 57 conforming to SCDOT Standard Specifications.
- B. Backfill around Structures: As specified in Section 31 23 16.13 -Trenching.

# PART 3 EXECUTION

## 3.1 EXAMINATION

- A. Verify items provided by other Sections of Work are properly sized and located.
- B. Verify built-in items are in proper location and ready for roughing into Work.

- C. Verify correct size of manhole and structure excavation.

### 3.2 PREPARATION

- A. Coordinate placement of inlet and outlet pipe or duct sleeves required by other Sections.
- B. Do not install manholes and structures where site conditions induce loads exceeding structural capacity of manholes or structures.
- C. Inspect precast concrete manholes and structures immediately prior to placement in excavation to verify manholes and structures are internally clean and free from damage. Remove and replace damaged units.

### 3.3 INSTALLATION – GENERAL

- A. Excavation and Backfill:
  - 1. Excavate and backfill for manholes and structures in accordance with Section 31 23 16.13 - Trenching in location and to depth shown. Provide clearance around sidewalls of manhole or structure for construction operations, backfill, and placement of geotextile filter fabric if required.
  - 2. When groundwater is encountered, prevent accumulation of water in excavations. Place manholes or structures in dry trench.
  - 3. Where possibility exists of watertight manhole or structure becoming buoyant in flooded excavation, anchor manhole or structure to avoid flotation.
- B. Place foundation slab, trowel top surface level.
- C. Place precast manhole sections plumb and level, trim to correct elevations, anchor to foundation slab.
- D. As Work progresses, install steps and other fabricated metal items.
- E. Install cast-in-place manholes and structures supported at proper grade and alignment as shown on Drawings.
- F. Cut pipe to connect to structure as indicated on Drawings.
- G. Grout base of shaft sections to achieve slope to exit piping. Trowel smooth. Contour to form continuous drainage channel as indicated on Drawings.
- H. Set cover frames and covers level without tipping, to correct elevations.

### 3.4 PRECAST CONCRETE MANHOLE AND STRUCTURE INSTALLATION

- A. Install underground precast utility structures in accordance with ASTM C891.
- B. Lift precast manholes and structures at lifting points designated by manufacturer.

- C. When lowering manholes and structures into excavations and joining pipe to units, take precautions to ensure interior of pipeline and manhole or structure remains clean.
- D. Set precast manholes and structures as required by SCDOT Standard Specifications for Precast Items.
- E. Assemble multi-section manholes and structures by lowering each section into excavation. Install rubber gasket joints between precast sections in accordance with manufacturer's recommendations. Lower, set level, and firmly position base section before placing additional sections.
- F. Remove foreign materials from joint surfaces and verify sealing materials are placed properly. Maintain alignment between sections by using guide devices affixed to lower section.
- G. Joint sealing materials may be installed on site or at manufacturer's plant.
- H. Verify manholes and structures installed satisfy required alignment and grade.
- I. Remove knockouts or cut structure to receive piping without creating openings larger than required to receive pipe. Fill annular space with non-shrink grout.

### 3.5 MASONRY MANHOLE AND STRUCTURE INSTALLATION

- A. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- B. Lay masonry units in running bond. Course one unit and one mortar joint to equal 8 inches.
- C. Form flush mortar joints.
- D. Lay masonry units in full bed of mortar, with full head joints, uniformly jointed with other Work.
- E. Install joint reinforcement 16 inches on center.
- F. Place joint reinforcement in first and second horizontal joints above base pad and below cover frame opening.

### 3.6 CAST-IN-PLACE CONCRETE MANHOLE AND STRUCTURE INSTALLATION

- A. Prepare crushed stone bedding or other support system shown on Drawings to receive foundation slab as specified for precast manholes and structures.
- B. Erect and brace forms against movement in accordance with the SCDOT Standard Specifications.
- C. Install reinforcing steel as indicated on Drawings and in accordance with the SCDOT Standard Specifications.
- D. Place and cure concrete in accordance with the SCDOT Standard Specifications.

### 3.7 CASTINGS INSTALLATION

- A. Set frames using mortar and masonry as indicated on Drawings. Install radially laid concrete brick with 1/4-inch-thick vertical joints at inside perimeter. Lay concrete brick in full bed of mortar and completely fill joints. Where more than one course of concrete brick is required, stagger vertical joints.
- B. Do not install more than 3 courses of brick or more than 12 inches of masonry.

### 3.8 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Perform soil compaction tests in accordance with Section 31 23 16.13 - Trenching.
- C. Test cast-in-place concrete in accordance with ASTM C39.
- D. Test concrete manhole and structure sections in accordance with ASTM C497.
- E. Vertical Adjustment of Existing Manholes and Structures:
  - 1. Where required, adjust top elevation of existing manholes and structures to finished grades shown on Drawings.
  - 2. Reset existing frames, grates and covers, carefully removed, cleaned of mortar fragments, to required elevation in accordance with requirements specified for installation of castings.
  - 3. Remove concrete without damaging existing vertical reinforcing bars when removal of existing concrete wall is required. Clean vertical bars of concrete and bend into new concrete top slab or splice to required vertical reinforcement, as indicated on Drawings.
  - 4. Clean and apply sand-cement bonding compound on existing concrete surfaces to receive cast-in-place concrete.

END OF SECTION

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SECTION 33 42 13  
STORMWATER CULVERTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Pipe culverts.
  - 2. Joints and accessories.
  - 3. Bedding.
  - 4. Slope protection at pipe end.
  
- B. Related Sections:
  - 1. Section 31 23 16.13 - Trenching

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

- A. Pipe and Fittings;
  - 1. Basis of Measurement: By the linear foot for various pipe sizes, materials, and depth of bury.
  - 2. Basis of Payment: Includes excavation, bedding, pipe, fittings, backfill, and asphalt/base course section
  
- B. Concrete Collars:
  - 1. Basis of Measurement: Per each for the various pipe sizes.
  - 2. Basis of Payment: Includes excavating, concrete, forming & backfill.

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials:
  - 1. [AASHTO M294 – Standard Specification for Corrugated Polyethylene Pipe, 300- to 1,500-mm (12- to 60-In.) Diameter.]
  
- B. ASTM International:
  - 1. [ASTM C76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.]
  - 2. [ASTM C443 - Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.]
  - 3. [ASTM C506 - Standard Specification for Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe.]
  - 4. [ASTM C507 - Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe.]
  - 5. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
  - 6. [ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.]

- C. Standard Specifications:
  - 1. SCDOT Standard Specifications for Highway Construction, latest edition, published by the SC Department of Transportation.

#### 1.4 SUBMITTALS

- A. Section 01 34 00 - Shop Drawings, Product Data and Samples.
- B. Product Data: Submit data on pipe, fittings and accessories.
- C. Manufacturer's Installation Instructions: Submit special procedures required to install Products specified.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Contract Closeout
- B. Project Record Documents:
  - 1. Accurately record actual locations of pipe runs, connections, and invert elevations.
  - 2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.
- C. Operation and Maintenance Data:
  - 1. Provide any manufacturer directions for operation and maintenance of products.

### PART 2 PRODUCTS

#### 2.1 STORM DRAINAGE PIPING

- A. Reinforced Concrete Pipe (RCP): ASTM C76, bell and spigot or tongue and groove ends.
  - 1. Pipe Class: Class [III] [IV] [V] with Wall Type [B] [A] [C].
  - 2. Fittings: Reinforced concrete.
  - 3. Joints: ASTM C443, rubber compression gasket.
- B. Reinforced Non-Circular Concrete Pipe:
  - 1. Reinforced Concrete Arch Pipe: ASTM C506, Class [A-II], [A-III] [A-IV].
  - 2. Reinforced Horizontal Elliptical Concrete Pipe: ASTM C507, Class [HE-A] [HE-I] [HE-II] [HE-III] [HE-IV].
  - 3. Reinforced Vertical Elliptical Pipe: ASTM C507, Class [VE-II] [VE-III] [VE-IV] [VE-V] [VE-VI].
- C. HDPE Corrugated Polyethylene Pipe: AASHTO M294, Type S or Type D.
  - 1. Fittings: PVC conforming to pipe specifications.
  - 2. Joints: ASTM F477, elastomeric gaskets.

#### 2.2 BEDDING AND COVER MATERIALS

- A. General: Conform to Section 31 23 16.13 - Trenching for bedding and backfill around and on top of pipe.

- B. Bedding for Rigid Pipe (RCP): Clean sand, slightly silty sand, or slightly clayey sand having a Unified Soil Classification of SP, SP-SM or SP-SC.
- C. Bedding for Flexible Pipe (HDPE): Clean course aggregate Gradation No. 57 conforming to SCDOT Standard Specifications for Highway Construction, latest edition, published by the SC Department of Transportation.
- D. Cover and Fill: Conform to Section 31 23 16.13 - Trenching.

### 2.3 ACCESSORIES

- A. Geotextile Fabric: Non-woven, non-biodegradable conforming to SCDOT Standard Specifications for Highway Construction, latest edition, published by the SC Department of Transportation for Type 1 Engineering Fabric.
- B. Concrete: Class 2500 Concrete conforming to section 701 of SCDOT Standard Specifications for Highway Construction, latest edition, published by SC Department of Transportation.
- C. Concrete: Class 3000 Concrete conforming to section 701 of SCDOT Standard Specifications for Highway Construction, latest edition, published by SC Department of Transportation.
- D. Class 4000 Concrete conforming to section 70 of SCDOT Standard Specifications for Highway Construction, latest edition, published by SC Department of Transportation.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01 40 00 Quality Requirements: Verification of existing conditions before starting work.
- B. Verify trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on Drawings.

### 3.2 PREPARATION

- A. Remove large stones or other hard matter which could damage piping or impede consistent backfilling or compaction.

### 3.3 EXCAVATION AND BEDDING

- A. Excavate pipe trench in accordance with Section 31 23 16.13 - Trenching.
- B. Excavate to lines and grades shown on Drawings or required to accommodate installation of encasement.

- C. Dewater excavations to maintain dry conditions and preserve final grades at bottom of excavation.
- D. Provide sheeting and shoring in accordance with Section 31 23 16.13 - Trenching.
- E. Place bedding material at trench bottom, level continuous layer in accordance with plan details.
- F. Maintain optimum moisture content of bedding material to attain required compaction density.

### 3.4 INSTALLATION – PIPE

- A. Install in accordance with manufactures instructions and as indicated on Drawings.
- B. Install plastic pipe, fittings, and accessories in accordance with ASTM D2321.
- C. Seal joints watertight.
- D. Begin at downstream end and progress upstream.
- E. Keep pipe and fittings clean until work is completed and accepted by Engineer.
- F. Lay bell and spigot pipe with bells upstream.
- G. Repair surface damage to pipe with protective coating with two coats of compatible bituminous paint coating.
- H. Install cover at sides and over top of pipe

### 3.5 PIPE ENDS

- A. Place fill at pipe ends to match embankment slopes, concrete aprons, adjacent construction, end sections, or end walls as indicated on Drawings.

### 3.6 ERECTION TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Lay pipe to alignment and slope gradients noted on Drawings; with maximum variation from indicated slope of 1/8 inch in 10 feet.
- C. Maximum Variation from Intended Elevation of Culvert Invert: 1/2 inch.
- D. Maximum Offset of Pipe From Indicated Alignment: 1 inch.
- E. Maximum Variation in Profile of Structure from Intended Position: 1 percent.

### 3.7 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Request inspection prior to and immediately after placing bedding.
- C. Soil Compaction Testing: In accordance with Section 31 23 16.13 - Trenching.
- D. When tests indicate Work does not meet specified requirements, remove work, replace, and retest.

### 3.8 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01 70 00 - Contract Closeout: Protecting installed construction.
- B. Protect pipe and bedding from damage or displacement until backfilling operation is in progress.

END OF SECTION

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## SECTION 34 41 16.10

### TRAFFIC CONTROL

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. The work covered by this section consists of furnishing, erecting, maintaining, relocating, and removing traffic control devices for maintenance of traffic during construction operations.

##### 1.2 REFERENCES

- A. All work performed is to be in accordance with:
- The South Carolina Department of Transportation Standard Specifications For Highway Construction, latest edition.
  - The Manual on Uniform Traffic Control Devices (MUTCD).
  - Any project plans or sketches.
  - Any project special provisions.

##### 1.3 MEASUREMENT AND PAYMENT

- A. All work covered in this section will be paid for at the contract lump sum price for “Traffic Control”.

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. The Contractor shall use interim pavement marking paint as described in the most recent edition of The SCDOT Standard Specifications For Highway Construction, latest edition.
- B. Traffic cones may be used when approved by the City Engineer. When cones are used, they shall be either double stacked or have special heavy bottoms such that they will not be blown over by traffic.
- C. All traffic control devices furnished by the Contractor shall remain the property of the Contractor, unless otherwise required by the Special Provisions.

#### PART 3 EXECUTION

##### 3.01 PREPARATION

- A. Street Closure
1. Intended street closures must be requested, in writing to the City of Georgetown Engineer, a minimum of five (5) working days prior to the desired closure date. The

request shall state the street name, the from and to locations, and the length of closure time of the individual street to be closed.

2. The request must also be accompanied by a traffic control plan, showing the detour information of through traffic. This plan must be in accordance with the current edition of the MUTCD.
3. After approval, in writing, the Contractor bears full responsibility for the closure to include installation, maintenance and removal of all traffic control devices, as well as all implied liability.

- B. No work shall start until all the traffic control devices required for the particular work activity have been installed, inspected, and approved by the City Engineer or his representative.

### 3.02 TEMPORARY ROAD CLOSURE

- A. Conditions represented are for work that requires closings during daytime hours only.
- B. This application is intended for a planned temporary closing not to exceed 15-20 minutes.
- C. The flaggers shall stop the first vehicle from the position shown, then move to the centerline to stop approaching traffic.
- D. A portable message sign may be used in addition to the initial warning sign.
- E. NOTE: The spacing between signs has a recommended standard of 200' but can be modified by the City Engineer according to the location of the workspace.

### 3.03 LANE CLOSURE ON MINOR STREET

- A. The traffic control procedure shown is appropriate only for low volume, low speed facilities, such as local residential streets.
- B. Traffic can regulate itself when volumes are low and the length of the workspace is short, thus enabling drivers to readily see the roadway beyond.
- C. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
- D. NOTE: The spacing between signs has a recommended standard of 200' but can be modified by the City Engineer according to the location of the workspace.

### 3.04 SIDEWALK CLOSURES

- A. Additional advance warning may be necessary.
- B. Only the traffic control devices controlling pedestrian flows are shown. Other devices may be needed to control traffic on the streets. Use lane closure signing as required.

### 3.05 INSTALLATION

- A. The furnishing, erecting, maintaining, relocating, and removing of traffic control devices will be in accordance with the current edition of *The Manual on Uniform Traffic Control Devices* for streets and highways.
- B. All traffic control devices must be in place before beginning work each day, removed during intervals when work is not ongoing and removed at the end of the workday.
- C. The Contractor shall not obstruct or impede any of the traffic on adjacent streets while installing traffic control or doing construction work.
- D. The Contractor shall not close a lane to through traffic at night and during periods of



construction inactivity, unless otherwise approved by the Engineer.

- E. The Engineer may restrict the Contractor from placing lane closures during certain hours, holidays, or special events because traffic may be unusually heavy. All lane closure types, hours of installation and lengths, will be controlled by and required to be approved by the Engineer.
- F. When working within the travel way, the Contractor shall use a standard lane closure or a moving operation caravan utilizing a shadow vehicle and truck mounted impact attenuator, as approved by the City Engineer. A moving operation caravan shall only be used if the marker operation maintains a minimum speed of 3 MPH at all times with no stops that would narrow or close a lane of travel.
- G. The use of police and/or trained flaggers to control traffic through the work site will be provided by the Contractor as required. The Contractor will be responsible for obtaining trained personnel to direct traffic and contacting local authorities for use of police for traffic control where applicable.
- H. Time limitation for placement and replacement on pavement markings and markers completed by contractors on newly resurfaced areas:
  - 1. Marking By Contractor
    - a. Divided and Multi-Lane Facilities
      - 1) For all Interstate highways and access ramps, place all markings including symbols and legends, by the end of each workday's operation.
      - 2) For all divided and multi-lane facilities, place all center line and lane line markings and railroad and school symbols and stop bars by the end of each workday's operation. Place all edge lines, gore lines, and other symbols within 3 calendar days after they have been obliterated by the resurfacing operation.
      - 3) A Multi-lane facility is defined as any roadway having more than two lanes to include a two-lane, two-way with two-way center left turn lane.
    - b. Two-Lane, Two-Way Facilities
      - 1) For all two-lane, two-way facilities, place all centerline markings, railroad and school symbols within 5 calendar days after they have been obliterated by the resurfacing operation. Place all edge lines and other symbols within 15 calendar days after they have been obliterated by resurfacing operations.
    - c. All Facilities
      - 1) Place two applications of paint on newly resurfaced asphalt which will remain in place over three (3) months. Place the second application of paint upon ample drying time of the first, as determined by the Engineer.
      - 2) Install permanent markers within sixty (60) calendar days after completing the resurfacing on each map.

END OF SECTION

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SECTION 40 27 23  
DUCTILE IRON PIPE AND FITTINGS

PART 1 GENERAL

1.1 SCOPE

- A. Provide all labor, materials, equipment and incidentals necessary to construct all ductile iron pipe and appurtenances as shown on the Drawings and as specified herein.

1.2 SUBMITTALS

- A. Complete shop drawings and product data on all piping and fittings shall be submitted to the Engineer in accordance with the requirements of Section 01 33 00 of these Specifications.
- B. Shop drawings shall indicate piping layout in plan and/or elevations and shall include a complete schedule of all pipe, fittings, specials, hangers and supports. Special castings shall be detailed showing all pertinent dimensions. Special coatings shall be clearly identified.
- C. The Contractor shall furnish the Inspector with lists of all pieces of pipe and fittings in each shipment received. These lists shall give the serial or mark number, weight, class, size and description of each item received.
- D. The Contractor shall submit written evidence to the Engineer that the products furnished under this section will conform to the material and mechanical requirements specified herein. Certified copies of independent laboratory test results or mill test results from the pipe supplier may be considered evidence of compliance provided such tests are performed in accordance with the appropriate testing standards by experienced, competent personnel. In case of doubt as to the accuracy or adequacy of mill tests, the Engineer may require that the Contractor furnish test reports from an independent testing laboratory on samples of pipe materials.

1.3 MEASUREMENT AND PAYMENT

- A. Basis of Measurement: The work and products described in this section are considered incidental to the line items “Utility Relocations (Water)”, “Utility Relocations (Sanitary Sewer)” and will not be measured for individual payment.

PART 2 PRODUCTS

2.1 DUCTILE IRON PIPE (DIP)

- A. Ductile iron pipe shall be utilized where shown on the Drawings.
- B. Ductile iron pipe shall be manufactured in accordance with AWWA C151. All pipe, except specials, shall be furnished in nominal lengths of 18 to 20 feet. Sizes will be as shown on the Drawings. All pipe shall have a minimum pressure rating as indicated in the following table, and corresponding minimum wall thickness, unless otherwise specified or shown on the

Drawings:

Pipe Sizes (inches)	Pressure Class (psi)
4 - 12	350
14 - 18	350

## 2.2 FITTINGS AND ACCESSORIES

- A. Fittings shall be ductile iron and shall conform to AWWA C110/ANSI A21.10 or AWWA C153/ANSIA21.53 with a minimum rated working pressure of 250 psi.
- B. Flanged elbow fittings shall be ANSI pattern using short radius elbows except where noted differently on the Drawings. Special fittings, ductile iron wall pipes and sleeves shall conform to the dimensions and details as shown on the Drawings.
- C. Solid sleeves shall permit the connection of plain end ductile iron pipe. Solid sleeves shall meet the requirements of ANSI/AWWA C110 for pattern and have a minimum pressure rating of 250 psi. Solid sleeves shall have mechanical or restrained joints as specified in this section and as shown on the Drawings. Solid sleeves shall be used only in locations shown on the Drawings or at the direction of the Engineer.

## 2.3 JOINTS

### A. General

- 1. Unless shown or specified otherwise, joints for buried service shall be push-on or restrained joint type for pipe and standard mechanical, push-on or restrained joints for fittings. Joints for exposed service shall be flanged for pipe and fittings, unless shown otherwise.
- 2. Provide the necessary bolts for connections. All bolts and nuts shall be threaded in accordance with ANSI B1.1, Coarse Thread Series, Class 2A external and 2B internal fit. All bolts and nuts shall be made in the U.S.A.
- 3. In all cases, gaskets shall be made of material that will not be damaged by the fluid being transported nor by the environment in which the pipe is installed.

### B. Push-On and Mechanical Joints

- 1. Joints shall conform to AWWA C111/ANSI A21.11.
- 2. Bolts and nuts shall be Tee Head bolts and nuts of high strength low-alloy steel in accordance with ASTM A 242 to the dimension shown in AWWA C111/ANSI A21.11.
- 3. Gaskets shall be in accordance with AWWA C111/ANSI A21.11 and shall be constructed of plain rubber unless otherwise shown on the Drawings.

4. Mechanical joint glands shall be ductile iron.

## 2.4 EXTERIOR COATINGS

- A. The exterior of pipe and fittings for buried service shall be factory coated with an asphaltic coating conforming to AWWA C151/ANSI 21.51 for ductile iron pipe, AWWA C115/ANSI 21.15 for flanged pipe and AWWA C110/ANSI 21.10 for fittings. Pipe and fittings which shall be exposed or submerged shall be factory coated with a general purpose rust inhibitive primer compatible with the type of paint which will be field applied.
- B. Exposed or submerged pipe, fittings, valves and supports shall be field coated using a three-coat epoxy system to a minimum 12.0 mils dry film thickness with 4.0 mils minimum thickness each coat.
- C. Epoxy coating system for exposed or submerged piping systems shall be Tnemec Series 66 Epoxoline II, or Sherwin-Williams . Top coat color shall be Charleston Green.

## 2.5 INTERIOR LINING

- A. Water Mains shall use cement mortar lining complying with ANSI/AWWA C104/A21.4, standard thickness.
- B. Sewers shall include interior lining system equal to Protecto 401 or Tnemec Perma-Shield 431.

## 2.6 RETAINER GLANDS

Retainer glands for ductile iron pipe shall be Megalug Series 1100, as manufactured by EBAA Iron, Uni-Flange Series 1400, as manufactured by Ford Meter Box Company, or Star Pipe Products StarGrip Series 3000.

## PART 3 EXECUTION

### 3.1 CUTTING

- A. When new or existing pipe is required to be cut, the pipe shall be cut in such a manner as to leave a smooth end normal to the axis of the pipe.
- B. All cutting of ductile iron pipe shall be performed with a cutting saw. All burrs shall be removed from the inside and outside edges of all cut pipe. All damaged linings and coatings shall be repaired.

### 3.2 JOINT ASSEMBLY

- A. General: Ductile iron pipe shall be assembled in accordance with ANSI/AWWA C600.
- B. Push-On Joints: The inside of the bell and the outside of the pipe from the plain end to the guide stripe shall be wiped clean immediately before assembling the pipe joint. Then the rubber

gasket shall be inserted into a groove or shaped recess in the bell. Both the bell and spigot ends to be joined shall be wiped again to ensure they are thoroughly clean. A liberal coating of special lubricant furnished by the pipe manufacturer shall be applied to the outside of the pipe. The plain end shall be centered in the bell and the spigot pushed home.

### C. Mechanical Joints

1. The surfaces with which the rubber gasket comes in contact shall be brushed thoroughly with a wire brush just prior to assembly to remove all loose rust or foreign material which may be present and to provide clean surfaces which shall be brushed with a liberal amount of soapy water or other approved lubricant just prior to slipping the gasket over the spigot end and into the bell. Lubricant shall be brushed over the gasket prior to installation to remove loose dirt and lubricate the gasket as it is forced into its retaining space.
2. Joint bolts shall be tightened by the use of wrenches and to a tension recommended by the pipe manufacturer. When tightening bolts, the gland shall be brought up toward the pipe bell. If effective sealing is not attained at the maximum torque indicated above, the joint shall be disassembled and reassembled after thorough cleaning. Overstressing of bolts to compensate for poor installation shall not be permitted.
3. After installation, bolts and nuts in buried piping shall be given two heavy coats of a bituminous paint. Bolts and nuts for exposed or submerged service shall be coated in accordance with the Article 2.5 of these Specifications.

### 3.3 DRILLING AND TAPPING

- A. Wherever required ductile iron pipe and fittings shall be drilled and tapped to receive any other piping. All holes shall be drilled accurately at right angles to the axis of any pipe or fitting. Where plugs are drilled, holes shall be at right angles to the face of the plug.
- B. Unless shown otherwise, small diameter pipes, 2-inches and less, shall be connected to ductile iron pipe using one of the following methods:
  1. Direct tap.
  2. Direct tap with service clamp.
  3. Direct tap boss.
  4. Tapped plug or flange on tapping saddle.
- C. In no case shall the effective number of threads be less than 4.

### 3.4 CONSTRUCTING WITHIN STRUCTURES

- A. Proper and suitable tools and appliances for safe and convenient handling and laying of pipe and fittings shall be used. Care shall be taken to prevent the pipe coating from being damaged,

particularly cement linings on the inside of the pipes and fittings. Any damage shall be remedied as directed by the Engineer.

- B. All pipe and fittings shall be carefully examined by the Contractor for defects just before installing and no pipe or fitting shall be installed if it is defective. If any defective pipe or fitting is discovered after having been installed, it shall be removed and replaced in a satisfactory manner with a sound pipe or fitting by the Contractor at Contractor's own expense.
- C. All pipes and fittings shall be thoroughly cleaned before they are installed and shall be kept clean until they are used in the completed work. Open ends of pipe shall be kept plugged with a bulkhead during construction.
- D. All elbows, tees, brackets, crosses, and reducers in pressure piping systems shall be adequately restrained against thrust.
- E. Wall pipe and wall sleeves shall be accurately located and securely fastened in place before concrete is poured. All wall pipe and sleeves shall have wall collars properly located to be in the center of the wall where the respective pipes are to be installed. Pipe passing through the sleeve shall extend no more than three feet beyond the structure without a piping joint.
- F. Wall pipe and wall sleeves shall be constructed when the wall or slab is constructed. Blocking out or breaking of the wall for later installation shall not be permitted.
- G. Cutting or weakening of structural members to facilitate pipe installation shall not be permitted. All piping shall be installed in place without springing or forcing.
- H. Exposed ductile iron piping shall be supported as shown on the Drawings.

### 3.5 DISINFECTION

After testing, disinfect potable water mains as specified in Section 40 27 25.

### 3.6 TESTING

- A. All sections of pipeline subject to internal pressure shall be pressure tested in accordance with AWWA C600. A section of line will be considered ready for testing after completion of all thrust restraint and backfilling.
- B. Each segment of pipeline between line valves shall be tested individually.
- C. Coordinate testing with the Owner and Engineer a minimum of 48 hours in advance and allow witnessing of testing.
- D. Test Preparation
  - 1. Flush pipeline section thoroughly at flow velocities greater than 2.5 feet per second, adequate to remove debris from pipe and valve seats. Partially operate valves and hydrants to clean out seats. Provide correctly sized temporary outlets in number adequate

to achieve flushing velocities.

2. Provide temporary blocking, bulkheads, flanges and plugs as necessary, to assure all new pipe, valves and appurtenances will be pressure tested.
  3. Before applying test pressure, air shall be completely expelled from the pipeline and all appurtenances. Unless permanent air vents are in place, insert temporary corporation stops at highpoints to expel air as line is filled with water.
  4. Fill pipeline slowly with water. Provide a suitable pump with an accurate water meter to pump the line to the specified pressure. Differential pressure at valves and hydrants shall equal the maximum possible, but shall not exceed manufacturer's pressure rating. Where necessary, provide temporary back pressure to meet the differential pressure restrictions.
  5. Valves and hydrants shall not be operated in either the opening or closing direction at differential pressures above their rated pressure.
- E. The test pressure shall be measured at the lowest point in the test segment and shall be maintained for a minimum of two hours. Minimum test pressure shall be 150 psi.
- F. Maintain the test pressure within 5 psi of the specified test pressure for the test duration. Should the pressure drop more than 5 psi at any time during the test period, the pressure shall be restored to the specified test pressure. Provide an accurate pressure gage with graduation not less than 5 psi.
- G. Leakage: Leakage shall be defined as the quantity of water that must be pumped into the test section equal to the sum of the water, to maintain pressure within 5 psi of the specified test pressure for the test duration plus water required to return line to test pressure at the end of the test. Leakage shall be the total cumulative amount measured on a water meter.
- H. The Owner assumes no responsibility for leakage occurring through existing valves.
- I. Test Results: No test section shall be accepted if the leakage exceeds the limits determined by the following formula:

$$L = \frac{SD(P)^{1/2}}{133,200}$$

Where: L = allowable leakage, in gallons per hour  
S = length of pipe tested, in feet  
D = nominal diameter of the pipe, in inches  
P = average test pressure during the leakage test, in pounds per square inch (gauge)

As determined under Section 4 of AWWA C600.

If the pipe section being tested contains lengths of various pipe diameters, the allowable



leakage shall be the sum of the computed leakage for each diameter. The leakage test shall be repeated until the test section is accepted. All visible leaks shall be repaired regardless of leakage test results.

- J. Completion: After a pipeline section has been accepted, relieve test pressure. Record type, size and location of all outlets on record drawings. Provide documentation of test results using Engineer's test forms.

END OF SECTION

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SECTION 40 27 25  
DISINFECTION OF POTABLE WATER LINES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Provide disinfection of potable water lines as specified herein, and as needed for a complete and proper installation.

1.2 REFERENCES

- A. American Water Works Association (AWWA):
  - 1. C-651: Disinfecting Water Mains.
  - 2. B-300: Standard for Hypochlorites.

1.3 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. All work shall comply with South Carolina Department of Health and Environmental Control (SCDHEC) State Primary Drinking Water Regulations.
- C. All work shall conform to provisions of AWWA C-651 for water line distribution.
  - 1. Do not use Tablet Method or Slug Method therein.

1.4 SUBMITTALS

- A. Comply with pertinent provisions of Section 01 33 00.
- B. Submit chlorination and de-chlorination plan to Engineer thirty (30) days before chlorination and dechlorination.
- C. Submit flushing plan to Engineer.

1.5 MEASUREMENT AND PAYMENT

- A. No separate measurement or direct payment will be made for the items under this Section and all costs for same shall be included in the price bid for the project.

PART 2 - PRODUCTS

2.1 DISINFECTANT

- A. Sodium Hypochlorite in accordance with AWWA C652 and B300.
- B. Calcium Hypochlorite conforming to AWWA B300. Calcium hypochlorite intended for use in swimming pools is not permitted.
- C. Disinfection with pure chlorine gas is not permitted.

2.2 DECHLORINATION (NEUTRALIZING) AGENTS

- A. Liquid sulfur dioxide or sulfite solution
- B. Sulfur dioxide gas is not permitted.

## 2.3 TEST KITS

- A. High Range Test Kit for Chlorine Residual (0 - 200 mg/l): Provide Hach Chemical Company Model CN-21P.
- B. DPD Chlorine Residual Test Kit (0 – 3.5 mg/l): Provide Hach Chemical Company Model CN-66.

## 2.4 MISCELLANEOUS PARTS AND ACCESSORIES

- A. Use standard commercial grade suitable for the type of installation or system involved, and conforming to the applicable standards and specifications of the AWWA and approved by the Engineer.

## PART 3 - EXECUTION

### 3.1 GENERAL

- A. Upon completion of testing, disinfect all water lines to meet requirements of AWWA C-651 and the SCDHEC.
  - 1. Utilize the Continuous Feed Method.
- B. Newly laid valves or other appurtenances shall be operated several times while line is filled with chlorinating agent.
- C. Should initial treatment fail to meet results specified, repeat procedures until satisfactory results are obtained, at no additional cost to the Owner.
- D. All pipe taps, feeders, chemicals, etc. for sterilization shall be provided by the Contractor.
- E. Perform hydrostatic testing of water main prior to disinfection.

### 3.2 DISCHARGE REQUIREMENTS

- A. Discharges to the environment:
  - 1. Discharges shall not cause or have the reasonable potential to cause or contribute to a violation of a SCDHEC water quality standard.
  - 2. Utilize Best Management Practices (BMPs) to prevent erosion from discharge of water during any construction activities including flushing and disinfection.
- B. Notify the Engineer immediately in the event of any accidental discharge.

### 3.3 PRELIMINARY FLUSHING

- A. Prior to chlorination, fill water main with clear water to eliminate air pockets and flush to remove foreign materials that might have entered the main during installation or repair.
- B. Provide flushing of sufficient magnitude and duration to flush all foreign material out of the lines, valves, and hydrants.
- C. Provide a minimum flushing velocity of 2.5 feet per second (FPS) with flushing velocity of forty (40) PSI.
- D. All valves and hydrants to be fully opened and closed under water pressure to ensure proper operations during flushing and to dislodge foreign material.

- E. All valves or connections to existing distribution system to be closed and backflow preventer or other approved equipment installed at the source during flushing operations to prevent contamination of existing distribution system.
- F. Provide protection of existing site improvements during flushing operation.

3.4 DISINFECTION OF WATER MAINS

- A. Provide water supplied from a temporary, backflow-protected connection to the existing distribution system at a constant measured rate into the new water main.
  - 1. In absence of a meter, determine the flow rate either by placing a pilot gauge at discharge or by measuring the time to fill a container of known volume.
- B. Inject water entering the new main with a chlorine solution fed at a constant rate. Chlorine solution feed rate to provide and maintain a free chlorine concentration of no less than fifty (50) milligrams per liter (mg/L) during the filling of the water main.
  - 1. Injection point to be no more than ten (10) feet downstream from the beginning of the new water main.
  - 2. Measure chlorine concentration at regular intervals utilizing high-range chlorine test kits to ensure the minimum chlorine concentration is provided.
  - 3. Chlorine solutions may be prepared with sodium hypochlorite or calcium hypochlorite. The amount of chlorine required for each one hundred (100) feet of pipe to produce a fifty (50) mg/L concentration is:

Pipe Size (Inches)	100% Chlorine (LB)	1% Chlorine Solution (gal)
4	0.013	0.16
6	0.030	0.37
8	0.054	0.65
10	0.085	1.02
12	0.122	1.47
16	0.218	2.61
24	0.490	5.87
48	1.960	23.50

- 4. Feed chlorine solution until the entire main is filled with chlorinated water, with a minimum concentration of fifty (50) mg/L.
- 5. Provide a gasoline or electrically powered chemical-feed pump designed for feed chlorine solutions to feed hypochlorite solutions.
  - a. Provide feed lines made of material capable of withstanding the corrosion caused by concentrated chlorine solutions and the maximum pressures that may be caused by the feed pumps.
  - b. Check all connections for tightness before the chlorine solution is applied to the main.
- C. Retain the chlorinated water in the water main for a minimum of twenty-four (24) hours.
  - 1. Operate valves and hydrants in the treated section of the water main during the twenty-four (24) hours period to ensure disinfection of appurtenances.
- D. At end of the twenty-four (24) hour retention period, all sample locations shall have a residual of not less than ten (10) mg/L of free chlorine.

- E. Final flushing: After the retention period, flush the chlorinated water from the water main, valves, and branches until the chlorine residual is less than 0.5 mg/L.
  - 1. Provide dechlorination of the chlorinated water in the main by applying a dechlorination agent.
  - 2.

### 3.5 SAMPLING PROGRAM AND ACCEPTANCE

- A. After final flushing, provide two separate samples for each sample location, taken at twenty-four (24) hour intervals, free of coliform bacteria.
  - 1. Contractor to take 1st and 2nd samples, deliver to SCDHEC approved laboratory for testing.
  - 2. The 1st and 2nd sample results shall include the free chlorine residual at the time the samples were collected.
- B. At a minimum, sample locations shall be as required by SCDHEC and the following:
  - 1. The tie-in location of new and existing water lines.
  - 2. The end of all dead-end lines.
  - 3. At intervals of no more than 1,200' for all new lines longer than 1,200' in length.
- C. All sample locations are to be given an identifying label and a corresponding identification label is to be included on the record drawings indicating each sample location.
- D. Provide all results to the Engineer.
- E. Resampling: If the initial disinfection fails to produce satisfactory bacteriological results or if other water quality is affected, re-flush the water main and resample.
- F. Re-disinfection: If the check samples fail to produce acceptable results, repeat disinfection procedures until satisfactory results are obtained.

END OF SECTION

SECTION 40 27 26  
PLASTIC PIPE AND FITTINGS

PART 1 GENERAL

1.1 SCOPE

- A. Provide all labor, materials, equipment and incidentals necessary to construct all plastic pipe, and appurtenances as shown on the Drawings and as specified herein.

1.2 SUBMITTALS

- A. Complete shop drawings and product data on all piping and fittings shall be submitted to the Engineer in accordance with the requirements of Section 01 33 00 of these Specifications.

1.3 MEASUREMENT AND PAYMENT

- A. Basis of Measurement: The work and products described in this section are considered incidental to the line items "Utility Relocations (Water)", "Utility Relocations (Sanitary Sewer)" and will not be measured for individual payment.

PART 2 PRODUCTS

2.1 POLYVINYL CHLORIDE (PVC) GRAVITY SEWER PIPE

- A. Pipe and fittings shall meet the following requirements:
  - 1. Pipe and fittings shall be manufactured in accordance with ASTM D 3034. The minimum wall thickness shall be that which will provide an SDR of 26. The pipe shall also have a minimum pipe stiffness of 115 psi at 5 percent deflection as determined by ASTM D 2412.
- B. PVC gravity pipe shall be supplied in lengths not longer than 13 feet.
- C. Fittings: Fittings for pipe 8 inches and less in diameter shall be one piece with no solvent welded joints. Fittings for pipe 10 inches and larger in diameter may be fabricated using solvent welding. No field fabrication of fittings will be allowed. Fabrication shall be performed at the factory and the fittings shall be delivered ready for use.
- D. Joints: Joints for pipe and fittings shall be of the integral bell and spigot type with a confined elastomeric gasket having the capability of absorbing expansion and contraction without leakage. Joints shall meet the requirements of ASTM D 3212; gaskets shall meet the requirements of ASTM F 477. The joint system shall be subject to the approval of the Engineer and shall be identical for pipe and fittings.

2.2 POLYVINYL CHLORIDE (PVC) PRESSURE PIPE

- A. Polyvinyl Chloride Pressure Pipe (Water Mains)

1. Pipe: AWWA C900, marked with National Sanitation Foundation (NSF) approval, colored blue.
  - a. 4" to 12": Pipe Class shall be DR 18, 150 psi.
  - b. 3" and smaller: Comply with ASTM D 2241 for PVC 1120, SDR 21.
2. Fittings: Ductile Iron, as specified in Section 40 27 23.
3. PVC pressure pipe shall be supplied in 20 foot nominal lengths.
4. Joints: Push on PVC pipe and fittings shall have integral bell and spigot type joints with elastomeric gaskets having the capability of absorbing expansion and contraction without leakage. PVC Joints shall meet the requirements of ASTM D 3139; gaskets shall meet the requirements of ASTM F477. Ductile iron joints shall be Mechanical Joint and meet the requirements of AWWA C111 with retainer glands as specified herein.

### 2.3 RETAINER GLANDS

Retainer glands for polyvinyl chloride pressure pipe with ductile iron fittings shall be Megalug Series 2000PV, as manufactured by EBAA Iron, Uni-Flange Series 1500, as manufactured by Ford Meter Box Company, or Star Pipe Products StarGrip Series 4000.

## PART 3 EXECUTION

### 3.1 CUTTING

- A. When new or existing pipe is required to be cut, the pipe shall be cut in such a manner as to leave a smooth end normal to the axis of the pipe.
- B. All cutting of polyvinyl chloride pipe shall be performed with a cutting saw. All burrs shall be removed from the inside and outside edges of all cut pipe.

### 3.2 JOINT ASSEMBLY

- A. Push On Joints: The inside of the bell and the outside of the pipe from the plain end to the guide stripe shall be wiped clean immediately before assembling the pipe joint. Then the rubber gasket shall be inserted into a groove or shaped recess in the bell. Both the bell and spigot ends to be joined shall be wiped again to ensure they are thoroughly clean. A liberal coating of special lubricant furnished by the pipe manufacturer shall be applied to the outside of the pipe. The plain end shall be centered in the bell and the spigot pushed home.
- B. Solvent Welded Joints: All solvent welded joints shall be in accordance with ASTM 2855.

### 3.3 CONSTRUCTING AT STRUCTURES

- A. Proper and suitable tools and appliances for safe and convenient handling and placing of pipe and fittings shall be used. Any damage shall be remedied as directed by the Engineer.



- B. All pipe and fittings shall be carefully examined by the Contractor for defects just before installing and no pipe or fitting shall be installed if it is defective. If any defective pipe or fitting is discovered after having been installed, it shall be removed and replaced in a satisfactory manner with a sound pipe or fitting by the Contractor at Contractor's own expense.
- C. All pipes and fittings shall be thoroughly cleaned before they are installed and shall be kept clean until they are used in the completed work. Open ends of pipe shall be kept plugged with a bulkhead during construction.
- D. All elbows, tees, brackets, crosses, and reducers in pressure piping systems shall be adequately restrained against thrust.
- E. All piping shall be installed in place without springing or forcing.
- F. Exposed polyvinyl chloride piping shall be supported as shown on the Drawings.

### 3.4 DISINFECTION (WATER MAINS)

After testing, disinfect potable water mains as specified in Section 40 27 25.

### 3.5 TESTING (PRESSURE PIPE)

- A. All sections of pipeline subject to internal pressure shall be pressure tested in accordance with AWWA C600. A section of line will be considered ready for testing after completion of all thrust restraint and backfilling.
- B. Each segment of pipeline between line valves shall be tested individually.
- C. Coordinate testing with the Owner and Engineer a minimum of 48 hours in advance and allow witnessing of testing.
- D. Test Preparation
  - 1. Flush pipeline section thoroughly at flow velocities greater than 2.5 feet per second, adequate to remove debris from pipe and valve seats. Partially operate valves and hydrants to clean out seats. Provide correctly sized temporary outlets in number adequate to achieve flushing velocities.
  - 2. Provide temporary blocking, bulkheads, flanges and plugs as necessary, to assure all new pipe, valves and appurtenances will be pressure tested.
  - 3. Before applying test pressure, air shall be completely expelled from the pipeline and all appurtenances. Unless permanent air vents are in place, insert temporary corporation stops at highpoints to expel air as line is filled with water.
  - 4. Fill pipeline slowly with water. Provide a suitable pump with an accurate water meter to pump the line to the specified pressure. Differential pressure at valves and hydrants shall equal the maximum possible, but shall not exceed manufacturer's pressure rating. Where

necessary, provide temporary back pressure to meet the differential pressure restrictions.

5. Valves and hydrants shall not be operated in either the opening or closing direction at differential pressures above their rated pressure.
- E. The test pressure shall be measured at the lowest point in the test segment and shall be maintained for a minimum of two hours. Minimum test pressure shall be 150 psi.
- F. Maintain the test pressure within 5 psi of the specified test pressure for the test duration. Should the pressure drop more than 5 psi at any time during the test period, the pressure shall be restored to the specified test pressure. Provide an accurate pressure gage with graduation not less than 5 psi.
- G. Leakage: Leakage shall be defined as the quantity of water that must be pumped into the test section equal to the sum of the water, to maintain pressure within 5 psi of the specified test pressure for the test duration plus water required to return line to test pressure at the end of the test. Leakage shall be the total cumulative amount measured on a water meter.
- H. The Owner assumes no responsibility for leakage occurring through existing valves.
- I. Test Results: No test section shall be accepted if the leakage exceeds the limits determined by the following formula:

$$L = \frac{SD(P)^{1/2}}{133,200}$$

Where: L = allowable leakage, in gallons per hour  
S = length of pipe tested, in feet  
D = nominal diameter of the pipe, in inches  
P = average test pressure during the leakage test, in pounds per square inch (gauge)

As determined under Section 4 of AWWA C600.

If the pipe section being tested contains lengths of various pipe diameters, the allowable leakage shall be the sum of the computed leakage for each diameter. The leakage test shall be repeated until the test section is accepted. All visible leaks shall be repaired regardless of leakage test results.

- J. Completion: After a pipeline section has been accepted, relieve test pressure. Record type, size and location of all outlets on record drawings. Provide documentation of test results using Engineer's test forms.

END OF SECTION

SECTION 40 27 53  
VALVES

PART 1 GENERAL

1.1 SCOPE

- A. Furnish all labor, materials, equipment and incidentals required to complete and make ready for operation, all valves and appurtenances as shown on the Drawings and as specified herein.

1.2 SUBMITTALS

- A. Complete shop drawings of all valves and appurtenances shall be submitted to the Engineer for approval in accordance with Section 01 33 00 of these Specifications. Clearly indicate make, model, location, type, size and pressure rating.
- B. Operating and maintenance data for all valves shall be furnished in accordance with Section 01 70 00 of these Specifications.

1.3 MEASUREMENT AND PAYMENT

- A. Basis of Measurement: The work and products described in this section are considered incidental to the line items "Utility Relocations (Water)" and will not be measured for individual payment.

1.4 STORAGE AND PROTECTION

- A. Valves and all associated accessories shall be stored and protected in accordance with the Manufacturer's requirements.

PART 2 PRODUCTS

2.1 GENERAL

- A. Provide valves with manufacturer's name and pressure rating clearly marked on the outside of the valve body.
- B. All exposed bolts, nuts, and washers for buried or submerged valves shall be stainless steel. All exposed nuts, bolts, springs, washers, and miscellaneous hardware shall be Type 304 or 316 stainless steel.

2.2 COATINGS

- A. All exterior ferrous metal surfaces of exposed or submerged valves and appurtenances shall receive a coating of rust-inhibitive primer. The exterior of all buried valves shall have a factory applied, two coat coal tar epoxy coating system. The coal tar epoxy shall be Tnemec Tneme-Tar 46-413, Indurall Ruffstuff 2100 Coal Tar Epoxy or KopCoat Bitumastic No. 300-M. Each coating shall have a dry film thickness of 8-10 mils.

- B. Exposed or submerged valves shall be field coated using a three-coat epoxy system to a minimum 12.0 mils dry film thickness with 4.0 mils minimum thickness each coat.
- C. Epoxy coating system for exposed or submerged valves shall be Tnemec Series 66 Epoxoline II, Carboline Carboguard 890 or equal.

### 2.3 GATE VALVES

- A. Valves 2-inches in Diameter and Smaller: Gate valves shall be for potable water service, bronze, heavy duty, rising stem, wedge type with screwed or union bonnet. Valve ends shall be threaded type. Valves shall have a minimum 200 psi working pressure for water. Gate valves shall be manufactured by Hammond.
- B. Valves 3-inches through 12-inches in Diameter: Gate valves shall be for potable water service, resilient wedge type conforming to the requirements of AWWA C509 rated for 200 psi working pressure.
  - 1. Valves shall be provided with two O-ring stem seals with one O-ring located above and one below the stem collar. The area between the O-rings shall be filled with lubrication to the thrust collar bearing surfaces each time the valve is operated. At least one anti-friction washer shall be utilized to further minimize operating torque. All seals between valve parts, such as body and bonnet, bonnet and bonnet cover, shall be flat gaskets or O-rings.
  - 2. The valve gate shall be made of cast iron having a vulcanized, synthetic rubber coating, or a seat ring attached to the disc with retaining screws. Sliding of the rubber on the seating surfaces to compress the rubber will not be allowed. The design shall be such that compression-set of the rubber shall not affect the ability of the valve seal when pressure is applied to either side of the gate. The sealing mechanism shall provide zero leakage at the water working pressure when installed with the line flow in either direction.
  - 3. All internal ferrous surfaces shall be coated with epoxy to a minimum thickness of 4 mils. The epoxy shall be non-toxic, impart no taste to the water and shall conform to AWWA C550, latest revision.
  - 4. Gate valves shall be manufactured by Mueller.
- C. Valve ends shall be mechanical joint type except where flanged or restrained joint ends are shown. Flanged joints shall meet the requirements of ANSI B16.1, Class 125.
- D. Operators
  - 1. Manually operated valves, including geared valves, shall be non-rising stem type having O-ring seals.
  - 2. Valves for buried service shall have a 2-inch square AWWA nut type operator and shall be equipped with a valve box and extension stem unless access to the operator is

provided by a manhole.

## 2.4 VALVE OPERATOR ACCESSORIES

### A. Valve Boxes

1. Valve boxes shall be cast iron two-piece screw type with drop covers and shall have a 5.25-inch inside diameter. Valve box covers shall weigh a minimum of 13 pounds. The valve boxes shall be adjustable to 6-inches up or down from the nominal required cover over the pipe. Valve boxes shall be of sufficient length that bottom flange of the lower belled portion of the box is below the valve operating nut. Ductile or cast iron extensions shall be provided as necessary. Concrete collar (24") shall be provided where valves are outside pavement.
2. Valve boxes shall be manufactured by Tyler, Opelika or Star.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. All valves and appurtenances shall be installed in the locations shown on the Drawings, true to alignment and properly supported.

### 3.2 FIELD PAINTING

Field painting of exposed and submerged valves shall be as specified in Article 2.2 of this Section.

### 3.3 INSPECTION AND TESTING

Each valve shall be tested in the presence of the Owner or Engineer for proper operation and leak tightness. Any leaks shall be corrected. The Contractor shall make all necessary changes, modifications and/or adjustments required to ensure satisfactory operation.

END OF SECTION

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# **Appendix A**

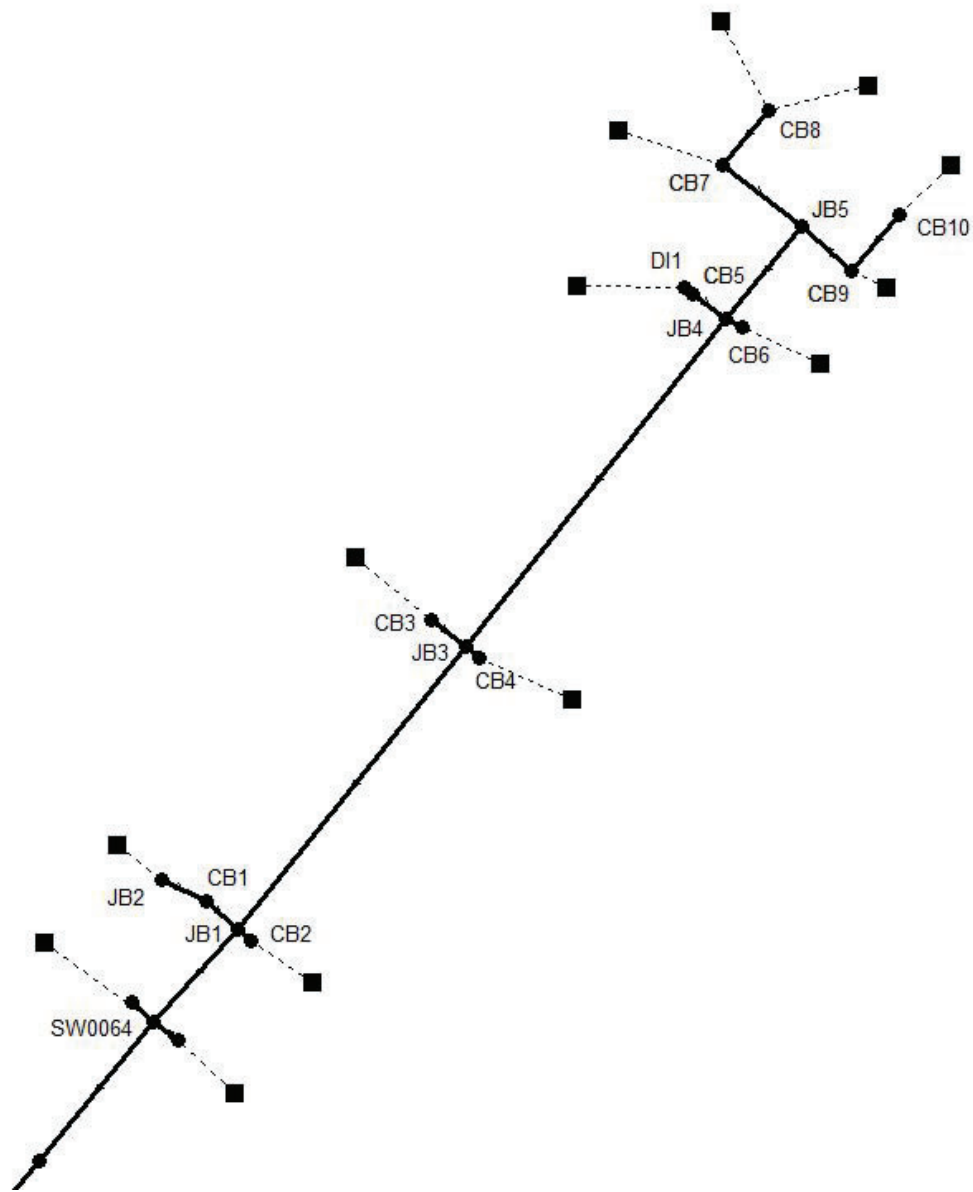
## Stormwater Hydrology and Hydraulics Calculations





# Queen Street System







**Queen Street - 90 Percent Calculations**

**Subcatchment Runoff**

Subcatchment	Total Precip in	Total Runon in	Total Evap in	Total Infil in	Imperv Runoff in	Perv Runoff in	Total Runoff in	Total Runoff 10 <sup>6</sup> gal	Peak Runoff CFS	Runoff Coeff
CB10_BASIN	6.99	0	0	1.65	3.37	1.93	5.29	0.17	3.73	0.757
CB2-BASIN	6.99	0	0	0.84	3.93	2.18	6.11	0.11	2.38	0.874
CB3_BASIN	6.99	0	0	1.14	2.65	3.14	5.79	0.08	1.82	0.828
CB4_BASIN	6.99	0	0	1.65	3.37	1.93	5.3	0.05	1.08	0.758
CB6-BASIN	6.99	0	0	1.65	3.37	1.93	5.3	0.14	3.01	0.757
CB7-BASIN	6.99	0	0	0.77	4.06	2.12	6.19	0.09	2.04	0.885
CB8_1-BASIN	6.99	0	0	1.68	2.92	2.35	5.26	0.2	4.53	0.752
CB8_2_BASIN	6.99	0	0	1.68	2.92	2.35	5.27	0.03	0.77	0.753
CB9_BASIN	6.99	0	0	1.65	3.37	1.93	5.3	0.03	0.73	0.758
DI1-BASIN	6.99	0	0	1.14	2.65	3.14	5.79	0.17	3.84	0.828
JB2-BASIN	6.99	0	0	1	3.19	2.76	5.95	0.1	2.21	0.851

**Queen Street - 90 Percent Calculations**

Node Depth							
Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Day of Maximum Depth	Hour of Maximum Depth	Maximum Reported Depth Feet
SW0064	JUNCTION	0.44	2.92	4.48	0	13:00	2.92
JB1	JUNCTION	0.51	2.73	4.9	0	13:00	2.73
CB1	JUNCTION	0.32	2.58	4.97	0	13:00	2.58
CB2	JUNCTION	0.44	2.73	4.98	0	13:00	2.73
JB4	JUNCTION	0.52	3.45	6.03	0	13:00	3.45
CB6	JUNCTION	0.21	2.27	6.18	0	13:00	2.27
CB5	JUNCTION	0.2	2.22	6.23	0	13:00	2.22
DI1	JUNCTION	0.23	2.24	6.36	0	13:00	2.24
CB10	JUNCTION	0.19	2.25	6.46	0	13:00	2.25
CB9	JUNCTION	0.25	3.01	6.34	0	13:00	3.01
JB5	JUNCTION	0.51	3.52	6.15	0	13:00	3.52
CB7	JUNCTION	0.25	2.4	6.67	0	13:00	2.39
CB8	JUNCTION	0.16	2.05	6.71	0	12:52	2.05
JB3	JUNCTION	0.52	3.11	5.47	0	13:00	3.11
CB4	JUNCTION	0.23	2.67	5.48	0	13:00	2.67
CB3	JUNCTION	0.21	2.59	5.52	0	13:00	2.59
JB2	JUNCTION	0.27	2.51	5.03	0	13:00	2.51

**Queen Street - 90 Percent Calculations**

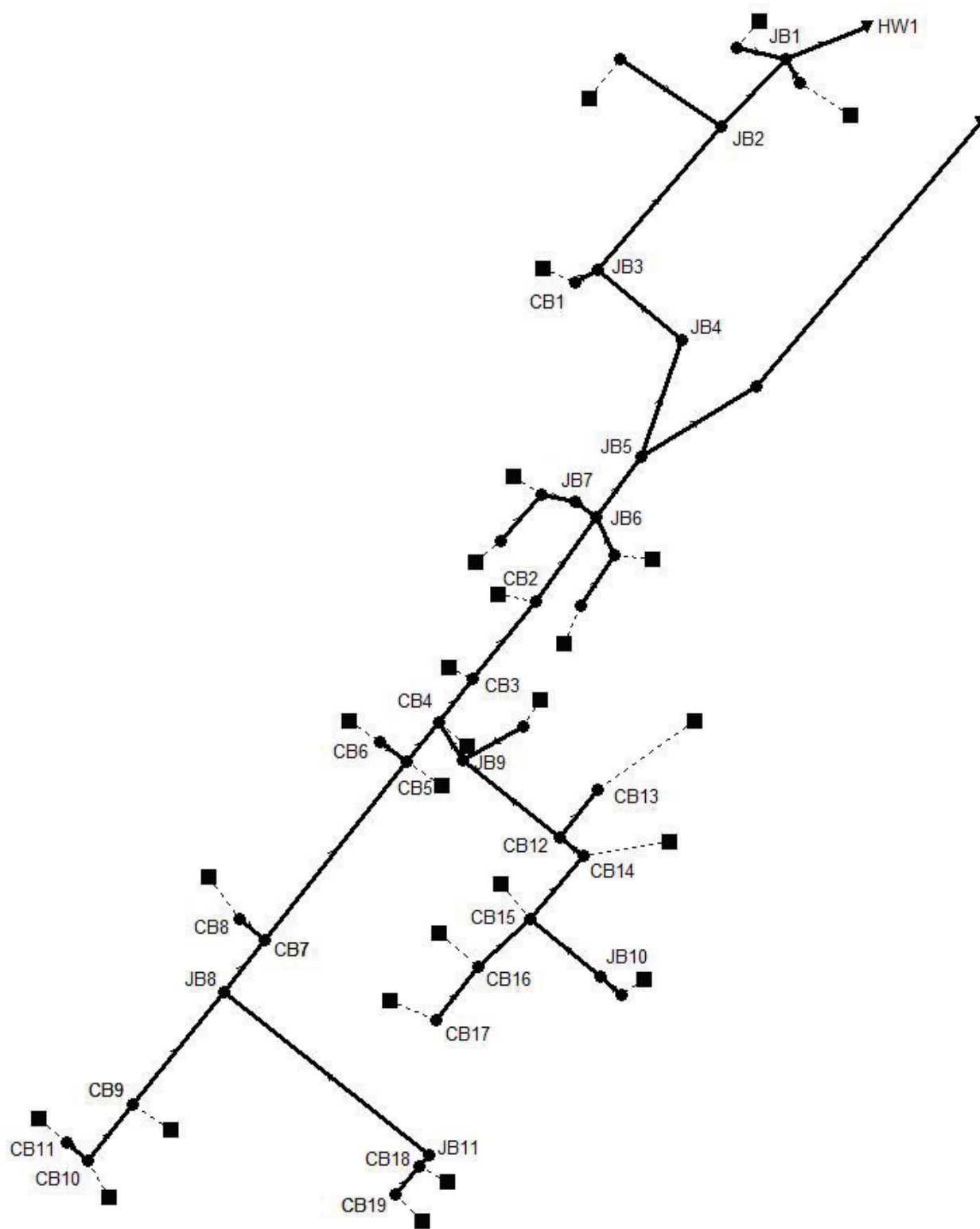
Link Flow							
Link	Type	Maximum  Flow  CFS	Day of Maximum Flow	Hour of Maximum Flow	Maximum  Velocity  ft/sec	Max / Full Flow	Max / Full Depth
JB1-SW0064	CONDUIT	25.66	0	13:00	5.67	1.75	0.98
CB1-JB1	CONDUIT	2.21	0	13:00	1.8	0.32	1
CB2-JB1	CONDUIT	2.38	0	13:00	1.94	0.36	1
JB4-JB3	CONDUIT	18.18	0	13:00	3.7	1.29	1
CB6-JB4	CONDUIT	3.01	0	13:00	3.51	0.53	1
CB5-JB4	CONDUIT	3.83	0	13:00	4.31	0.49	1
DI1-CB5	CONDUIT	3.83	0	13:00	3.51	0.77	1
CB8-CB7	CONDUIT	5.14	0	12:52	2.29	0.32	1
CB10-CB9	CONDUIT	3.73	0	13:00	3.23	0.46	1
CB9-JB5	CONDUIT	4.46	0	13:00	2.48	0.54	1
CB7-JB5	CONDUIT	7.15	0	12:52	4	0.87	1
JB5-JB4	CONDUIT	11.49	0	12:53	2.34	0.91	1
CB3-JB3	CONDUIT	1.82	0	13:00	1.79	0.27	1
CB4-JB3	CONDUIT	1.08	0	13:00	1.49	0.15	1
JB3-JB1	CONDUIT	21.08	0	13:00	4.29	1.5	1
JB2-CB1	CONDUIT	2.21	0	13:00	1.8	0.44	1





# Orange Street System







**Orange Street - 90 Percent Calculations**

**Subcatchment Runoff**

Subcatchment	Total Precip in	Total Runon in	Total Evap in	Total Infil in	Imperv Runoff in	Perv Runoff in	Total Runoff in	Total Runoff 10 <sup>6</sup> gal	Peak Runoff CFS	Runoff Coeff
CB1_BASIN	6.99	0	0	1.27	2.74	2.94	5.67	0.19	4.16	0.811
CB10_BASIN	6.99	0	0	1.71	4.5	0.75	5.24	0.02	0.51	0.75
CB11_BASIN	6.99	0	0	3.05	2.57	1.32	3.89	0.44	9.3	0.556
CB13_BASIN	6.99	0	0	0.36	5.67	0.93	6.6	0.05	1.01	0.943
CB-14_BASIN	6.99	0	0	0	6.95	0	6.95	0.02	0.46	0.994
CB15_BASIN	6.99	0	0	1.35	1.84	3.75	5.59	0.18	4.15	0.799
CB16_BASIN	6.99	0	0	0.7	4.33	1.93	6.25	0.08	1.64	0.894
CB17_BASIN	6.99	0	0	0.36	5.6	0.99	6.59	0.13	2.7	0.943
CB18_BASIN	6.99	0	0	1.27	2.56	3.1	5.66	0.45	9.83	0.81
CB19_BASIN	6.99	0	0	2.52	1.59	2.79	4.38	0.49	10.2	0.627
CB2_BASIN	6.99	0	0	0.61	4.64	1.7	6.34	0.01	0.11	0.906
CB3_BASIN	6.99	0	0	0.75	4.12	2.08	6.2	0.05	0.98	0.887
CB4_BASIN	6.99	0	0	0.46	5.22	1.27	6.49	0.01	0.15	0.928
CB5_BASIN	6.99	0	0	0.46	5.22	1.28	6.49	0.01	0.15	0.928
CB6_BASIN	6.99	0	0	2.51	1.84	2.58	4.42	0.3	6.75	0.632
CB8_BASIN	6.99	0	0	2.44	2.83	1.67	4.49	0.16	3.51	0.643
CB9_BASIN	6.99	0	0	1.51	4.78	0.66	5.44	0.02	0.5	0.778

Orange Street - 90 Percent Calculations							
Node Depth							
Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Day of Maximum Depth	Hour of Maximum Depth	Maximum Reported Depth Feet
CB1	JUNCTION	0.4	2.89	4.7	0	13:00	2.89
CB10	JUNCTION	0.35	3.26	8.33	0	13:00	3.25
CB11	JUNCTION	0.35	3.16	8.51	0	13:00	3.16
CB12	JUNCTION	0.39	3.29	7.36	0	12:49	3.28
CB13	JUNCTION	0.33	2.97	7.29	0	12:48	2.97
CB14	JUNCTION	0.39	3.2	7.45	0	12:49	3.16
CB15	JUNCTION	0.36	2.93	7.5	0	12:49	2.93
CB16	JUNCTION	0.3	2.82	7.67	0	12:49	2.79
CB17	JUNCTION	0.25	2.61	7.74	0	12:49	2.57
CB18	JUNCTION	0.35	2.98	8.53	0	13:00	2.98
CB19	JUNCTION	0.25	2.38	8.69	0	13:00	2.38
CB2	JUNCTION	0.61	4.31	6.81	0	13:00	4.3
CB3	JUNCTION	0.64	4.31	7.08	0	13:00	4.31
CB4	JUNCTION	0.66	4.38	7.28	0	13:00	4.38
CB5	JUNCTION	0.61	4.41	7.45	0	13:00	4.41
CB6	JUNCTION	0.26	2.18	8	0	12:48	2.18
CB7	JUNCTION	0.51	4.08	7.71	0	13:00	4.08
CB8	JUNCTION	0.24	2.51	7.93	0	13:00	2.51
CB9	JUNCTION	0.37	3.42	8.1	0	13:00	3.42
HW1	OUTFALL	0.58	1.97	2.43	0	13:00	1.97
JB1	JUNCTION	0.77	2.99	3.68	0	13:00	2.99
JB10	JUNCTION	0.2	1.88	7.01	0	12:49	1.86
JB11	JUNCTION	0.33	2.96	8.37	0	13:00	2.96
JB2	JUNCTION	0.72	3.13	4.06	0	13:00	3.13
JB3	JUNCTION	0.67	3.18	4.6	0	13:00	3.18
JB4	JUNCTION	0.71	3.37	5.08	0	13:00	3.37
JB5	JUNCTION	0.71	3.65	5.69	0	13:00	3.64
JB6	JUNCTION	0.76	4.22	6.45	0	13:00	4.22
JB7	JUNCTION	0.51	4.07	6.67	0	13:00	4.07
JB8	JUNCTION	0.5	4.02	7.82	0	13:00	4.02
JB9	JUNCTION	0.45	3.66	7.3	0	13:00	3.66

**Orange Street - 90 Percent Calculations**

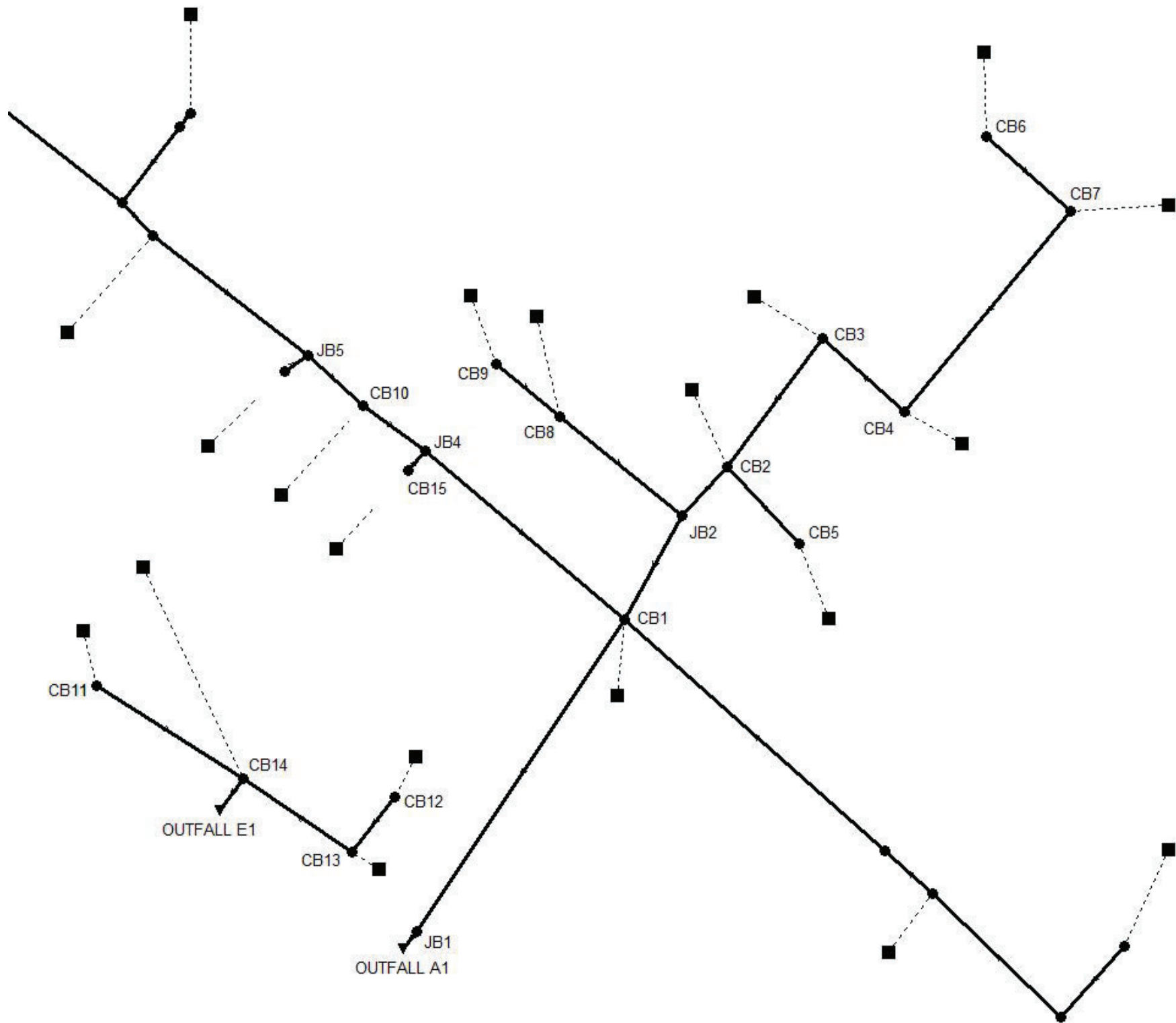
Link Flow							
Link	Type	Maximum  Flow  CFS	Day of Maximum Flow	Hour of Maximum Flow	Maximum  Velocity  ft/sec	Max / Full Flow	Max / Full Depth
CB10-CB9	CONDUIT	9.81	0	13:00	3.93	16:48	1
CB11-CB10	CONDUIT	9.3	0	13:00	3.57	15:07	1
CB12-JB9	CONDUIT	9.41	0	12:40	3.84	5:02	1
CB13-CB12	CONDUIT	1.52	0	13:00	1.24	6:28	1
CB14-CB12	CONDUIT	8.37	0	12:40	3.41	1:55	1
CB15-CB14	CONDUIT	7.96	0	12:39	3.24	0:43	1
CB16-CB15	CONDUIT	4.36	0	12:40	2.42	16:48	1
CB17-CB16	CONDUIT	2.71	0	12:40	2.29	10:19	1
CB18-JB11	CONDUIT	20.02	0	13:00	3.53	16:48	1
CB19-CB18	CONDUIT	10.2	0	13:00	3.49	18:14	1
CB1-JB3	CONDUIT	4.16	0	13:00	2.36	10:33	1
CB2-JB6	CONDUIT	44.72	0	12:49	4.38	21:21	1
CB3-CB2	CONDUIT	44.54	0	12:49	4.37	16:33	1
CB4-CB3	CONDUIT	43.54	0	12:49	4.27	17:02	1
CB5-CB4	CONDUIT	39.52	0	13:00	3.87	0.61	1
CB6-CB5	CONDUIT	6.3	0	13:01	5.84	0.73	1
CB7-CB5	CONDUIT	33.83	0	13:00	3.45	0.54	1
CB8-CB7	CONDUIT	3.51	0	13:00	4.62	0.47	1
CB9-JB8	CONDUIT	10.3	0	13:00	3.94	0.74	1
JB10-CB15	CONDUIT	4.43	0	13:00	3.61	0.83	1
JB11-JB8	CONDUIT	20.02	0	13:00	3.96	0.73	1
JB1-HW1	CONDUIT	66.52	0	13:00	6.02	0.77	0.78
JB2-JB1	CONDUIT	64.9	0	13:00	5.09	0.76	0.97
JB3-JB2	CONDUIT	58.99	0	13:00	4.58	0.69	0.99
JB4-JB3	CONDUIT	54.85	0	13:00	4.25	0.63	1
JB5-JB4	CONDUIT	54.85	0	13:00	5.38	0.86	1
JB6-JB5	CONDUIT	74.33	0	13:00	7.29	1.19	1
JB7-JB6	CONDUIT	10.31	0	13:00	3.28	0.43	1
JB8-CB7	CONDUIT	30.34	0	13:00	4.02	0.48	1
JB9-CB4	CONDUIT	10.48	0	12:40	3.24	0.77	1





# Front Street System







**Front Street - 90 Percent Calculations**

**Subcatchment Runoff**

Subcatchment	Total Precip in	Total Runon in	Total Evap in	Total Infil in	Imperv Runoff in	Perv Runoff in	Total Runoff in	Total Runoff 10 <sup>6</sup> gal	Peak Runoff CFS	Runoff Coeff
CB1_BASIN	6.99	0	0	0.19	6.24	0.53	6.77	0.06	1.22	0.968
CB10_BASIN	6.99	0	0	2.09	6.61	0.25	6.86	0.01	0.11	0.981
CB11_BASIN	6.99	0	0	0	6.96	0	6.96	0.02	0.5	0.995
CB12_BASIN	6.99	0	0	0	6.96	0	6.96	0.02	0.5	0.995
CB13_BASIN	6.99	0	0	0	6.96	0	6.96	0.02	0.5	0.995
CB14_BASIN	6.99	0	0	0	6.96	0	6.96	0.02	0.5	0.995
CB15_BASIN	6.99	0	0	5:31	6.1	0.63	6.73	0.01	0.3	0.962
CB2_BASIN	6.99	0	0	1.38	1.74	3.83	5.57	0.03	0.72	0.796
CB3_BASIN	6.99	0	0	0.81	4.05	2.1	6.15	0.3	6.37	0.879
CB4_BASIN	6.99	0	0	0.71	4.5	1.74	6.25	0.2	4.21	0.893
CB5_BASIN	6.99	0	0	0.15	6.39	0.42	6.81	0.25	5.15	0.973
CB6_BASIN	6.99	0	0	0.68	4.49	1.78	6.27	0.08	1.64	0.896
CB7_BASIN	6.99	0	0	2.28	3.53	1.11	4.63	1.09	21.76	0.662
CB8_BASIN	6.99	0	0	0	6.96	0	6.96	0.03	0.58	0.995
CB9_BASIN	6.99	0	0	0.2	6.22	0.54	6.76	0.09	1.79	0.966

Front Street - 90 Percent Calculations							
Node Depth							
Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Day of Maximum Depth	Hour of Maximum Depth	Maximum Reported Depth Feet
CB1	JUNCTION	1.16	3.57	1.69	0	13:00	3.57
CB10	JUNCTION	0.87	3.59	2.25	0	13:00	3.58
CB11	JUNCTION	0.16	0.66	0.71	0	13:00	0.66
CB12	JUNCTION	0.16	0.71	0.74	0	13:00	0.71
CB13	JUNCTION	0.2	0.79	0.73	0	13:00	0.79
CB14	JUNCTION	0.29	0.93	0.7	0	13:00	0.93
CB15	JUNCTION	0.9	3.53	2.08	0	13:00	3.52
CB2	JUNCTION	0.91	3.41	1.96	0	13:00	3.4
CB3	JUNCTION	0.99	4.33	2.98	0	13:00	4.32
CB4	JUNCTION	0.78	4.66	3.78	0	13:00	4.66
CB5	JUNCTION	0.52	2.9	2.29	0	13:00	2.9
CB6	JUNCTION	0.27	3.68	4.21	0	12:38	3.68
CB7	JUNCTION	0.48	4.16	4.41	0	13:00	4.15
CB8	JUNCTION	0.48	2.55	1.9	0	13:00	2.55
CB9	JUNCTION	0.28	2.07	1.95	0	13:00	2.07
JB1	JUNCTION	1.52	3.54	1.13	0	13:00	3.54
JB2	JUNCTION	0.97	3.43	1.84	0	13:00	3.43
JB4	JUNCTION	0.94	3.56	2.07	0	13:00	3.55
JB5	JUNCTION	0.81	3.63	2.44	0	13:00	3.62
OUTFALL_A1	OUTFALL	1.9	4.08	1.64	0	0:59	4.08
OUTFALL_E1	OUTFALL	0.45	1.92	1.64	0	0:59	1.92

**Front Street - 90 Percent Calculations**

Link Flow							
Link	Type	Maximum  Flow  CFS	Day of Maximum Flow	Hour of Maximum Flow	Maximum  Velocity  ft/sec	Max / Full Flow	Max / Full Depth
CB10-JB4	CONDUIT	37.98	0	13:00	3.87	18:43	1
CB11-CB14	CONDUIT	0.5	0	13:00	1.04	3:50	0.58
CB12-CB13	CONDUIT	0.5	0	13:00	0.96	3:07	0.6
CB13-CB14	CONDUIT	1	0	13:00	1.13	6:14	0.69
CB14-OUTFALL_E1	CONDUIT	2	0	13:00	1.81	7:40	0.73
CB15-JB4	CONDUIT	0.3	0	12:47	0.39	6:28	1
CB1-JB1	CONDUIT	71.88	0	13:00	4.86	21:07	1
CB2-JB2	CONDUIT	29.36	0	12:49	2.88	16:48	1
CB3-CB2	CONDUIT	23.82	0	12:40	7.22	22:19	1
CB4-CB3	CONDUIT	18.34	0	12:39	5.56	0:28	1
CB5-CB2	CONDUIT	5.14	0	13:00	2.91	21:21	1
CB6-CB7	CONDUIT	8.79	0	13:00	2.66	11:45	1
CB7-CB4	CONDUIT	15.86	0	13:06	4.81	21:21	1
CB8-JB2	CONDUIT	2.38	0	12:49	1.91	7:55	1
CB9-CB8	CONDUIT	1.8	0	12:49	2.03	0:39	1
JB1-OUTFALL_A1	CONDUIT	71.88	0	13:00	5.08	0.73	1
JB2-CB1	CONDUIT	31.73	0	12:49	3.11	0.57	1
JB4-CB1	CONDUIT	38.38	0	13:00	3.91	0.79	1
JB5-CB10	CONDUIT	37.9	0	13:00	3.86	0.76	1





APPENDIX B  
GEOTECHNICAL REPORT





**Construction Materials**

**Geotechnical**

**Nondestructive**

**Special Inspections**

March 17, 2022

WK Dickson & Co., Inc.  
162 Seven Farms Drive, Suite 210  
Charleston, SC 29492

Attention: Mr. Bill Young, PE

Reference: City of Georgetown Stormwater System Improvements  
Proposed Marine Bulkhead Wall  
Front Street  
Georgetown, SC

SCI Project 220017

Dear Mr. Young:

On March 1, 2022, we performed soil borings at two locations at the referenced project site. Geotechnical services were performed in accordance with SCI Proposal No. 14-21-131A, dated July 2, 2021. Our services were authorized via the WK Dickson Subconsultant Contract for Professional Services, which was executed on January 24, 2022.

The boring locations were staked at the site by others prior to our arrival at the site, and the approximate boring locations are shown on the attached Boring Location Plan. As requested, Borings B-1 and B-2 were advanced to depths of approximately 30 feet and 40 feet, respectively, below the existing ground/pavement surface.

The borings were performed by truck-mounted drilling equipment using mud-rotary drilling procedures with split-spoon sampling and Standard Penetration Testing (SPT) performed at selected intervals. Soil samples from this exploration will be retained for a period of three months from the date of this correspondence. Unless other arrangements are made, they will be disposed of following this period.

Groundwater depths were not measured in the boreholes, because the groundwater depths at the boring locations are expected to be influenced by tidal activity. The groundwater depths would be expected near the tide elevations and are expected to change with the changing tides.

Soil properties (design parameters) for the soils encountered in the borings are shown on the attached boring logs. These values can be used by the wall designer to design the bulkhead wall and helical tieback anchors. These values are estimated, based on visual inspection of the soil samples in the laboratory, SPT "N" values correlated with accepted geotechnical references, and our knowledge of the soils in the area. Please note that actual laboratory tests

were not performed on these samples; therefore, these values should be used conservatively and in accordance with accepted engineering practice.

Lateral earth pressure coefficients have been provided in Table 1 for the soil types encountered in the soil borings. These coefficients can be used for the design of the proposed bulkhead wall. The recommended earth pressure coefficients assume a frictionless wall with level backfill and no hydrostatic pressure. The appropriate coefficient or equivalent fluid pressure should be selected considering the soil types encountered in the nearest soil borings.

**Table 1**  
**Recommended Earth Pressure Coefficients**

Soil Type	Lateral Earth Pressure Condition	Coefficient	Unit Weight of Soil (pcf)	Equivalent Fluid Pressure (psf/foot)
Loose Sand (SP-SM)	At Rest ( $K_0$ )	0.58	105	60.9
	Active ( $K_a$ )	0.41		43.1
	Passive ( $K_p$ )	2.46		258.3
Medium Dense Sand (SP-SM)	At Rest ( $K_0$ )	0.50	115	57.5
	Active ( $K_a$ )	0.33		38.0
	Passive ( $K_p$ )	3.00		345.0
Dense Sand (SP-SM)	At Rest ( $K_0$ )	0.43	120	51.6
	Active ( $K_a$ )	0.27		32.4
	Passive ( $K_p$ )	3.69		442.8
Very Dense Sand (SP-SM)	At Rest ( $K_0$ )	0.36	120	43.2
	Active ( $K_a$ )	0.22		26.4
	Passive ( $K_p$ )	4.60		552.0
Soft Clay (CH)	At Rest ( $K_0$ )	1.00	90	90.0
	Active ( $K_A$ )	0.50		45.0
	Passive ( $K_P$ )	1.00		90.0
Hard Clay (CH)	At Rest ( $K_0$ )	1.00	130	130.0
	Active ( $K_A$ )	0.50		65.0
	Passive ( $K_P$ )	1.00		130.0

The proposed bulkhead wall should be designed with positive wall drainage so that hydrostatic pressure is not allowed to develop. Drainage systems can be constructed of open-graded, washed, crushed granite stone that is separated from the soil backfill with a geosynthetic filter fabric or one of several specialty wall drainage products. These systems should include a perforated pipe or other system at the bottom of the wall to drain down-falling water. The earth pressure coefficients provided in Table 1 do not account for surcharge loading or sloped soil conditions. Additional loading from structures or placement of fill material at the ground surface should be considered by the wall designer. Soil backfill placed behind the wall should be granular in nature, and temporary bracing may be necessary during backfilling operations.

City of Georgetown Stormwater System Improvements, Proposed Marine Bulkhead Wall  
March 17, 2022

We appreciate the opportunity to be of service to you during the planning phase of this project. If we may be of further assistance, please call.

Sincerely,



Ronald R. Austin, P.E.  
Vice President – Engineering  
Date 3/17/2022



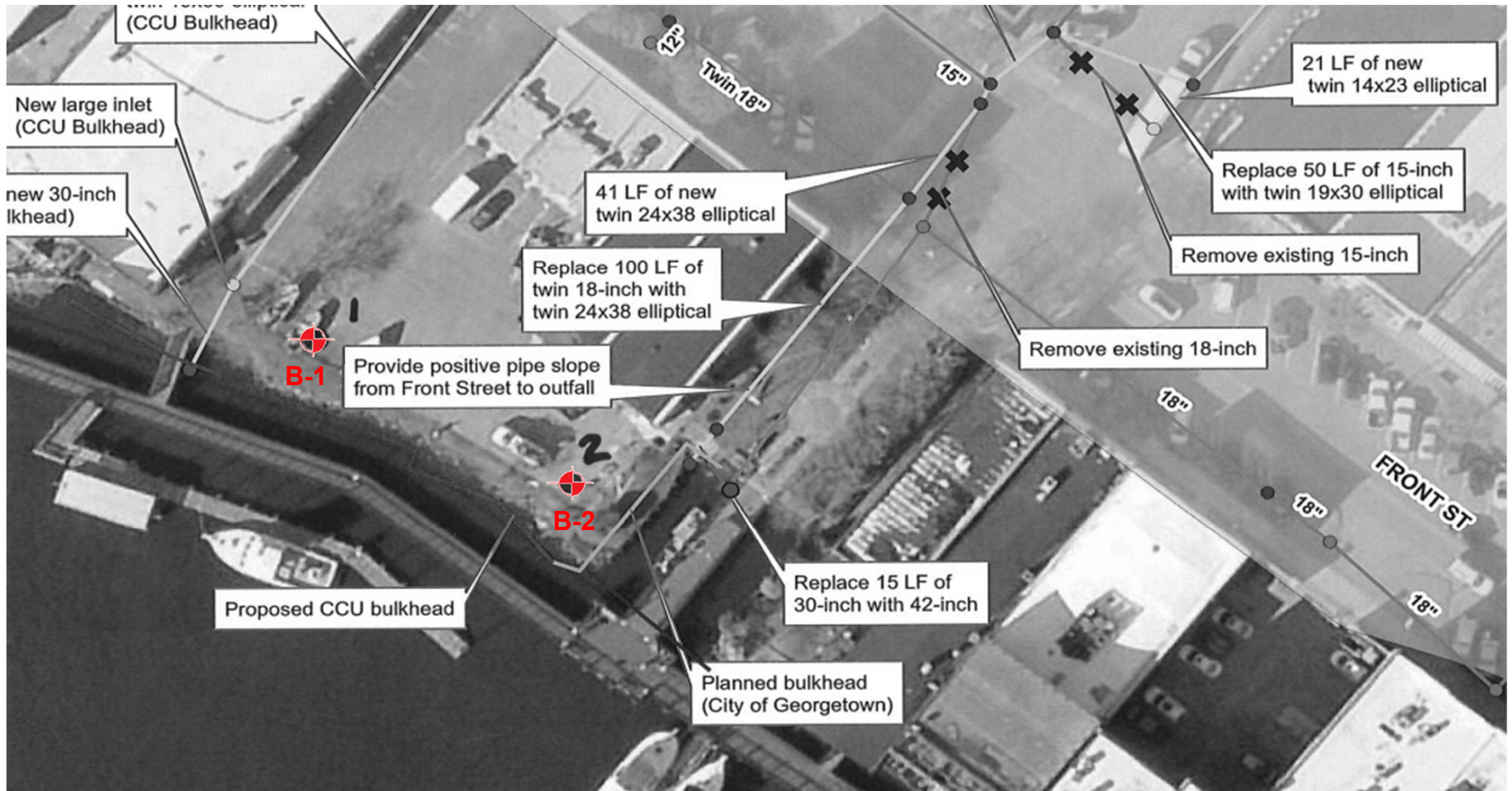
A. Talbot Henderson, III, P.E.  
Project Engineer  
Date 3/17/2022

ath

Enclosures








Reference: Site plan drawing provided by client.

Note: Boring locations are approximate.

Legend:  Test Boring Location

### BORING LOCATION PLAN

Proposed Marine Bulkhead Wall  
 City of Georgetown Stormwater Improvements  
 Georgetown, SC



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 Engineering and Testing  
 Since 1951

PO Drawer 698  
 Charleston, SC 29402-0698  
 P: 843.723.4539 F: 843.723.3648  
[www.SoilConsultantsInc.com](http://www.SoilConsultantsInc.com)

Scale Not to scale  
 Date 3/16/2022

Project No. 220017  
 Figure 1












# LOG OF BORING B-1

**Project:** City of Georgetown Stormwater Improvements, Proposed Bulkhead, Front Street, Georgetown, SC  
**Location:** See Boring Plan  
**Total Depth:** 31.5 ft  
**Datum:** Ground Surface  
**Elevation:** Not known to SCI

**SCI Project:** 220017  
**Date Drilled:** 3/1/2022  
**Drill Rig:** CME 55 (Truck)  
**Driller:** Benbow  
**Drilling Method:** Mud Rotary (4-in. diameter)  
**Water Level:** Tidal

Depth (ft)	Material Description	Material Graphic	Sample		Actual Blows (6-in. interval)	Corrected N Value	Unit Weight (pcf)	Cohesion (psf)	Angle of Internal Friction (degrees)
			Depth	Type Number					
0.3	ASPHALT CONCRETE (3 INCHES THICK)			1	2-4-5	17	115		30
	POORLY GRADED SAND WITH SILT (SP-SM): loose to medium dense, pale brown, fine, moist to wet			2	1-1-2	5	100		20
	- with wood in Samples 2 and 3			3	2-2-2	7	100		20
7.0	CLAYEY SAND (SC): medium dense, pale brown, fine, moist			4	2-5-7	17	115		30
9.5	POORLY GRADED SAND WITH SILT (SP-SM): loose to very dense, pale brown and gray, fine, wet			5	3-3-2	9	105		25
				6	2-3-2	9	105		25
				7	4-7-13	33	115		32
				8	12-16-21	67	120		40
	- with shells in Sample 9			9	10-7-6	23	115		30
23.0	Hard layer (5 inches thick)			10	27-39-50	100	130	3500	
23.4	FAT CLAY WITH SAND (CH): hard, gray, moist								
28.0	POORLY GRADED SAND WITH SILT (SP-SM): very dense, pale brown and gray, fine, moist, with shells			11	50-32-25	97	120		40
31.5	Boring terminated at a depth of 31.5 feet.								

**Remarks:**  
 Soils to depths of 7 feet or deeper are believed to be uncontrolled fill.  
 The Soil Consultants, Inc. Key to Boring Log Symbols and Terms contains explanations about symbols and terms used on the boring log.  
 Corrected N values reflect  $N_{60}$  for clays and  $(N_1)_{60}$  for sands.



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# LOG OF BORING B-2

**Project:** City of Georgetown Stormwater Improvements, Proposed Bulkhead, Front Street, Georgetown, SC  
**Location:** See Boring Plan  
**Total Depth:** 41.5 ft  
**Datum:** Ground Surface  
**Elevation:** Not known to SCI

**SCI Project:** 220017  
**Date Drilled:** 3/1/2022  
**Drill Rig:** CME 55 (Truck)  
**Driller:** Benbow  
**Drilling Method:** Mud Rotary (4-in. diameter)  
**Water Level:** Tidal

Depth (ft)	Material Description	Material Graphic	Sample			Actual Blows (6-in. interval)	Corrected N Value	Unit Weight (pcf)	Cohesion (psf)	Angle of Internal Friction (degrees)
			Depth	Type	Number					
0.3	ASPHALT CONCRETE (4 INCHES THICK)				1	1-1-2	3	95	375	
2.0	FAT CLAY WITH SAND (CH): soft, olive, moist									
5	CLAYEY SAND (SC): medium dense, pale brown, fine, moist - with brick fragments in Samples 2 and 3				2	3-6-3	13	110		25
					3	3-6-5	15	115		30
7.0	POORLY GRADED SAND WITH SILT (SP-SM): loose to medium dense, pale brown and gray, fine, wet - with gravel in Samples 4 and 5				4	2-5-3	14	115		30
					5	4-5-4	16	115		30
					6	2-2-2	7	100		20
					7	3-3-4	12	110		25
					8	4-5-6	20	115		30
					9	10-6-4	18	115		30
23.0	FAT CLAY WITH SAND (CH): hard, gray, moist				10	12-22-45	94	130	3500	
27.0	Hard layer (3 inches thick)									
27.8	POORLY GRADED SAND WITH SILT (SP-SM): very loose to very dense, pale brown and gray, fine, moist to wet				11	1-1-1	3	95		15

**Remarks:**  
 Soils to depths of 12 feet or deeper are believed to be uncontrolled fill.  
 The Soil Consultants, Inc. Key to Boring Log Symbols and Terms contains explanations about symbols and terms used on the boring log.  
 Corrected N values reflect  $N_{60}$  for clays and  $(N_1)_{60}$  for sands.



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# LOG OF BORING B-2

**Project:** City of Georgetown Stormwater Improvements, Proposed  
Bulkhead, Front Street, Georgetown, SC

**Location:** See Boring Plan

**Total Depth:** 41.5 ft

**Datum:** Ground Surface

**Elevation:** Not known to SCI

**SCI Project:** 220017

**Date Drilled:** 3/1/2022

**Drill Rig:** CME 55 (Truck)

**Driller:** Benbow

**Drilling Method:** Mud Rotary (4-in. diameter)

**Water Level:** Tidal

Depth (ft)	Material Description	Material Graphic	Sample			Actual Blows (6-in. interval)	Corrected N Value	Unit Weight (pcf)	Cohesion (psf)	Angle of Internal Friction (degrees)
			Depth	Type	Number					
	POORLY GRADED SAND WITH SILT (SP-SM): very loose to very dense, pale brown and gray, fine, moist to wet ( <i>continued</i> )				12	1-1-12	21	115		30
	- cemented in Samples 12 and 13									
40					13	19-20-32	81	120		40

Boring terminated at a depth of 41.5 feet.

**Remarks:**  
Soils to depths of 12 feet or deeper are believed to be uncontrolled fill.  
The Soil Consultants, Inc. Key to Boring Log Symbols and Terms contains explanations about symbols and terms used on the boring log.  
Corrected N values reflect  $N_{60}$  for clays and  $(N_1)_{60}$  for sands.



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

























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## KEY TO BORING LOG SYMBOLS AND TERMS











Soil Consultants, Inc.'s geotechnical engineer reviewed recovered samples, field data, and laboratory data to develop each boring log. Each log represents our interpretation of general soil and water conditions at the boring location. Soil classifications presented on the boring log are based on the Unified Soil Classification System (USCS) as outlined in ASTM D2487. The system is used to classify coarse-grained materials (boulders, cobbles, gravel, and sand) and fine-grained materials (silt and clay). Descriptors are added to describe additional constituents based on percentages of these constituents. In the absence of laboratory data required to classify soils in complete accordance with ASTM D2487, visual descriptions of the materials are provided with their interpreted USCS group name.

Subsurface conditions at the explored location(s) may not be indicative of subsurface conditions at other locations or at other times. Strata lines on the log may be transitional and are approximate in nature.

### USCS MATERIAL TYPES AND SYMBOLS

 Well-Graded Gravel (GW)	 Well-Graded Gravel with Sand (GW-GM)	 Well-Graded Gravel with Clay (GW-GC)	 Poorly-Graded Gravel (GP)	 Poorly-Graded Gravel with Sand (GP-GM)
 Poorly-Graded Gravel with Clay (GP-GC)	 Silty Gravel (GM)	 Clayey Gravel (GC)	 Well-Graded Sand (SW)	 Well-Graded Sand with Silt (SW-SM)
 Well-Graded Sand with Clay (SW-SC)	 Poorly-Graded Sand (SP)	 Poorly-Graded Sand with Silt (SP-SM)	 Poorly-Graded Sand with Clay (SP-SC)	 Silty Sand (SM)
 Clayey Sand (SC)	 Fat Clay (CH)	 Sandy Fat Clay (CH)	 Lean Clay (CL)	 Sandy Lean Clay (CL)
 Silty Clay (CL-ML)	 Elastic Silt (MH)	 Sandy Elastic Silt (MH)	 Silt (ML)	 Sandy Silt (ML)
 Organic Clay (OH)	 Organic Silt (OH)	 Organic Clay (OL)	 Organic Silt (OL)	 Peat (PT)

### LOCAL MATERIAL TYPES AND SYMBOLS

 Concrete	 Asphalt	 Base	 Wood	 Hard Layer
 Auger Sample	 Thin-walled tube	 Split barrel	 Core	 No Recovery

### STANDARD PENETRATION TEST (SPT)

Within a desired sampling interval, the SPT test includes seating the split-barrel sampler to 6-in. depth with blows from a 140-lb hammer. The sampler is advanced through two additional 6-in. deep intervals with blow counts recorded for each interval. The "N" value is the sum of the blows for the final 12 in. of the 18-inch penetration.

WOR	The sampler penetrated the full 18-in. test depth under the weight of the drill rod.
WOH	The sampler penetrated the full 18-in. test depth under the weight of the hammer.
1/18"	The sampler was driven the full 18-in. test depth by 1 blow of the 140-lb hammer.
50/3"	50 blow limit was recorded with 3 in. penetration of the sampler.
$N_{corrected}$	Standard Penetration Resistance Value (N value) corrected to $N_{60}$ for clays and to $(N_1)_{60}$ for sands.

### RELATIVE DENSITY AND CONSISTENCY

DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on the No. 200 Sieve) Gravels and Sands	
Density determined by Standard Penetration Resistance.	
Relative Density	SPT N Value
Very Loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 Sieve) Sils and Clays		
Consistency determined by laboratory strength testing, standard penetration resistance, or field visual-manual procedures.		
Unconfined Compressive Strength, tsf	Consistency	SPT N Value
< 0.25	Very Soft	0 - 2
0.25 to 0.50	Soft	3 - 4
0.50 to 1.00	Medium (Firm)	5 - 8
1.00 to 2.00	Stiff	9 - 15
2.00 - 4.00	Very Stiff	16 - 30
> 4.00	Hard	> 30



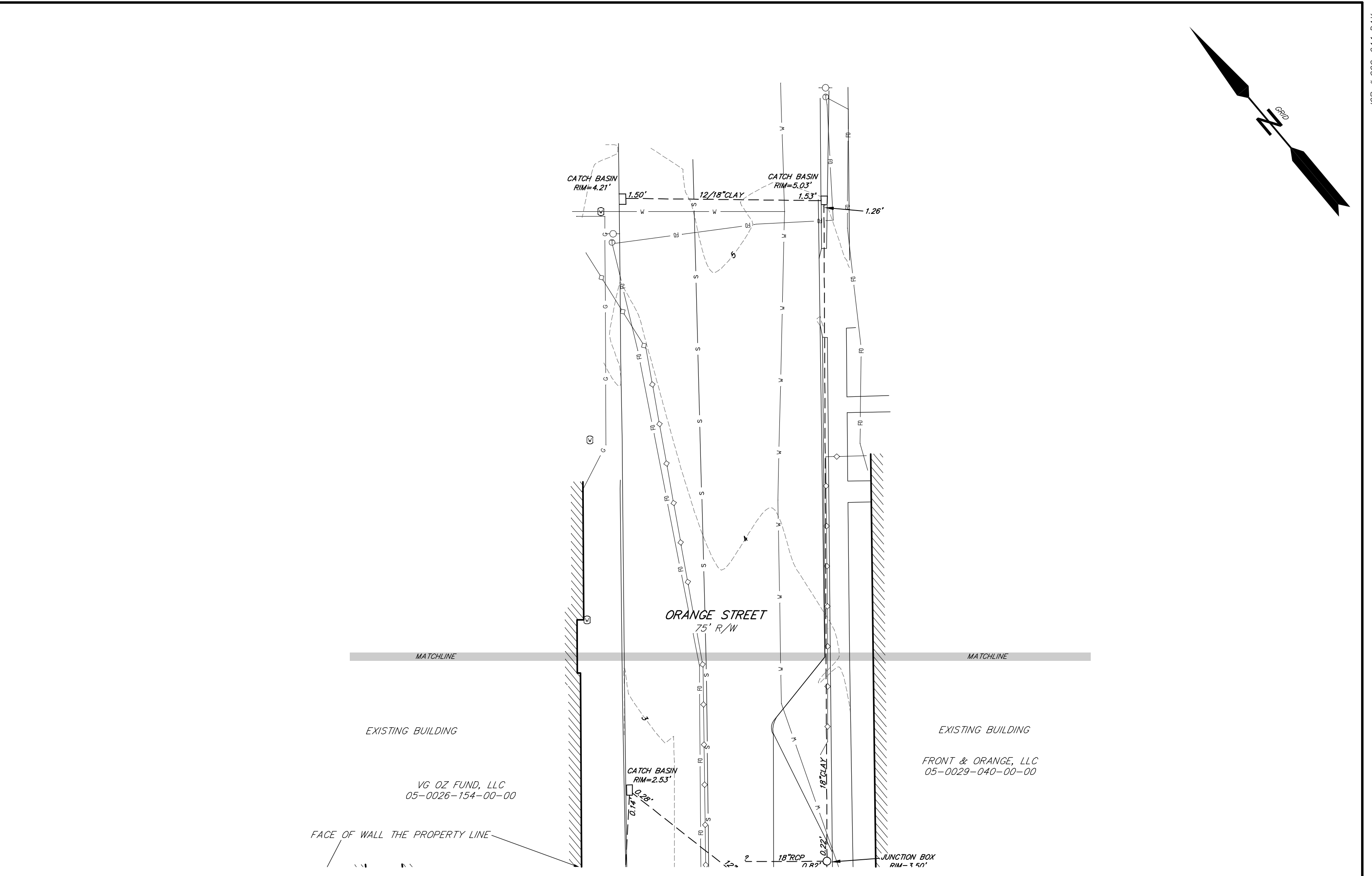
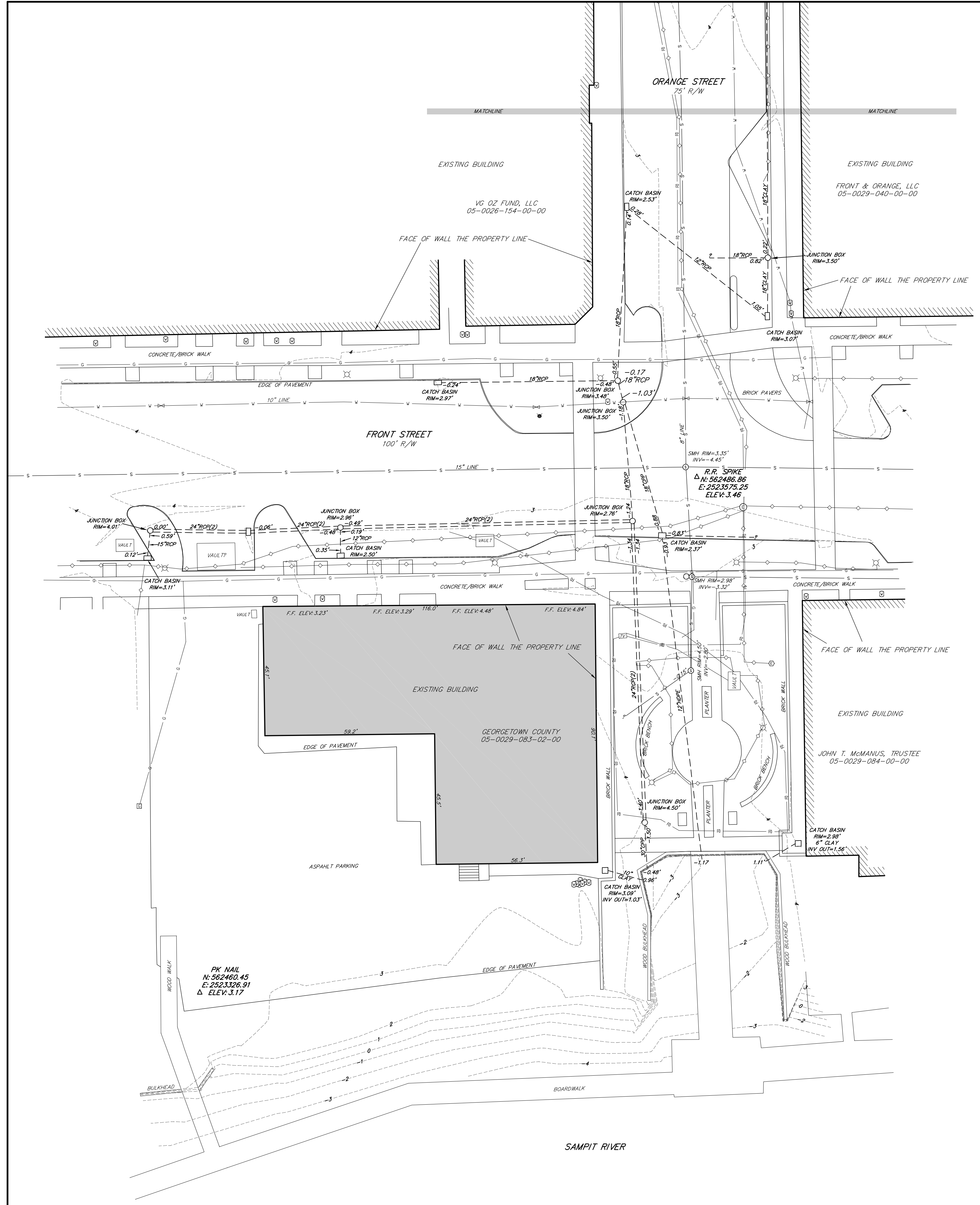
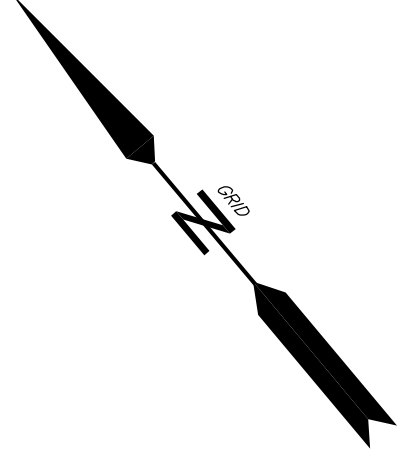
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Engineers and Geologists  
Since 1951

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# **Appendix C**

## Easement Exhibits

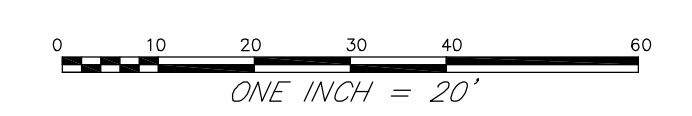




1. THIS PROPERTY IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD. NO TITLE SEARCH PERFORMED BY THIS OFFICE.
2. THIS SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF THE PERSON(S) OR ENTITY APPEARING ON SAID SURVEY. THIS SURVEY DOES NOT EXTEND TO ANY UNNAMED PERSON(S) OR ENTITY WITHOUT AN EXPRESSED RECERTIFICATION BY PARKER LAND SURVEYING, LLC.
3. THIS SURVEY IS NULL AND VOID IF SIGNATURE AND EMBOSSED SEAL ARE ABSENT.
4. ALL BEARINGS AND COORDINATES SHOWN HEREON ARE BASED ON SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM 1983. DISTANCES SHOWN HEREON ARE HORIZONTAL (GROUND) DISTANCES, NOT GRID DISTANCES.
5. ELEVATIONS SHOWN BASED ON NAVD 88 DATUM.
6. ALL UNDERGROUND UTILITY LOCATIONS PER MARKINGS PROVIDED BY LOWCOUNTRY LOCATING, LLC.
7. SIZES OF UNDERGROUND SEWER AND WATER UTILITIES PROVIDED BY THE CITY OF GEORGETOWN.
8. FOR AREAS SHOWN HEREON, EXISTING RIGHT OF WAYS AND PROPERTY LINES ARE DEFINED BY THE LOCATIONS OF THE FACES OF EXISTING BUILDINGS AND STRUCTURES.

**LEGEND**

I.P.F. - IRON PIPE FOUND	⊠ - WATER VALVE	—○— FIBER OPTIC LINE
I.R.F. - IRON REBAR/ROD FOUND	⊡ - WATER METER	—○— 10' TO 10'
⊙ - TELEPHONE PEDESTAL	⊙ - FIRE HYDRANT	—○— GAS LINE
⊠ - ELEC. POWER BOX	● - VALVE MARKER	—○— S
⊠ - CATV VAULT	⊙ - FIRE DEPT. CONNECTION	—○— SEWER LINE
⊠ - POWER POLE	⊙ - SEWER MANHOLE	—○— AERIAL ELECTRIC LINE
⊠ - LIGHT POLE	⊠ - SEWER CLEAN OUT	—○— BELOW GROUND ELECTRIC
⊠ - ELEC. MANHOLE	⊠ - FIBER OPTIC MANHOLE	—○— WATER LINE
⊠ - GUY WIRE		—○— W
⊠ - GAS VALVE		



**TOPOGRAPHIC SURVEY**  
**OF PORTIONS OF FRONT STREET**  
**AND ORANGE STREET**  
**SURVEYED FOR**

**WK DICKSON & CO., INC.**

LOCATED IN THE CITY OF GEORGETOWN,  
 GEORGETOWN COUNTY, SOUTH CAROLINA  
 DATE: APRIL 25, 2022

**PARKER LAND SURVEYING, LLC**  
 400 CHURCH STREET  
 GEORGETOWN, SC 29440  
 PHONE: (842) 458-4405

I HEREBY STATE THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS B AS SPECIFIED THEREIN.

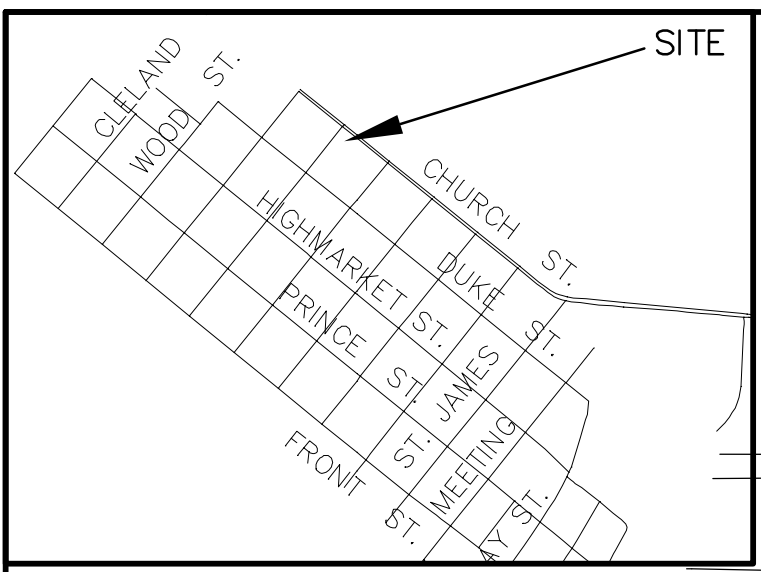
REGISTRATION NO. 17924  
 SURVEYOR  
**GREGORY F. CUNNINGHAM, C.S.P.L.S. No. 17924**

**PARKER LAND SURVEYING, LLC**  
 No. C03814  
 STATE OF SOUTH CAROLINA

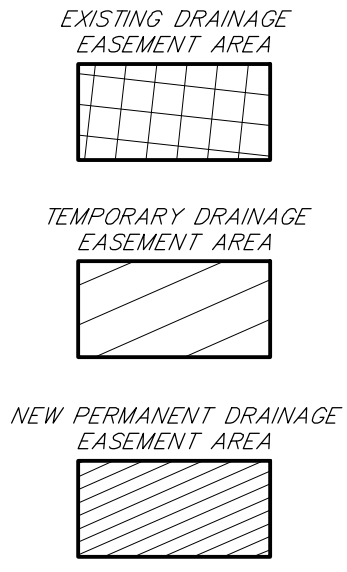
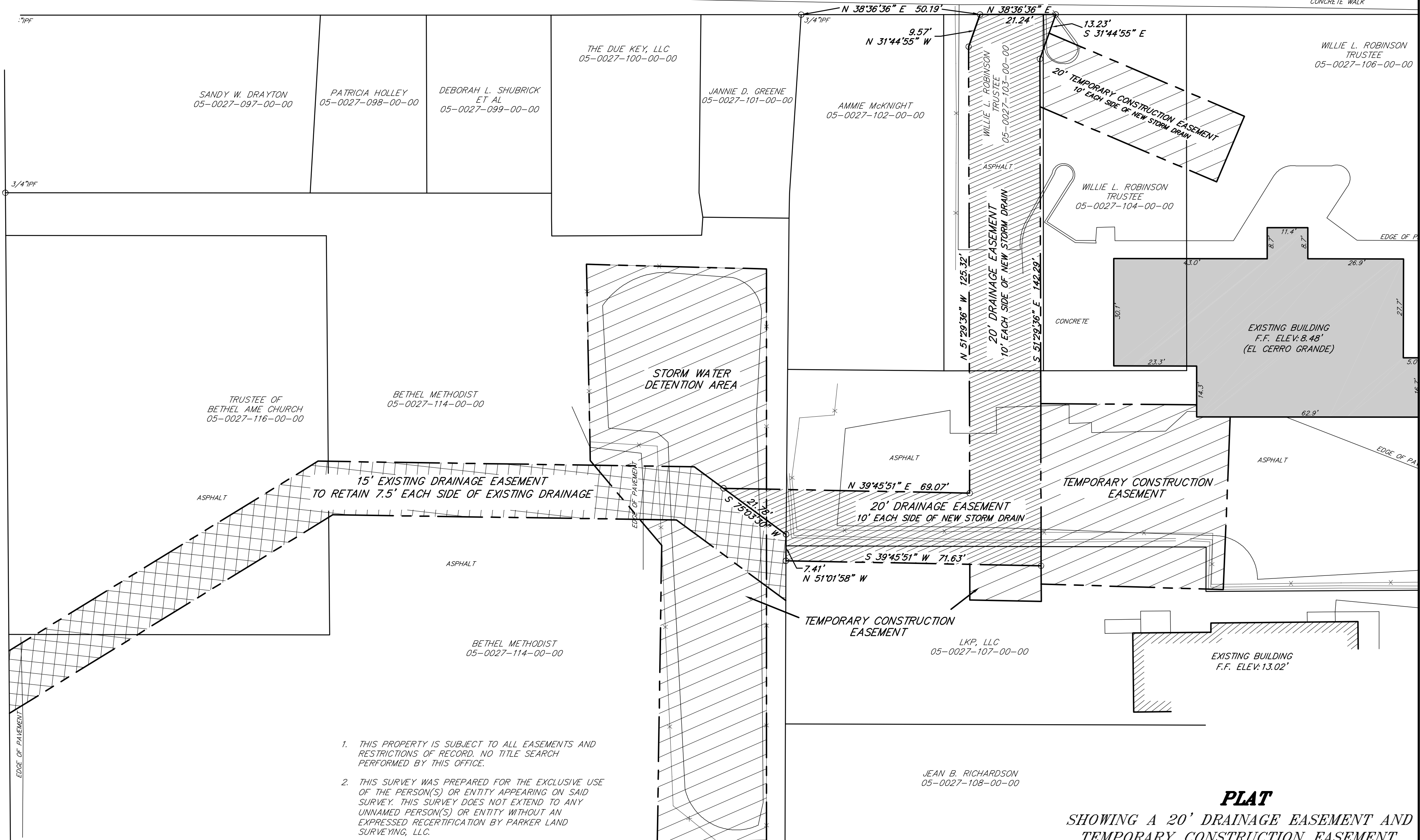
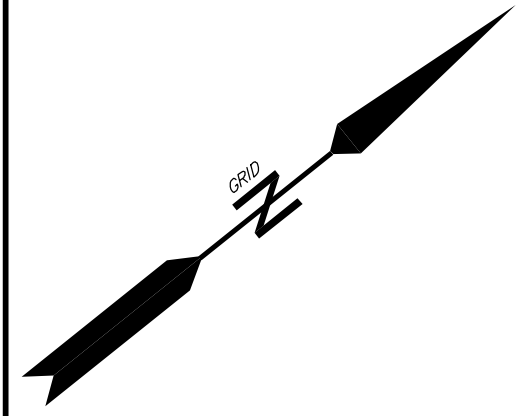




G.C.R.O.D.



ORANGE STREET  
75' R/W



DUKE STREET  
75' R/W

1. THIS PROPERTY IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD. NO TITLE SEARCH PERFORMED BY THIS OFFICE.
2. THIS SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF THE PERSON(S) OR ENTITY APPEARING ON SAID SURVEY. THIS SURVEY DOES NOT EXTEND TO ANY UNNAMED PERSON(S) OR ENTITY WITHOUT AN EXPRESSED RECERTIFICATION BY PARKER LAND SURVEYING, LLC.
3. THIS SURVEY IS NULL AND VOID IF SIGNATURE AND EMBOSSED SEAL ARE ABSENT.
4. ALL BEARINGS AND COORDINATES SHOWN HEREON ARE BASED ON SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM 1983. DISTANCES SHOWN HEREON ARE HORIZONTAL (GROUND) DISTANCES, NOT GRID DISTANCES.
5. PROPERTY LINES AND RIGHT OF WAYS SHOWN ARE A BEST FIT SOLUTION FROM PLATS, DEEDS, EXISTING EVIDENCE AND GEORGETOWN COUNTY GIS.

**PLS**

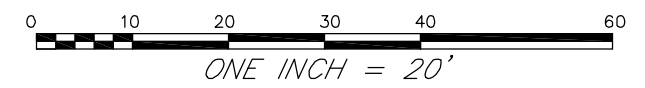
I HEREBY STATE THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS B AS SPECIFIED THEREIN.

**REG. SURVEYOR**  
No. 17924  
**GREGORY F. CUNNINGHAM**

**SOUTH CAROLINA**  
PARKER LAND SURVEYING, LLC  
No. C03814  
CERTIFICATE OF AUTHORIZATION

PARKER LAND SURVEYING, LLC  
400 CHURCH STREET  
GEORGETOWN, SC 29440  
PHONE: (842-458-4405)

S.C.P.L.S. No. 17924



**PLAT**  
SHOWING A 20' DRAINAGE EASEMENT AND  
TEMPORARY CONSTRUCTION EASEMENT,  
SURVEYED FOR  
**THE CITY OF GEORGETOWN**  
LOCATED IN THE CITY OF GEORGETOWN,  
GEORGETOWN COUNTY, SOUTH CAROLINA  
DATE: AUGUST 3, 2022

JOB # 022-044 DAY



# Appendix D

## Permits



U.S. ARMY CORPS OF ENGINEERS

BULKHEAD PERMIT





REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
CHARLESTON DISTRICT, CORPS OF ENGINEERS  
1949 INDUSTRIAL PARK ROAD, ROOM 140  
CONWAY, SOUTH CAROLINA 29526

February 8, 2021

Regulatory Division

Mr. Orlando Arteaga  
City of Georgetown Engineering Department  
PO Box 939  
Georgetown, South Carolina 29442  
[oarteaga@georgetownsc.gov](mailto:oarteaga@georgetownsc.gov)

Dear Mr. Arteaga:

Enclosed is your Department of the Army Permit # SAC-2018-00063. It authorizes you to perform the work specified on the attached drawings. This permit is issued under the provisions of the Federal laws for the protection and preservation of the navigable waters of the United States.

Please notify this office promptly, in writing, when you start and complete the work. The enclosed cards may be used for that purpose. Be aware that a special condition has been included in this permit which requires that a copy of the permit and drawings must be available at the work site during the entire time of construction.

FOR THE DISTRICT ENGINEER

Respectfully,

Digitally signed by  
FENNEL.TOMMY.E  
1259992903  
Date: 2021.02.08  
08:50:43 -05'00'

Tommy E. Fennel  
Chief, Northeast Branch

Enclosures:  
DA Permit # SAC-2018-00063  
Notice of Commencement/Completion Cards





## DEPARTMENT OF THE ARMY PERMIT

**Permittee:** Orlando Arteaga  
City of Georgetown  
PO Box 939  
Georgetown, South Carolina 29442

**Permit No:** SAC-2018-00063

**Issuing Office:** CHARLESTON DISTRICT

**NOTE:** The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

**Project Description:**

The work consists of the following aspects: Installing approximately 210 linear feet (0.010 acres) of vinyl sheet pile bulkhead, spanning from the east side of Constitution Park (behind 835 Front Street) west to Buzz's Roost (917 Front Street) with a portion of the bulkhead positioned waterward of an existing mooring basin / boat slip. Bulkhead construction is planned to coincide with the filling of an existing mooring basin / boat slip (0.05 acres) directly adjacent to Constitution Park. Additionally, the applicant is proposing to remove approximately 117 cubic yards of concrete debris accumulated over time and reestablish this area (0.075 acres) with native emergent marsh vegetation. Finally, the City of Georgetown will integrate several improvements to the existing city's storm drainage system in the form of new and enlarged drainage pipes to be incorporated into the proposed bulkhead. This is in accordance with the attached drawing sheets 1-8 of 8 entitled: "Constitution Park Bulkhead / SAC-2018-00063 / Georgetown, Georgetown County, South Carolina" and dated January 09, 2020.

**Project Location:**

The project is located on the Sampit River Bypass Channel at 901 Front Street, in the city of Georgetown, Georgetown County, South Carolina (Latitude: 33.3671 °N, Longitude: -79.2849 °W).

**Permit Conditions:**

**General Conditions:**

1. The time limit for completing the work authorized ends on **31 Dec 2025**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

**Special Conditions:**

SEE PAGE 4.

**Further Information:**

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

Section 404 of the Clean Water Act (33 U.S.C. 1344).

Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. **Reliance on Applicant's Data:** The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. **Reevaluation of Permit Decision.** This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.


6. **Extensions.** General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

  
\_\_\_\_\_  
Arteaga Orlando / City of Georgetown

2-5-2021  
\_\_\_\_\_  
(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

  
\_\_\_\_\_  
**Rachel A. Honderd**  
**Lieutenant Colonel, U.S. Army**  
**Commander and District Engineer**  
or her designee  
**Tommy Fennel**  
**Chief, Northeast Branch**

9 FEB 2021  
\_\_\_\_\_  
(DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
(TRANSFEREE)

\_\_\_\_\_  
(DATE)

**Special Conditions:**

- a. **The permittee agrees to provide all contractors associated with construction of the authorized activity a copy of the permit and drawings. A copy of the permit must be available at the construction site at all times.**
- b. **The permittee shall submit a signed compliance certification to the Corps within 60 days following completion of the authorized work and any required mitigation. The certification will include:**
  1. **A copy of this permit.**
  2. **A statement that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions.**
  3. **A statement that any required mitigation was completed in accordance with the permit conditions.**
  4. **The signature of the permittee certifying the completion of the work and mitigation.**
- c. **That impacts to aquatic areas do not exceed those specified in the above mentioned PCN, including any supplemental information or revised permit drawings that were submitted to the Corps by the permittee.**
- d. **That the construction, use, and maintenance of the authorized activity is in accordance with the information given in the PCN, including the supplemental information listed above, and is subject to any conditions or restrictions imposed by this letter.**
- e. **That the permittee shall submit the attached signed compliance certification to the Corps within 30 days following completion of the authorized work.**
- f. **No placement or stockpiling of excavated material in waters of the U.S. (double handling) is authorized.**
- g. **Fill material utilized as backfill for bulkhead construction and filling of the mooring basin will consist of clean earthen material (uncontaminated inert soil material).**
- h. **It is recognized that this structure is to be constructed on/or adjacent to an area subject to a prism and/or disposal easement held by the United States in perpetuity in conjunction with a Congressionally authorized project for the maintenance and improvement of the Sampit River Bypass Channel. This permit does not convey any property rights either in real estate or material or any exclusive use privileges; nor does it relinquish any right the United States has for the use of its easement or the maintenance and future widening or deepening of the Sampit River Bypass Channel pursuant to its easement rights.**
- i. **It is understood and agreed that if the District Commander determines this structure shall in any way in the future conflict with the improvement, operation, maintenance and widening or deepening of the Sampit River Bypass Channel, the owners themselves, their heirs, successors and assigns will remove said structure within 45 days from the date**

that written notice is given by the District Commander, and there shall be no entitlement to compensation from the United States for damage or injury.

- j. Conveyance of this permit applies only to the structures authorized and does not authorize the construction of any permanent structure or any structure suitable for habitation or any utility leading either to permanent structures suitable for habitation or to permanent structures within the bounds of areas on which the Corps of Engineers enjoys easement rights.**
- k. The permittee agrees that no permanent structures, beyond those authorized by this document, will be placed on the prism easement or on any adjacent disposal easement without written approval of the District Commander.**
- l. That the Secretary of the Army, representing the United States of America, hereby consents to the herein authorized facilities or structures to be located on or across easement lands vested in the United States of America for the construction and operation of the Sampit River Bypass Channel. The permittee shall not engage in any act which may interfere with or abridge the easement interests of the United States, except those specifically authorized herein.**
- m. That the permittee agrees to provide, as a part of the completion notification, as-built drawings which indicate all dimensions of the structure as well as the distance between the edge of the federal channel, and the waterward edge of the authorized structure. The drawings should also include the State Plane Coordinates, NAD 1983, for a minimum of two corners on each structure where it is closest to the federal channel. These drawings must be prepared by a registered land surveyor and submitted within sixty (60) days of the completion of the structure. Failure to provide these drawings will result in non-compliance with the permit and further enforcement action will be taken.**
- n. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or their authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.**
- o. Use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the U.S.**
- p. The permittee must install and maintain, at their expense, any safety lights and signals prescribed by the U.S. Coast Guard (USCG), through regulations or otherwise, on authorized facilities. The USCG may be reached at the following address and telephone number: (as of February 2013) U. S. Coast Guard District Seven, Waterways Management Branch, 909 SE 1st Ave, Suite 406, Miami, FL. 33131, and 305-415-6755 or 305-415-6750.**
- r. In order to ensure protection of any threatened or endangered species, and designated critical habitat that may be present in the vicinity of the project area during construction activities, the permittee will comply with the following:**

- 1. The permittee shall instruct all personnel associated with the project of the potential presence of and the need to avoid collisions with protected species, which may include but is not limited to West Indian manatees, Atlantic sturgeon, shortnose sturgeon, sea turtles, wood stork, blue whale, fin whale, North Atlantic right whale, sei whale and sperm whale.**
- 2. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing protected species, to include manatee(s), which are protected under the Marine Mammal Protection Act of 1972 and/or the Endangered Species Act of 1973.**
- 3. Any siltation barriers used during the project shall be made of material in which protected species, to include manatee(s), cannot become entangled and must be properly secured, and regularly monitored to avoid protected species entrapment.**
- 4. All vessels associated with the project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.**
- 5. If protected species, to include manatee(s), are seen within 100 yards of the active construction area all appropriate precautions shall be implemented to ensure protection of the protected species, to include manatee(s). These precautions shall include the operation of all moving equipment no closer than 50 feet to a protected species, to include manatee(s). Operation of any equipment closer than 50 feet to a protected species, to include manatee(s), shall necessitate immediate shutdown of that equipment. Activities will not resume until the protected species, to include manatee(s), has departed the project area of its own volition.**
- 6. Incidents where any individuals of sea turtles, Atlantic sturgeon, shortnose sturgeon, blue whale, fin whale, North Atlantic right whale, sei whale and sperm whale listed by NOAA Fisheries under the Endangered Species Act appear to be injured or killed as a result of discharges of dredged or fill material into waters of the United States or structures or work in navigable waters of the United States authorized by this DA permit shall be reported to NOAA Fisheries, Office of Protected Species at (727) 824-5312, the SCDNR Hotline at 1-800-922-5431, and the Regulatory Office of the Charleston District of the U.S. Army Corps of Engineers at (843) 329-8044. The finder should leave the animal alone, make note of any circumstances likely causing the death or injury, note the location and number of individuals involved and, if possible, take photographs. Adult animals should not be disturbed unless circumstances arise where they are obviously injured or killed by discharge exposure, or some unnatural cause. The finder may be asked to carry out instructions provided by NOAA Fisheries, Office of Protected Resources, to collect specimens or take other measures to ensure that evidence intrinsic to the specimen is preserved.**
- 7. The permittee understands and agrees that all in-water lines (rope, chain, and cable, including the lines to secure turbidity curtains) must be stiff, taut, and non-looping.**

**Examples of such lines are heavy metal chains or heavy cables that do not readily loop and tangle. Flexible in-water lines, such as nylon rope or any lines that could loop or tangle, must be enclosed in a plastic or rubber sleeve/tube to add rigidity and prevent the line from looping and tangling. In all instances, no excess line is allowed in the water. Where appropriate, in water wires should be fitted with PVC sleeve from the surface to the bottom to prevent any potential scraping of the passing manatees.**

- 8. The permittee understands and agrees that pilings will be installed using a water jet or vibratory hammer, to the maximum extent practicable. In the event standard pile driving (impact hammer) is utilized, the permittee understands and agrees that a soft-strike procedure (three strikes at 40%-60% energy level once a minute for 3 minutes) must be conducted prior to beginning pile driving activities and after any pile driving interruptions of more than 30 minutes.**
  - 9. That the permittee understands and agrees that pile driving activities must be limited to 12 hours per day with a 12-hour rest period between pile driving activities to avoid potential cumulative noise impacts to Federally-listed Threatened and Endangered (T&E) species.**
- s. In order to ensure protection and reduce potential construction-related impacts to West Indian manatees that may enter the project area during construction activities performed outside the winter months, to discountable and insignificant levels, the permittee will comply with the following for all projects affecting the coastal waters of South Carolina:**
- 1. The permittee shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel MUST monitor water-related activities for the presence of manatee(s) during May 1 - November 15. Construction personnel are requested to monitor outside of that timeframe as manatees may be in the area before or after the above dates.**
  - 2. Any collision with and/or injury to a manatee shall be reported immediately to the U.S. Fish and Wildlife Service contacts: Melanie Olds, South Carolina Manatee Lead, Charleston Field Office, at 843-727-4707 ext. 205; or Terri Calleson, Manatee Recovery Coordinator, North Florida Field Office, at 904-731-3286.**
- t. If any previously unknown historic, cultural or archeological remains and artifacts are discovered while accomplishing the activity authorized by this permit, the permittee must immediately notify the district engineer of what has been found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.**
- u. Prior to beginning the authorized work, the permittee must coordinate with the local NFIP flood plain manager and comply with FEMA requirements. A list of NFIP floodplain managers may be found at: <http://www.dnr.sc.gov/water/flood/index.html>.**

NOTICE OF COMMENCEMENT OR COMPLETION  
OF WORK AUTHORIZED BY PERMIT

\_\_\_\_\_  
DATE

WORK AUTHORIZED BY DEPARTMENT OF THE ARMY PERMIT SAC-2018-00063

DATED February 8, 2021

TO PERFORM WORK IN Sampit River  
(WATERBODY NAME)

WAS COMMENCED

ON \_\_\_\_\_  
(DATE)

WAS COMPLETED

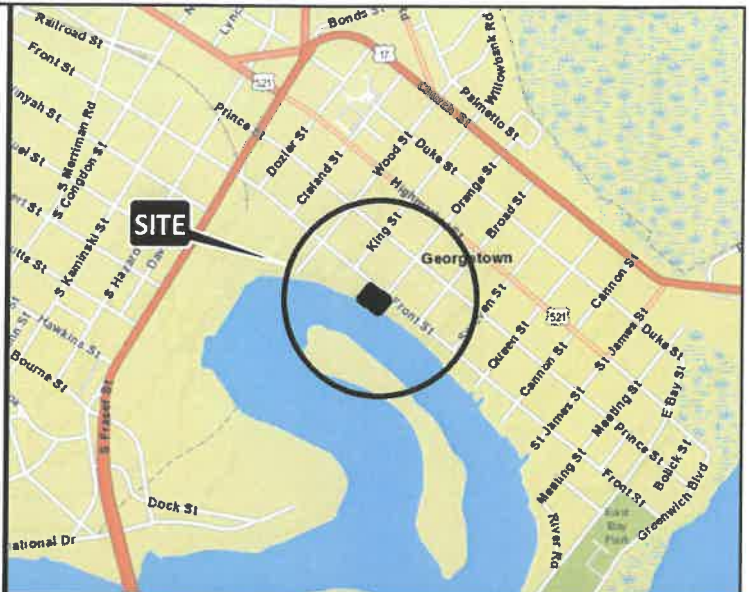
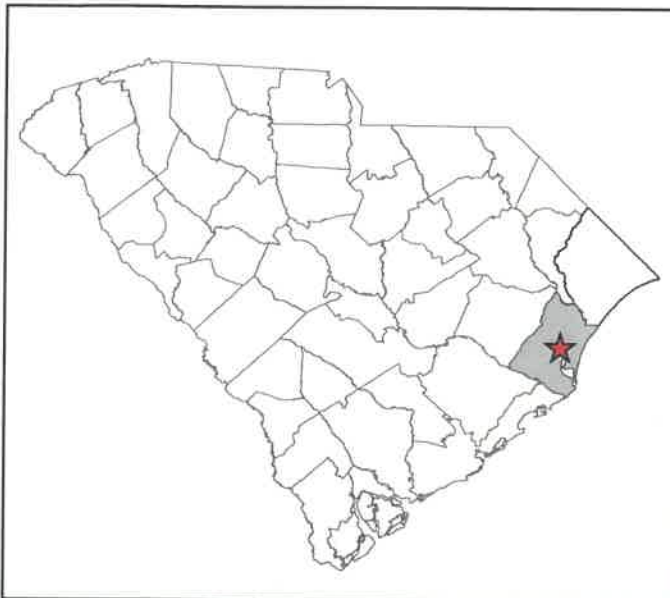
(choose appropriate response)

\_\_\_\_\_  
(SIGNATURE)

PM:BH

FL 130  
5 MAR 79






Constitution Park Bulkhead  
SAC-2018-00063

Georgetown, Georgetown County, South Carolina  
Sheet 1 of 8 January 09, 2020

**PERMITTED  
PLANS**

**EARTHWORKS**  
planning and design consultants  
11655 HIGHWAY 707  
MURRELLS INLET, SC 29576  
phone - 843-651-7900  
fax - 843-651-7903  
[www.earthworksgroup.com](http://www.earthworksgroup.com)

**SITE/VICINITY MAP**  
**Coastal Carolina Building  
and Constitution Park Bulkhead**



0 50 100 200 SCALE  
1:2,400  
Feet 1"= 200'

APPLICANT: **City of Georgetown  
& Georgetown County**

LOCATION: 901 Front Street and Constitution Park  
Georgetown, SC

LAT/LONG: 33.367232°, -79.285047°  
USGS QUAD: GEORGETOWN

DATE: 7/19/2019

**Figure 1**  
TEG PN: 191024.000





Constitution Park Bulkhead  
 SAC-2018-00063  
 Georgetown, Georgetown County, South Carolina  
 Sheet 2 of 8 January 09, 2020

**PERMITTED  
 PLANS**

<b>Map Name:</b> NRCS Soil Map			<small>Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community</small>	<b>Figure 2</b>										
<b>Project Title:</b> Coastal Carolina Building and Constitution Park Bulkhead		<b>Project Location:</b> 901 Front Street/Constitution Park		<b>DOCUMENT #:</b>										
<b>AGENT:</b> 11655 HIGHWAY 707 MURRELLS INLET, SC 29576 phone - 843-651-7900 fax - 843-651-7903 <a href="http://www.earthworksgroup.com">www.earthworksgroup.com</a>			<b>SCALE:</b> 1:2,400 1" = 200' 	<b>LAT/LONG:</b> 33.367194° by -79.284985°	<b>REVISION SCHEDULE:</b> <table border="1"> <thead> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO	DATE	BY						
NO	DATE	BY												

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**Constitution Park Bulkhead**

**SAC-2018-00063**

**Georgetown, Georgetown County, South Carolina**

**Sheet 4 of 8 January 09, 2020**

**PERMITTED  
PLANS**

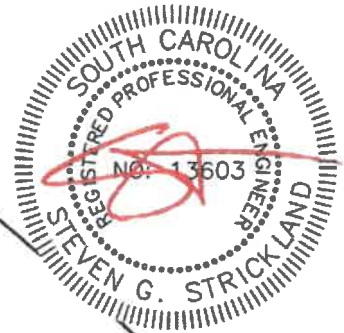
<b>Map Name:</b> Proposed Bulkhead Update	<b>Estimated Vegetation Cover:</b> 2950 ft <sup>2</sup>		<small>Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community</small>	<b>Figure 4</b>										
<b>Project Title:</b> Coastal Carolina Building and Constitution Park Bulkhead		<b>Project Location:</b> 901 Front Street/Constitution Park	<b>DOCUMENT #:</b>	<b>DATE:</b> 3/15/2019 <b>TEG PN:</b> 191024 <b>AUTHOR:</b> JRODES										
<b>AGENT:</b>  <small>planning and design consultants</small>	11655 HIGHWAY 707 MURRELLS INLET, SC 29576 phone - 843-651-7900 fax - 843-651-7903 <a href="http://www.earthworksgroup.com">www.earthworksgroup.com</a>		<b>SCALE:</b> 1:955 1" = 80' 	<b>LAT/LONG:</b> 33.367194° by -79.284995° <b>USGS QUAD NAME:</b> Georgetown South, SC <b>FIGURE:</b> 1	<b>REVISION SCHEDULE:</b> <table border="1"> <thead> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO	DATE	BY						
NO	DATE	BY												

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**Constitution Park Bulkhead**  
**SAC-2018-00063**  
**Georgetown, Georgetown County, South Carolina**  
**Sheet 5 of 8 January 09, 2020**

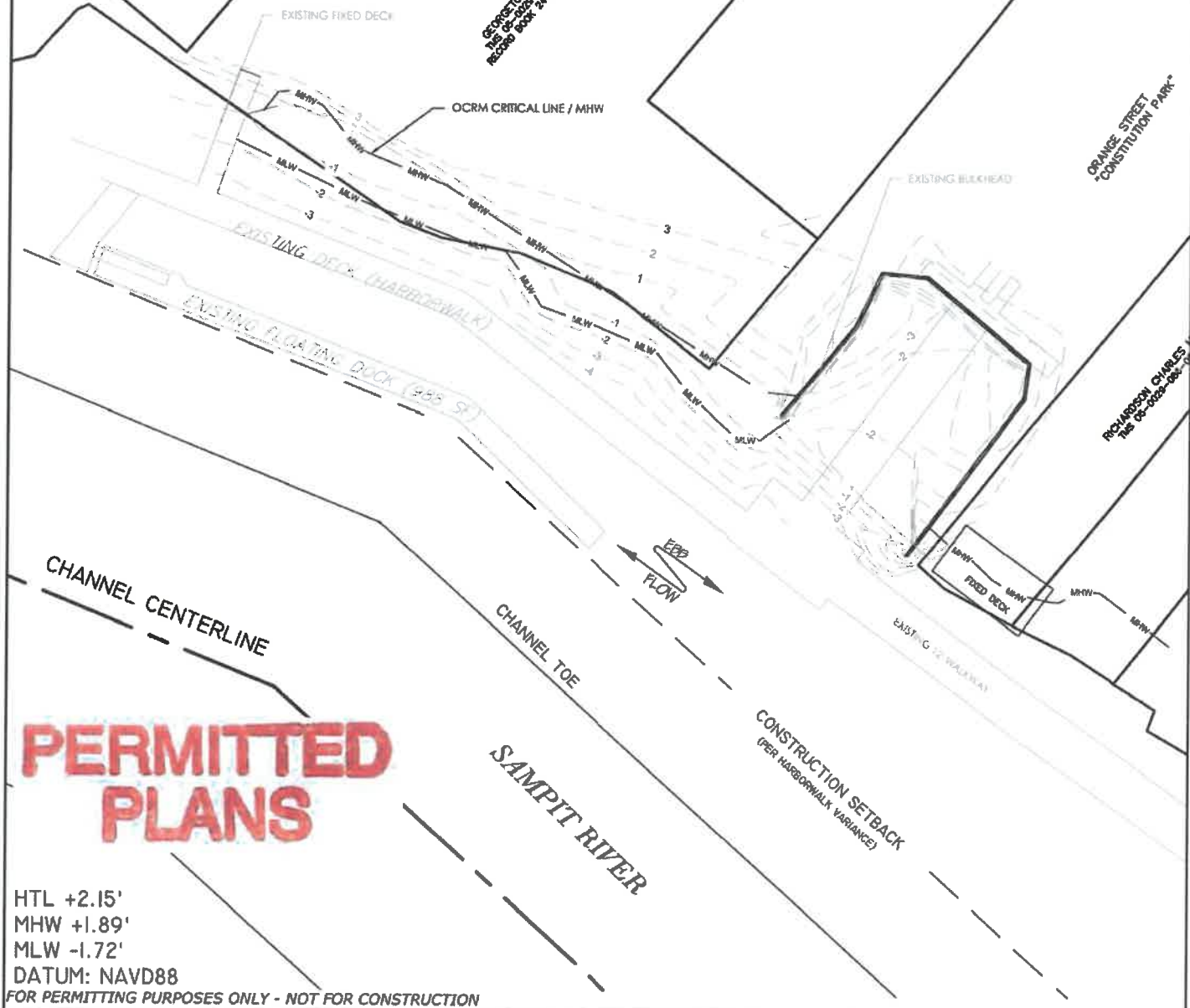


BLACK WATER P.C. LLC  
 REG. 05-0028-083-01-00

GEORGETOWN COUNTY  
 REG. 05-0028-083-01-00  
 RECORD BOOK 20441, PAGE 106

ORANGE STREET  
 CONSTITUTION PARK

ROBARSON CHARLES  
 REG. 05-0028-083-01-00


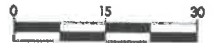


**PERMITTED  
 PLANS**

HTL +2.15'  
 MHW +1.89'  
 MLW -1.72'  
 DATUM: NAVD88  
 FOR PERMITTING PURPOSES ONLY - NOT FOR CONSTRUCTION

**EARTHWORKS**  
 planning and design consultants  
 11655 HIGHWAY 707  
 MURRELLS INLET, SC 29576  
 phone - 843.651.7900  
 fax - 843.651.7903  
 earthworksgroup.com

**EXISTING SITE**  
 Coastal Carolina Building &  
 Constitution Park Bulkhead



 SCALE  
 1" = 40'

APPLICANT: **City of Georgetown & Georgetown County**

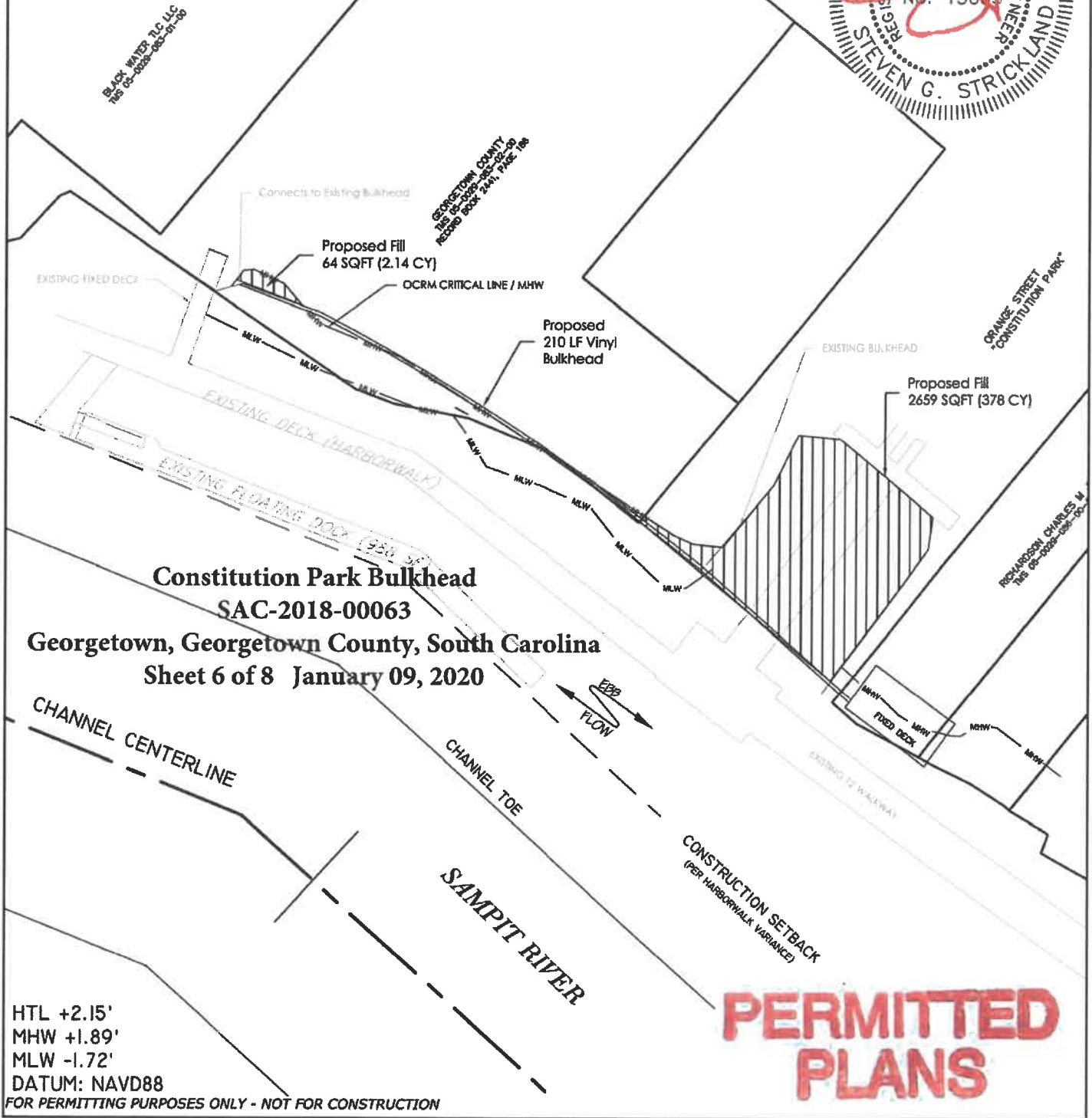
LOCATION: 901 Front Street  
 Georgetown, SC  
 LAT/LONG: 33.367232, -79.285047  
 USGS QUAD: Georgetown

DATE: 06/19/2019  
 TEG PN: 191024

SHEET  
**1**



Note: The controlling dimension for structures on the Sampit River Bypass Channel is the distance from the waterward end of the structures to the edge of the Federal Channel. The controlling dimension for the proposed structure(s) is 30' from the edge of the Federal Channel.



**Constitution Park Bulkhead**  
**SAC-2018-00063**  
**Georgetown, Georgetown County, South Carolina**  
**Sheet 6 of 8 January 09, 2020**

**PERMITTED PLANS**

**EARTHWORKS**  
 planning and design consultants  
 11655 HIGHWAY 707  
 MURRELLS INLET, SC 29576  
 phone - 843.651.7900  
 fax - 843.651.7903  
 earthworksgroup.com

**PROPOSED SITE**  
 Coastal Carolina Building &  
 Constitution Park Bulkhead

SCALE  
 1" = 40'

APPLICANT: City of Georgetown & Georgetown County

LOCATION: 901 Front Street  
 Georgetown, SC

LAT/LONG: 33.367232, -79.285047  
 USGS QUAD: Georgetown

DATE: 07/10/2019

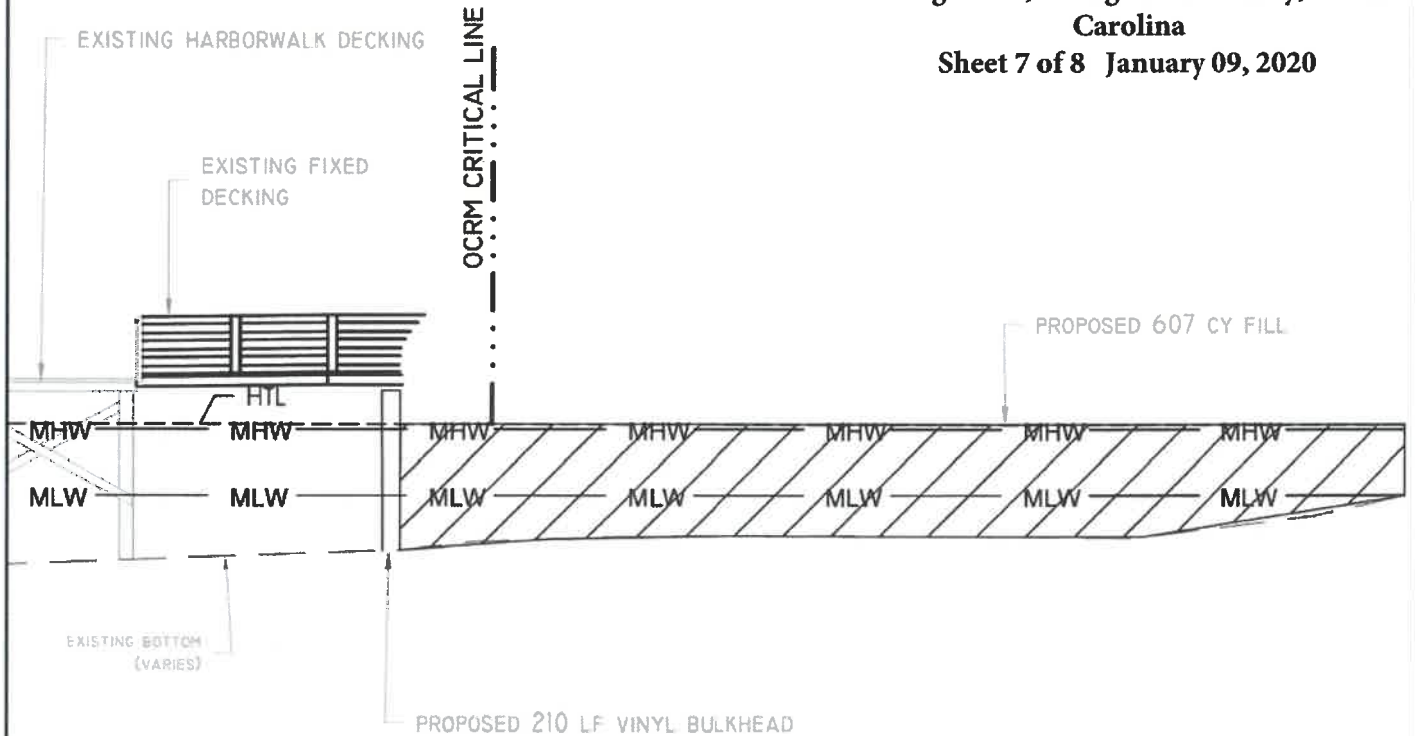
TEG PN: 191024

**SHEET**  
**2**



# PERMITTED PLANS

**Constitution Park Bulkhead**  
**SAC-2018-00063**  
**Georgetown, Georgetown County, South Carolina**  
**Sheet 7 of 8 January 09, 2020**



HTL +2.15'  
MHW +1.89'  
MLW -1.72'  
DATUM: NAVD88

FOR PERMITTING PURPOSES ONLY - NOT FOR CONSTRUCTION

**EARTHWORKS**  
*planning and design consultants*  
11655 HIGHWAY 707  
MURRELLS INLET, SC 29576  
phone - 843.651.7900  
fax - 843.651.7903  
earthworksgroup.com

**PROFILE VIEW**  
Coastal Carolina Building &  
Constitution Park Bulkhead

SCALE  
1" = 10'

APPLICANT: **City of Georgetown & Georgetown County**  
LOCATION: 901 Front Street  
Georgetown, SC  
LAT/LONG: 33.367232, -79.285047  
USGS QUAD: Georgetown

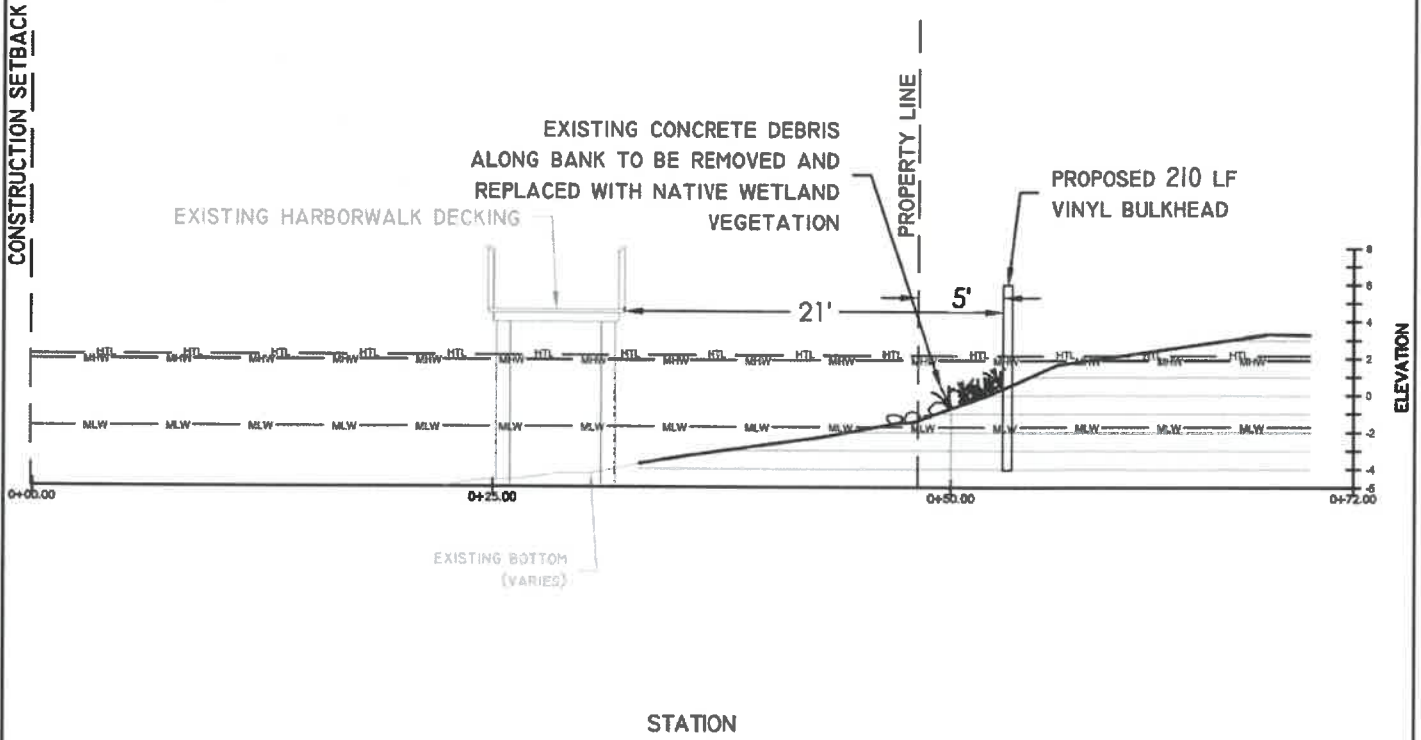
DATE: 07/09/2019  
TEG PN: 191024

**SHEET**  
**3**



# PERMITTED PLANS

Constitution Park Bulkhead  
 SAC-2018-00063  
 Georgetown, Georgetown County,  
 South Carolina  
 Sheet 8 of 8 January 09, 2020



HTL +2.15'  
 MHW +1.89'  
 MLW -1.72'  
 DATUM: NAVD88

FOR PERMITTING PURPOSES ONLY - NOT FOR CONSTRUCTION

**EARTHWORKS**  
 planning and design consultants  
 11655 HIGHWAY 707  
 MURRELLS INLET, SC 29576  
 phone - 843.651.7900  
 fax - 843.651.7903  
 earthworksgroup.com

**PROFILE VIEW B**  
 Coastal Carolina Building &  
 Constitution Park Bulkhead

0 5 10  
 SCALE  
 1" = 10'

APPLICANT: City of Georgetown  
 Georgetown, SC

LOCATION: 901 Front Street  
 Georgetown, SC

LAT/LONG: 33.367232, -79.285047

USGS QUAD: Georgetown

DATE: 07/09/2019

TEG PN: 191024

SHEET  
 4





SC DHEC - OCRM

CCU BULKHEAD PERMIT





October 27, 2020

Georgetown County  
PO Box 421270  
Georgetown, SC 29442

Re: OCRM02005

Dear Georgetown County:

The Office of Ocean and Coastal Resource Management (the Department) has reviewed your application to construct an erosion control structure at 901 Front Street, Georgetown, Georgetown County, South Carolina and has issued a permit for this work. You should carefully read the description of the authorized project and special conditions that have been placed on the permit, as these conditions may modify the permitted activity. In addition, there are a series of general conditions that should be reviewed. The original and one photocopy of the permit, as issued, are enclosed. After carefully reading the permit, if you wish to accept the permit as issued, sign and date in the signature block entitled "PERMITTEE" on the original version of the permit and **return it to this Department. Keep the photocopy for your records.**

**PLEASE READ CAREFULLY:** You are required to sign and return the original version of your permit to this Department. If this permit is not signed and returned within thirty (30) days of issuance, OR appealed within 15 days as described on the enclosed "Guide to Board Review", the Department reserves the right to cancel this permit. Please carefully review the enclosed "Guide to Board Review" for information and deadlines for appealing this permit.

**We have also enclosed a "request for a construction placard" card. You must send in this card before the time you wish to start construction. At that time a construction placard will be sent to you to post at the construction site.**

**PLEASE NOTE:** You are not authorized to commence work under the permit until we have received the original version of the entire permit signed and accepted by you, and a construction placard has been issued and posted at the construction site. The receipt of this permit does not relieve you of the responsibility of acquiring any other federal, state, or local permits that may be required. Please return the signed permit to the following address:

Office of Ocean and Coastal Resource Management  
927 Shine Ave  
Myrtle Beach, SC 29577

Sincerely,

Kendra G Elliott  
Project Manager  
Critical Area Permitting Section

Enclosure



**SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL  
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT**

**CRITICAL AREA PERMIT & COASTAL ZONE CONSISTENCY CERTIFICATION**

**Permittee(s):** Georgetown County  
**Permit Number(s):** OCRM02005  
**Date of Issuance:** October 27, 2020  
**Expiration Date:** October 27, 2025  
**Location:** On and adjacent to Sampit River at 901 Front Street, Georgetown  
Georgetown County, South Carolina (TMS#: 0500290830200)

SEE SPECIAL  
CONDITION(S)

This permit is issued under the provisions of S. C. Code Ann. Section 48-39-10, et seq., and 23A S.C. Code Ann. Regs. 30-1 through 30-18, *as amended*. **Please carefully read the project description and special conditions that appear on this permit/certification as they will affect the work that is allowed and may modify the work from that shown on the submitted plans. All special conditions attached to the permit will take precedent over submitted plans.** The general conditions are also a part of this permit/certification and should be read in their entirety. The S. C. Contractor's Licensing Act of 1999, enacted as S.C. Code Ann. Section 40-11-5 through 430, requires that all construction with a total cost of \$5,000 or more be performed by a licensed contractor with a valid contractor's license for marine class construction, except for construction performed by a private landowner for strictly private purposes. Your signature on and acceptance of this permit denotes your understanding of the stated law regarding use of licensed contractors. **All listed special and general conditions will remain in effect for the life of the permit. This applies to permittee, future property owners, or permit assignees.**

**DESCRIPTION OF THE PROJECT, AS AUTHORIZED**

The work, as authorized, consists of constructing an erosion control structure and planting native vegetation. Specifically, the permittee is authorized to construct a 210LF vinyl bulkhead within 18" of the certified critical area line. Additionally, the permittee is authorized to restore the embankment channelward of the bulkhead by planting salt tolerant vegetation. The work, as described is for erosion control and habitat restoration.

**SPECIAL CONDITIONS**

1. The bulkhead will be constructed within 18" of the certified critical area line dated 6/12/2020.
2. A planting plan must be submitted to the Department within 30 days of issuance of this permit. The plan must include a species list, planting spacing details, monitoring schedule, and success criteria for the restoration.
3. Once project construction is initiated, it is carried to completion in an expeditious manner in order to minimize the period of impact to the resource.
4. An as-built survey of the structure(s) must be submitted to the Department within 90 days from completion of construction. The survey must be performed by a registered land surveyor, must show all components of the structure(s), and must list the starting and ending coordinates of the structure(s) in the SC State Plane Coordinate System, which can be obtained by survey-grade Global Positioning System equipment.

5. In the event that any historic or cultural resources and/or archaeological materials are found during the course of work, the applicant must notify the State Historic Preservation Office and the South Carolina Institute of Archaeology and Anthropology. Historic or cultural resources consist of those sites listed in the National Register of Historic Places and those sites that are eligible for the National Register. Archaeological materials consist of any items, fifty years old or older, which were made or used by man. These items include, but are not limited to, stone projectile points (arrowheads), ceramic sherds, bricks, worked wood, bone and stone, metal and glass objects, and human skeletal materials.


PERMITTEE'S ATTENTION IS DIRECTED TO GENERAL CONDITIONS NUMBERS FOUR (4) AND FIVE (5). BY ACCEPTANCE OF THIS PERMIT, PERMITTEE IS PLACED ON NOTICE THAT THE STATE OF SOUTH CAROLINA, BY ISSUING THIS PERMIT, DOES NOT WAIVE ITS RIGHTS TO REQUIRE PAYMENT OF A REASONABLE FEE FOR USE OF STATE LANDS AT A FUTURE DATE IF SO DIRECTED BY STATUTE.

THE PERMITTEE, BY ACCEPTANCE OF THIS PERMIT AGREES TO ABIDE BY THE TERMS AND CONDITIONS CONTAINED HEREIN AND TO PERFORM THE WORK IN STRICT ACCORDANCE WITH THE PLANS AND SPECIFICATIONS ATTACHED HERETO AND MADE A PART HEREOF. ANY DEVIATION FROM THESE CONDITIONS, TERMS, PLANS AND SPECIFICATIONS SHALL BE GROUNDS FOR REVOCATION, SUSPENSION OR MODIFICATION OF THIS PERMIT AND THE INSTITUTION OF SUCH LEGAL PROCEEDINGS AS THE DEPARTMENT MAY CONSIDER APPROPRIATE.

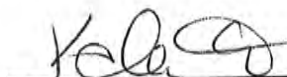
Permit Number: **OCRM02005**

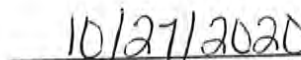
**Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.**

  
\_\_\_\_\_  
PERMITTEE(S)  
Georgetown County

  
\_\_\_\_\_  
DATE

**This permit becomes effective when the State official, designated to act for the Office of Ocean and Coastal Resource Management, has signed below.**

  
\_\_\_\_\_  
CRITICAL AREA PERMITTING PROJECT MANAGER  
Kendra G Elliott  
Or Other Authorized State Official

  
\_\_\_\_\_  
DATE

SEE SPECIAL  
CONDITION(S)

**GENERAL CONDITIONS:**

This construction and use permit is expressly contingent upon the following conditions which are binding on the permittee:

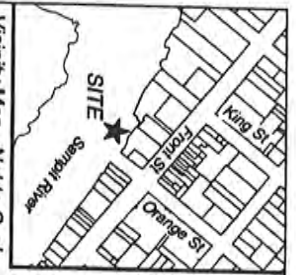
1. The permittee, in accepting this permit, covenants and agrees to comply with and abide by the provisions and conditions herein and assumes all responsibility and liability and agrees to save the Department and the State of South Carolina, its employees or representatives, harmless from all claims of damage arising out of operations conducted pursuant to this permit.
2. If the activity authorized herein is not constructed or completed within five years of the date of issuance, this permit shall automatically expire. A request, in writing, for an extension of time shall be made not less than thirty days prior to the expiration date.
3. All authorized work shall be conducted in a manner that minimizes any adverse impact on fish, wildlife and water quality.
4. This permit does not relieve the permittee from the requirements of obtaining a permit from the U. S. Army Corps of Engineers or any other applicable federal agency, nor from the necessity of complying with all applicable local laws, ordinances, and zoning regulations. This permit is granted subject to the rights of the State of South Carolina in the navigable waters and shall be subject, further, to all rights held by the State of South Carolina under the public trust doctrine as well as any other right the State may have in the waters and submerged lands of the coast.
5. This permit does not convey, expressly or impliedly, any property rights in real estate or material nor any exclusive privileges; nor does it authorize the permittee to alienate, diminish, infringe upon or otherwise restrict the property rights of any other person or the public; nor shall this permit be interpreted as appropriating public properties for private use.
6. The permittee shall permit the Department or its authorized agents or representatives to make periodic inspections at any time deemed necessary to ensure that the activity being performed is in accordance with the terms and conditions of this permit.
7. Any abandonment of the permitted activity will require restoration of the area to a satisfactory condition as determined by the Department
8. This permit may not be transferred to a third party without prior written notice to the Department, either by the transferee's written agreement to comply with all terms and conditions of this permit or by the transferee subscribing to this permit and thereby agreeing to comply.
9. If the display of lights and signals on any structure or work authorized herein is not otherwise provided for by law, such lights and special signals as may be prescribed by the United States Coast Guard shall be installed and maintained by and at the expense of the permittee.
10. The permit construction placard or a copy of the placard shall be posted in a conspicuous place at the project site during the entire period of work.
11. The structure or work authorized herein shall be in accordance with the permit, as issued, and shall be maintained in good condition. Failure to build in accordance with the permit, as issued, or failure to maintain the structure in good condition, shall result in the revocation of this permit.

SEE SPECIAL  
CONDITION(S)

12. The authorization for activities or structures herein constitutes a revocable license. The Department may require the permittee to modify activities or remove structures authorized herein if it is determined by the Department that such activity or structures violates the public's health, safety, or welfare, or if any activity is inconsistent with the public trust doctrine. Modification or removal under this condition shall be ordered only after reasonable notice stating the reasons therefore and provision to the permittee of the opportunity to respond in writing. When the Permittee is notified that the Department intends to revoke the permit, Permittee agrees to immediately stop work pending resolution of the revocation.
13. The Department shall have the right to revoke, suspend, or modify this permit in the event it is determined the permitted structure (1) significantly impacts the public health, safety and welfare, and/or is violation of Section 48-39-150, (2) adversely impacts public rights, (3) that the information and data which the permittee or any other agencies have provided in connection with the permit application is either false, incomplete or inaccurate, or (4) that the activity is in violation of the terms and/or conditions, including any special conditions of the permit. That the permittee, upon receipt of the Department's written intent to revoke, suspend, or modify the permit has the right to a hearing. Prior to revocation, suspension, or modification of this permit, the Department shall provide written notification of intent to revoke to the permittee, and permittee can respond with a written explanation to the Department. (South Carolina Code Section 1-23-370 shall govern the procedure for revocation, suspension or modification herein described).
14. Any modification, suspension or revocation of this permit shall not be the basis of any claim for damages against the Department or the State of South Carolina or any employee, agent, or representative of the Department or the State of South Carolina.
15. All activities authorized herein shall be, if they involve a discharge or deposit into navigable waters or ocean waters, at all times consistent with all applicable water quality standards, effluent limitations, and standards of performance, prohibitions, and pretreatment standards established pursuant to applicable federal, state and local laws.
16. Extreme care shall be exercised to prevent any adverse or undesirable effects from this work on the property of others. This permit authorizes no invasion of adjacent private property, and the Department assumes no responsibility or liability from any claims of damage arising out of any operations conducted by the permittee pursuant to this permit.

SEE SPECIAL  
CONDITION(S)

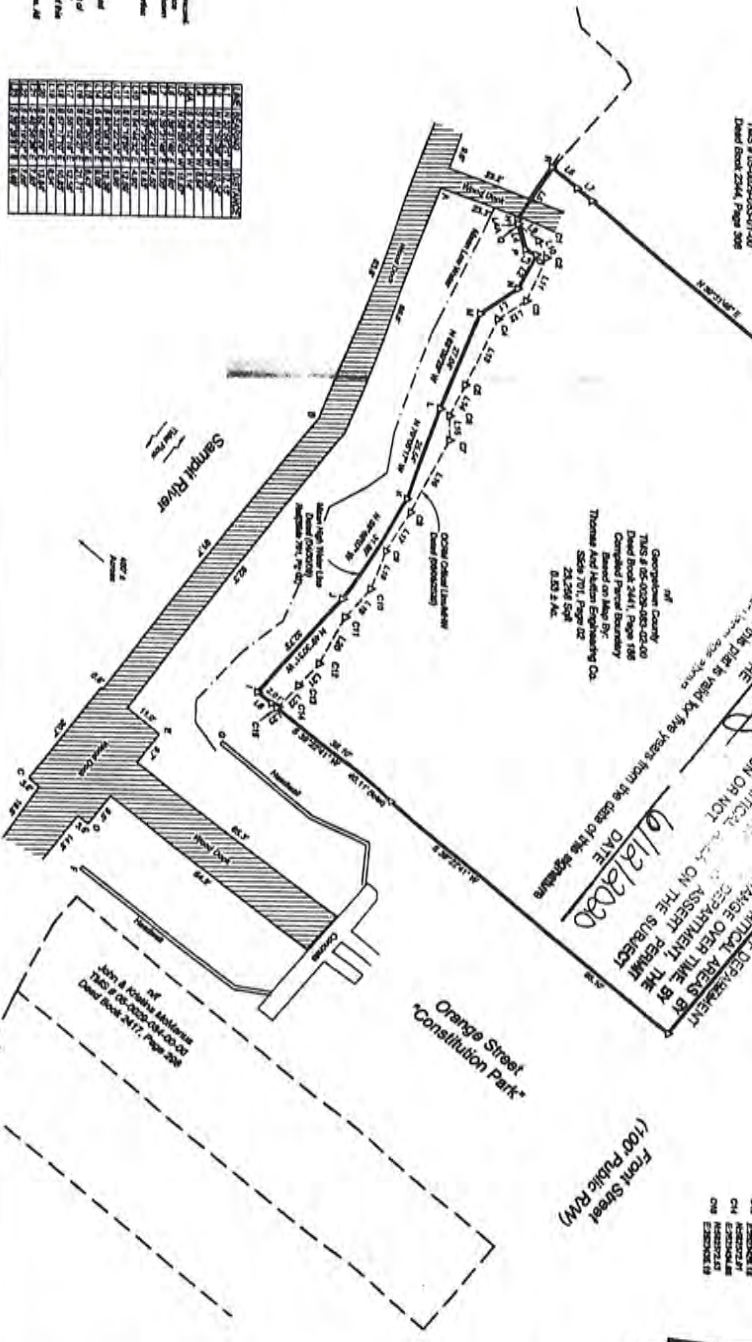




- A. HORIZONTAL
- B. VERTICAL
- C. 45 DEGREE
- D. 135 DEGREE
- E. 225 DEGREE
- F. 315 DEGREE
- G. 0 DEGREE
- H. 90 DEGREE
- I. 180 DEGREE
- J. 270 DEGREE
- K. 360 DEGREE
- L. 45 DEGREE
- M. 135 DEGREE
- N. 225 DEGREE
- O. 315 DEGREE
- P. 0 DEGREE
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- S. 270 DEGREE
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Station	Angle	Distance	Bearing
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99	2.37	2.37	2.37
100	2.37	2.37	2.37

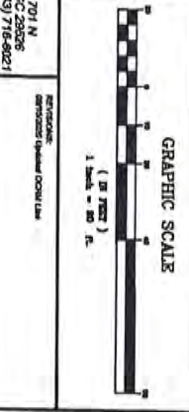


I, the undersigned, being a duly licensed Professional Surveyor in the State of South Carolina, do hereby certify that the foregoing is a true and correct copy of the original field notes and computations of the above described survey, and that the same have been compared with the original field notes and computations, and found to be correct.

Date: 6/12/2020

Signature: [Signature]

**PALMETTO CORP**  
 Land Surveying Division  
 3873 Hwy 701 N  
 Conway, SC 29525  
 Phone: (843) 716-8271



Critical Line Survey  
 of  
 TMS # 05-0029-083-02-00  
 Along Sampit River  
 Georgetown County, South Carolina  
 for  
 Georgetown County



I hereby state that I am a duly licensed Professional Surveyor in the State of South Carolina, and that the foregoing is a true and correct copy of the original field notes and computations of the above described survey, and that the same have been compared with the original field notes and computations, and found to be correct.

SEE SPECIAL CONDITIONS



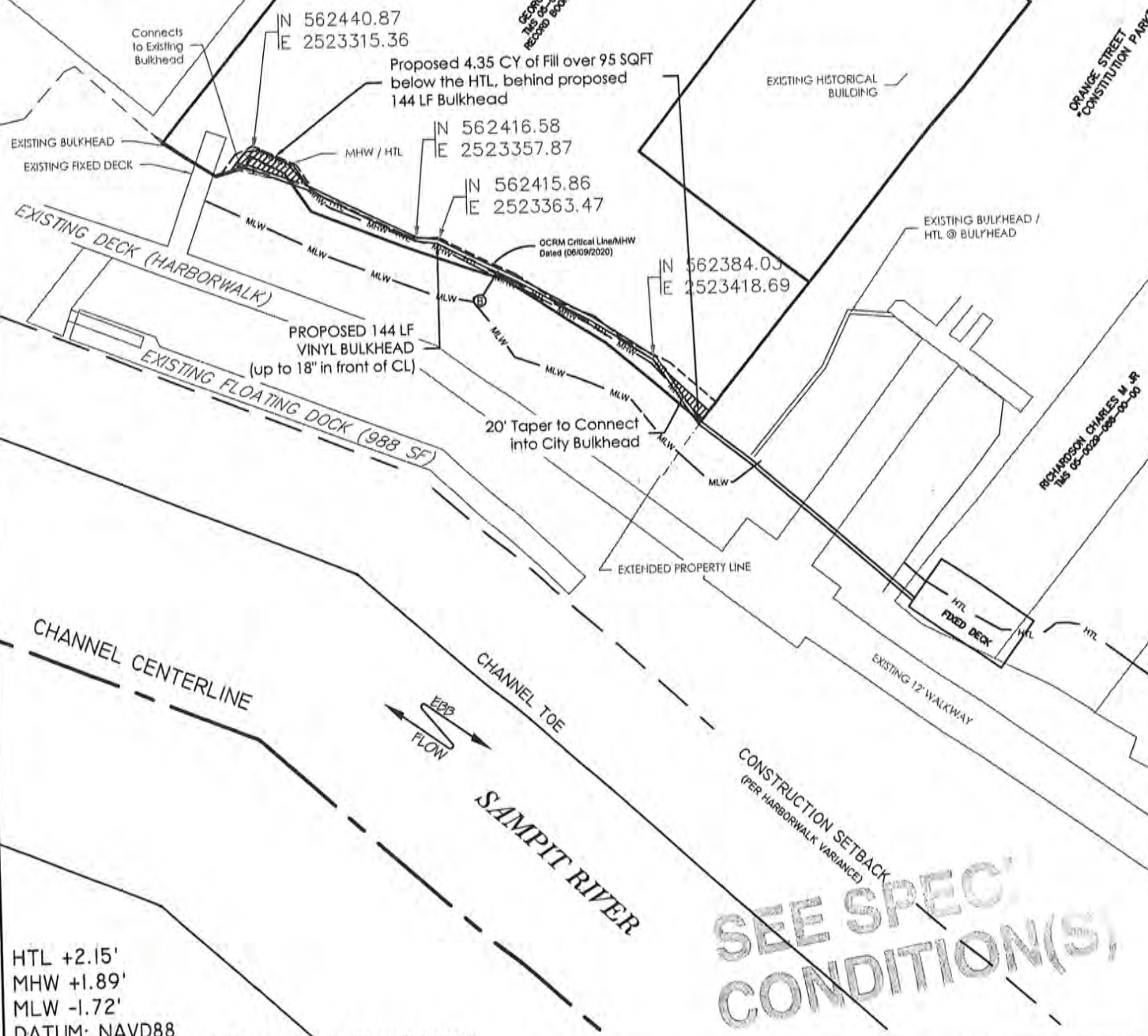


BLACK WATER TIC LLC  
 TMS 08-2022-083-01-00

GEORGETOWN COUNTY  
 TMS 08-2022-083-01-00  
 RECORD BOOK 244A1, PAGE 198

ORANGE STREET  
 CONSTITUTION PARK

RICHARDSON CHARLES W JR  
 TMS 08-2022-088-02-00



SEE SPEC  
 CONDITION(S)

**EARTHWORKS**  
 planning and design consultants  
 11655 HIGHWAY 707  
 MURRELLS INLET, SC 29576  
 phone - 843.651.7900  
 fax - 843.651.7903  
 earthworksgroup.com

**PROPOSED**  
 Coastal Carolina Building  
 Bulkhead

SCALE  
 1" = 40'

APPLICANT: City of Georgetown  
 108 Screven St  
 Georgetown, SC 29440  
 LOCATION: 901 Front Street  
 Georgetown, SC  
 LAT/LONG: 33.367232, -79.285047  
 USGS QUAD: Georgetown

DATE: 07/23/2020

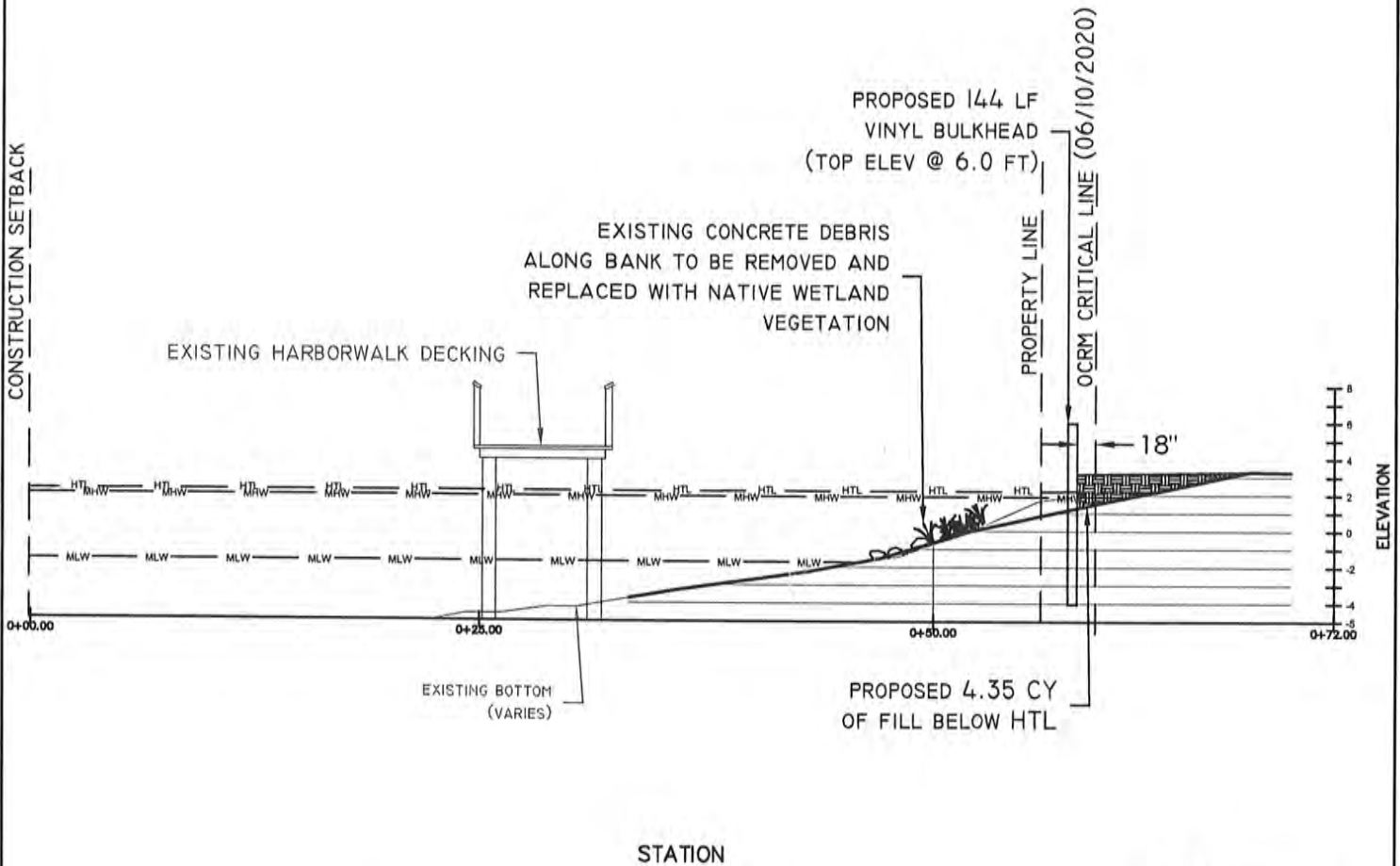
TEG PN: 191024

SHEET  
 2

1014



CONSTRUCTION SETBACK



SEE SPECIAL CONDITION(S)



HTL +2.15'  
 MHW +1.89'  
 MLW -1.72'  
 DATUM: NAVD88

FOR PERMITTING PURPOSES ONLY - NOT FOR CONSTRUCTION

**EARTHWORKS**  
 planning and design consultants  
 11655 HIGHWAY 707  
 MURRELLS INLET, SC 29576  
 phone - 843.651.7900  
 fax - 843.651.7903  
 earthworksgroup.com

**PROFILE VIEW B**  
 Coastal Carolina Building

SCALE  
 1" = 10'

APPLICANT: City of Georgetown  
 108 Screven St  
 Georgetown, SC 29440  
 LOCATION: 901 Front Street  
 Georgetown, SC  
 LAT/LONG: 33.367232, -79.285047  
 USGS QUAD: Georgetown

DATE: 07/23/2020

TEG PN: 191024

SHEET  
 4

74



# South Carolina Board of Health and Environmental Control

## Guide to Board Review

### Pursuant to S.C. Code Ann. § 44-1-60

The decision of the South Carolina Department of Health and Environmental Control (Department) becomes the final agency decision fifteen (15) calendar days after notice of the decision has been mailed to the applicant, permittee, licensee and affected persons who have requested in writing to be notified, unless a written request for final review accompanied by a filing fee in the amount of \$100 is filed with Department by the applicant, permittee, licensee or affected person.

Applicants, permittees, licensees, and affected parties are encouraged to engage in mediation or settlement discussions during the final review process.

If the Board declines in writing to schedule a final review conference, the Department's decision becomes the final agency decision and an applicant, permittee, licensee, or affected person may request a contested case hearing before the Administrative Law Court within thirty (30) calendar days after notice is mailed that the Board declined to hold a final review conference. In matters pertaining to decisions under the South Carolina Mining Act, appeals should be made to the South Carolina Mining Council.

#### I. Filing of Request for Final Review

1. A written Request for Final Review (RFR) and the required filing fee of one hundred dollars (\$100) must be received by Clerk of the Board within fifteen (15) calendar days after notice of the staff decision has been mailed to the applicant, permittee, licensee, or affected persons. If the 15<sup>th</sup> day occurs on a weekend or State holiday, the RFR must be received by the Clerk on the next working day. RFRs will not be accepted after 5:00 p.m.
2. RFRs shall be in writing and should include, at a minimum, the following information:
  - The grounds for amending, modifying, or rescinding the staff decision;
  - a statement of any significant issues or factors the Board should consider in deciding how to handle the matter;
  - the relief requested;
  - a copy of the decision for which review is requested; and
  - mailing address, email address, if applicable, and phone number(s) at which the requestor can be contacted.
3. RFRs should be filed in person or by mail at the following address:  
South Carolina Board of Health and Environmental Control  
Attention: Clerk of the Board  
2600 Bull Street  
Columbia, South Carolina 29201

Alternatively, RFR's may be filed with the Clerk by facsimile (803-898-3393) or by electronic mail (boardclerk@dhec.sc.gov).

4. The filing fee may be paid by cash, check or credit card and must be received by the 15<sup>th</sup> day.
5. If there is any perceived discrepancy in compliance with this RFR filing procedure, the Clerk should consult with the Chairman or, if the Chairman is unavailable, the Vice-Chairman. The Chairman or the Vice-Chairman will determine whether the RFR is timely and properly filed and direct the Clerk to (1) process the RFR for consideration by the Board or (2) return the RFR and filing fee to the requestor with a cover letter explaining why the RFR was not timely or properly filed. Processing an RFR for consideration by the Board shall not be interpreted as a waiver of any claim or defense by the agency in subsequent proceedings concerning the RFR.
6. If the RFR will be processed for Board consideration, the Clerk will send an Acknowledgement of RFR to the Requestor and the applicant, permittee, or licensee, if other than the Requestor. All personal and financial identifying information will be redacted from the RFR and accompanying documentation before the RFR is released to the Board, Department staff or the public.
7. If an RFR pertains to an emergency order, the Clerk will, upon receipt, immediately provide a copy of the RFR to all Board members. The Chairman, or in his or her absence, the Vice-Chairman shall based on the circumstances, decide whether to refer the RFR to the RFR Committee for expedited review or to decline in writing to schedule a Final Review Conference. If the Chairman or Vice-Chairman determines review by the RFR Committee is appropriate, the Clerk will forward a copy of the RFR to Department staff and Office of General Counsel. A Department response and RFR Committee review will be provided on an expedited schedule defined by the Chairman or Vice-Chairman.
8. The Clerk will email the RFR to staff and Office of General Counsel and request a Department Response within eight (8) working days. Upon receipt of the Department Response, the Clerk will forward the RFR and Department Response to all Board members for review, and all Board members will confirm receipt of the RFR to the Clerk by email. If a Board member does not confirm receipt of the RFR within a twenty-four (24) hour period, the Clerk will contact the Board member and confirm receipt. If a Board member believes the RFR should be considered by the RFR Committee, he or she will

respond to the Clerk's email within forty-eight (48) hours and will request further review. If no Board member requests further review of the RFR within the forty-eight (48) hour period, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, stating the Board will not hold a Final Review Conference. Contested case guidance will be included within the letter.

*NOTE: If the time periods described above end on a weekend or State holiday, the time is automatically extended to 5:00 p.m. on the next business day.*

9. If the RFR is to be considered by the RFR Committee, the Clerk will notify the Presiding Member of the RFR Committee and the Chairman that further review is requested by the Board. RFR Committee meetings are open to the public and will be public noticed at least 24 hours in advance.
10. Following RFR Committee or Board consideration of the RFR, if it is determined no Conference will be held, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, stating the Board will not hold a Conference. Contested case guidance will be included within the letter.

## II. Final Review Conference Scheduling

1. If a Conference will be held, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, informing the Requestor of the determination.
2. The Clerk will request Department staff provide the Administrative Record.
3. The Clerk will send Notice of Final Review Conference to the parties at least ten (10) days before the Conference. The Conference will be publically noticed and should:
  - include the place, date and time of the Conference;
  - state the presentation times allowed in the Conference;
  - state evidence may be presented at the Conference;
  - if the conference will be held by committee, include a copy of the Chairman's order appointing the committee; and
  - inform the Requestor of his or her right to request a transcript of the proceedings of the Conference prepared at Requestor's expense.
4. If a party requests a transcript of the proceedings of the Conference and agrees to pay all related costs in writing, including costs for the transcript, the Clerk will schedule a court reporter for the Conference.

## III. Final Review Conference and Decision

1. The order of presentation in the Conference will, subject to the presiding officer's discretion, be as follows:
  - Department staff will provide an overview of the staff decision and the applicable law to include [10 minutes]:
    - Type of decision (permit, enforcement, etc.) and description of the program.
    - Parties
    - Description of facility/site
    - Applicable statutes and regulations
    - Decision and materials relied upon in the administrative record to support the staff decision.
  - Requestor(s) will state the reasons for protesting the staff decision and may provide evidence to support amending, modifying, or rescinding the staff decision. [15 minutes] *NOTE: The burden of proof is on the Requestor(s)*
  - Rebuttal by Department staff [15 minutes]
  - Rebuttal by Requestor(s) [10 minutes]

Note: Times noted in brackets are for information only and are superseded by times stated in the Notice of Final Review Conference or by the presiding officer.
2. Parties may present evidence during the conference; however, the rules of evidence do not apply.
3. At any time during the conference, the officers conducting the Conference may request additional information and may question the Requestor, the staff, and anyone else providing information at the Conference.
4. The presiding officer, in his or her sole discretion, may allow additional time for presentations and may impose time limits on the Conference.
5. All Conferences are open to the public.
6. The officers may deliberate in closed session.
7. The officers may announce the decision at the conclusion of the Conference or it may be reserved for consideration.
8. The Clerk will mail the written final agency decision (FAD) to parties within 30 days after the Conference. The written decision must explain the basis for the decision and inform the parties of their right to request a contested case hearing before the Administrative Law Court or in matters pertaining to decisions under the South Carolina Mining Act, to request a hearing before the South Carolina Mining Council. The FAD will be sent by certified mail, return receipt requested.
9. Communications may also be sent by electronic mail, in addition to the forms stated herein, when electronic mail addresses are provided to the Clerk.

**The above information is provided as a courtesy; parties are responsible for complying with all applicable legal requirements.**



SC DHEC - OCRM  
CONSTITUTION PARK  
BULKHEAD PERMIT



MAYOR  
BRENDON M. BARBER, SR.

CITY ADMINISTRATOR  
SANDRA E. YUDICE, Ph.D.

CITY CLERK  
STEPHANIE BUCCIONE



COUNCIL MEMBERS  
HOBSON H. MILTON  
RUDOLPH A. BRADLEY  
TUPELO HUMES  
AL JOSEPH  
CAROL JAYROE  
CLARENCE C. SMALLS

Executive Offices  
(843) 545-4001

COPY

April 9, 2020


Kendra G. Elliott  
Project Manager  
Critical Area Permitting Section  
SCDHEC – OCRM  
927 Shine Ave.  
Myrtle Beach, SC 29577

RE: OCRM 02004

Dear Ms. Elliott:

Attached is the fully executed original of the permit for the erosion control structure in the City of Georgetown adjacent to the Sampit River at Constitution Park, Front Street (TMS #0500290830200).

Sincerely,



Sandra E. Yudice, Ph.D.  
City Administrator

Cc: Orlando Arteaga, City Engineer  
Debra Bivens, Finance Director





RECEIVED

APR 7 - 2020

CITY HALL  
ADMINISTRATION

ENGINEERING

APR 08 2020

RECEIVED

March 30, 2020

City of Georgetown  
PO Box 939  
Georgetown, SC 29442

Re: OCRM02004

Dear City of Georgetown:

The Office of Ocean and Coastal Resource Management (the Department) has reviewed your application to fill in a wetland and construct an erosion control structure on Front Street, Georgetown, Georgetown County, South Carolina and has issued a permit for this work. You should carefully read the description of the authorized project and special conditions that have been placed on the permit, as these conditions may modify the permitted activity. In addition, there are a series of general conditions that should be reviewed. The original and one photocopy of the permit, as issued, are enclosed. After carefully reading the permit, if you wish to accept the permit as issued, sign and date in the signature block entitled "PERMITTEE" on the original version of the permit **and return it to this Department. Keep the photocopy for your records.**

**PLEASE READ CAREFULLY:** You are required to sign and return the original version of your permit to this Department. If this permit is not signed and returned within thirty (30) days of issuance, OR appealed within 15 days as described on the enclosed "Guide to Board Review", the Department reserves the right to cancel this permit. Please carefully review the enclosed "Guide to Board Review" for information and deadlines for appealing this permit.

**We have also enclosed a "request for a construction placard" card. You must send in this card before the time you wish to start construction. At that time a construction placard will be sent to you to post at the construction site.**

**PLEASE NOTE:** You are not authorized to commence work under the permit until we have received the original version of the entire permit signed and accepted by you, and a construction placard has been issued and posted at the construction site. The receipt of this permit does not relieve you of the responsibility of acquiring any other federal or local permits that may be required. Please return the signed permit to the following address:

Office of Ocean and Coastal Resource Management  
927 Shine Ave  
Myrtle Beach, SC 29577

Sincerely,

  
Kendra G Elliott  
Project Manager  
Critical Area Permitting Section

Enclosure



SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL  
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT

CRITICAL AREA PERMIT & WATER QUALITY CERTIFICATION

Permittee(s): City of Georgetown  
Permit Number(s): OCRM02004  
Date of Issuance: March 30, 2020  
Expiration Date: March 30, 2025  
Location: On and adjacent to Sampit River at Constitution Park, Front Street, Georgetown  
Georgetown County, South Carolina (TMS#: 0500290830200)

SEE SPECIAL  
CONDITION(S)

This permit/certification is issued under the provisions of 25A S.C. Code Ann. Regs. 61-101 (Supp. 2005), *et seq.*, and 23A S.C. Code Ann. Regs. 30-1 through 30-18 (Supp. 2005). Additionally, as required by R.61-101, Department staff have reviewed plans for this project and determined there is a reasonable assurance the project will be conducted in a manner consistent with Certification requirements of Section 401 of the Clean Water Act. We also certify that this project, subject to the indicated conditions, is consistent with applicable provisions of Section 303 of the Clean Water Act, as amended, that there are no applicable effluent limitations under Sections 301(b) and 302, and that there are no applicable standards under Sections 306 and 307.

**This permit contains required certification pursuant to Section 401 of the Clean Water Act. PLEASE CAREFULLY READ THE ENCLOSED "GUIDE TO BOARD REVIEW."**

**Please carefully read the project description and any special conditions that may appear on this permit/certification as they will affect the work that is allowed and may modify the work from that shown on the submitted plans. All special conditions attached to the permit will take precedent over submitted plans.** If there are no special conditions, then the work is authorized as described in the project description and as modified by general conditions. The general conditions are also a part of this permit/certification and should be read in their entirety. The S. C. Contractor's Licensing Act of 1999, enacted as Section 40-11-5 through 430, requires that all construction with a total cost of \$5,000 or more be performed by a licensed contractor with a valid contractor's license for marine class construction, except for construction performed by a private landowner for strictly private purposes. Your signature on and acceptance of this permit denotes your understanding of the stated law regarding use of licensed contractors. **All listed special and general conditions will remain in effect for the life of the project if work commences during the life of the permit. This applies to permittee, future property owners, or permit assignees.**

**DESCRIPTION OF THE PROJECT, AS AUTHORIZED**

The work, as authorized, consists of constructing an erosion control structure and placing fill in the critical area. Specifically, the permittee is authorized to construct a 70 LF bulkhead to seal off the boat basin and backfill the basin with approximately 378 CY of fill. The work, as described, is for erosion control.

### **CRITICAL AREA PERMIT SPECIAL CONDITIONS**

1. The permittee must implement best management practices during construction to minimize erosion and migration of sediments off site. These practices may include use of mulches, hay bales, silt fences, or other devices capable of preventing erosion and migration of sediments. All disturbed land surfaces must be stabilized upon project completion.
2. An as-built survey of the dock must be submitted to the Department within 90 days from completion of construction. The survey must be performed by a registered land surveyor, must show all components of the dock, and must list the starting and ending coordinates of the dock walkway in the SC State Plane Coordinate System, which can be obtained by survey-grade Global Positioning System equipment.
3. In the event that any historic or cultural resources and/or archaeological materials are found during the course of work, the applicant must notify the State Historic Preservation Office and the South Carolina Institute of Archaeology and Anthropology. Historic or cultural resources consist of those sites listed in the National Register of Historic Places and those sites that are eligible for the National Register. Archaeological materials consist of any items, fifty years old or older, which were made or used by man. These items include, but are not limited to, stone projectile points (arrowheads), ceramic sherds, bricks, worked wood, bone and stone, metal and glass objects, and human skeletal materials.

### **WATER QUALITY SPECIAL CONDITIONS**

1. The applicant must implement best management practices that will minimize erosion and migration of sediments on and off the project site during and after construction. These practices should include the use of appropriate grading and sloping techniques, mulches, silt fences, or other devices capable of preventing erosion, migration of sediments, and bank failure. All disturbed land surfaces and sloped areas must be stabilized.
2. All necessary measures must be taken to prevent oil, tar, trash, debris, and other pollutants from entering the adjacent waters or wetlands.
3. Only clean earthen material free of all potential sources of pollution must be used as backfill.
4. The backfilled area must be stabilized with a vegetative cover after construction to minimize erosion.
5. A final approved mitigation plan must be submitted to DHEC prior to construction.

**PERMITTEE'S ATTENTION IS DIRECTED TO GENERAL CONDITIONS NUMBERS FOUR (4) AND (5), BY ACCEPTANCE OF THIS PERMIT, PERMITTEE IS PLACED ON NOTICE THAT THE STATE OF SOUTH CAROLINA, BY ISSUING THIS PERMIT, DOES NOT WAIVE ITS RIGHTS TO REQUIRE PAYMENT OF A REASONABLE FEE FOR USE OF STATE LANDS AT A FUTURE DATE IF SO DIRECTED BY STATUTE.**

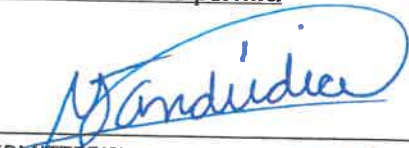
**SEE SPECIAL  
CONDITION(S)**



THE PERMITTEE, BY ACCEPTANCE OF THIS PERMIT, AGREES TO ABIDE BY THE TERMS AND CONDITIONS CONTAINED HEREIN AND TO PERFORM THE WORK IN STRICT ACCORDANCE WITH THE PLANS AND SPECIFICATIONS ATTACHED HERETO AND MADE A PART HEREOF. ANY DEVIATION FROM THESE CONDITIONS, TERMS, PLANS AND SPECIFICATIONS SHALL BE GROUNDS FOR REVOCATION, SUSPENSION OR MODIFICATION OF THIS PERMIT AND THE INSTITUTION OF SUCH LEGAL PROCEEDINGS AS THE DEPARTMENT MAY CONSIDER APPROPRIATE.

Permit Number:        **OCRM02004**

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

  
\_\_\_\_\_  
PERMITTEE(S)  
City of Georgetown

**Sandra E. Yúdice, Ph.D.**  
City Administrator  
City of Georgetown, SC

4-9-2020  
DATE

This permit becomes effective when the State official, designated to act for the Office of Ocean and Coastal Resource Management, has signed below.

  
\_\_\_\_\_  
CRITICAL AREA PERMITTING PROJECT MANAGER  
**Kendra G Elliott**  
Or Other Authorized State Official

3/30/2020  
DATE

**SEE SPECIAL  
CONDITION(S)**



**GENERAL CONDITIONS:**

This construction and use permit is expressly contingent upon the following conditions which are binding on the permittee:

1. The permittee, in accepting this permit, covenants and agrees to comply with and abide by the provisions and conditions herein and assumes all responsibility and liability and agrees to save OCRM and the State of South Carolina, its employees or representatives, harmless from all claims of damage arising out of operations conducted pursuant to this permit.
2. If the activity authorized herein is not constructed or completed within five years of the date of issuance, this permit shall automatically expire. A request, in writing, for an extension of time shall be made not less than thirty days prior to the expiration date.
3. All authorized work shall be conducted in a manner that minimizes any adverse impact on fish, wildlife and water quality.
4. This permit does not relieve the permittee from the requirements of obtaining a permit from the U. S. Army Corps of Engineers or any other applicable federal agency, nor from the necessity of complying with all applicable local laws, ordinances, and zoning regulations. This permit is granted subject to the rights of the State of South Carolina in the navigable waters and shall be subject, further, to all rights held by the State of South Carolina under the public trust doctrine as well as any other right the State may have in the waters and submerged lands of the coast.
5. This permit does not convey, expressly or impliedly, any property rights in real estate or material nor any exclusive privileges; nor does it authorize the permittee to alienate, diminish, infringe upon or otherwise restrict the property rights of any other person or the public; nor shall this permit be interpreted as appropriating public properties for private use.
6. The permittee shall permit OCRM or its authorized agents or representatives to make periodic inspections at any time deemed necessary in order to ensure that the activity being performed is in accordance with the terms and conditions of this permit.
7. Any abandonment of the permitted activity will require restoration of the area to a satisfactory condition as determined by OCRM.
8. This permit may not be transferred to a third party without prior written notice to OCRM, either by the transferee's written agreement to comply with all terms and conditions of this permit or by the transferee subscribing to this permit and thereby agreeing to comply.
9. If the display of lights and signals on any structure or work authorized herein is not otherwise provided for by law, such lights and special signals as may be prescribed by the United States Coast Guard shall be installed and maintained by and at the expense of the permittee.
10. The permit construction placard or a copy of the placard shall be posted in a conspicuous place at the project site during the entire period of work.
11. The structure or work authorized herein shall be in accordance with the permit, as issued, and shall be maintained in good condition. Failure to build in accordance with the permit, as issued, or failure to maintain the structure in good condition, shall result in the revocation of this permit.
12. The authorization for activities or structures herein constitutes a revocable license. OCRM may require the permittee to modify activities or remove structures authorized herein if it is determined by OCRM that such activity or structures violates the public's health, safety, or welfare, or if any activity is inconsistent with the public trust doctrine. Modification or removal under this condition shall be ordered only after reasonable notice stating the reasons therefore and provision to the permittee of the opportunity to respond in writing. When the Permittee is notified that OCRM intends to revoke the permit, Permittee agrees to immediately stop work pending resolution of the revocation.
13. OCRM shall have the right to revoke, suspend, or modify this permit in the event it is determined the permitted structure (1) significantly impacts the public health, safety and welfare, and/or is violation of Section 48-39-150, (2)

SEE SPECIAL  
CONDITION(S)

adversely impacts public rights, (3) that the information and data which the permittee or any other agencies have provided in connection with the permit application is either false, incomplete or inaccurate, or (4) that the activity is in violation of the terms and/or conditions, including any special conditions of the permit. That the permittee, upon receipt of OCRM's written intent to revoke, suspend, or modify the permit has the right to a hearing. Prior to revocation, suspension, or modification of this permit, OCRM shall provide written notification of intent to revoke to the permittee, and permittee can respond with a written explanation to OCRM. (South Carolina Code Section 1-23-370 shall govern the procedure for revocation, suspension or modification herein described).

14. Any modification, suspension or revocation of this permit shall not be the basis of any claim for damages against OCRM or the State of South Carolina or any employee, agent, or representative of OCRM or the State of South Carolina.
15. All activities authorized herein shall, if they involve a discharge or deposit into navigable waters or ocean waters, be at all times consistent with all applicable water quality standards, effluent limitations and standards of performance, prohibitions, and pretreatment standards established pursuant to applicable federal, state and local laws.
16. Extreme care shall be exercised to prevent any adverse or undesirable effects from this work on the property of others. This permit authorizes no invasion of adjacent private property, and OCRM assumes no responsibility or liability from any claims of damage arising out of any operations conducted by the permittee pursuant to this permit.

SEE SPECIAL  
CONDITION(S)

SEE SPECIAL  
CONDITION(S)

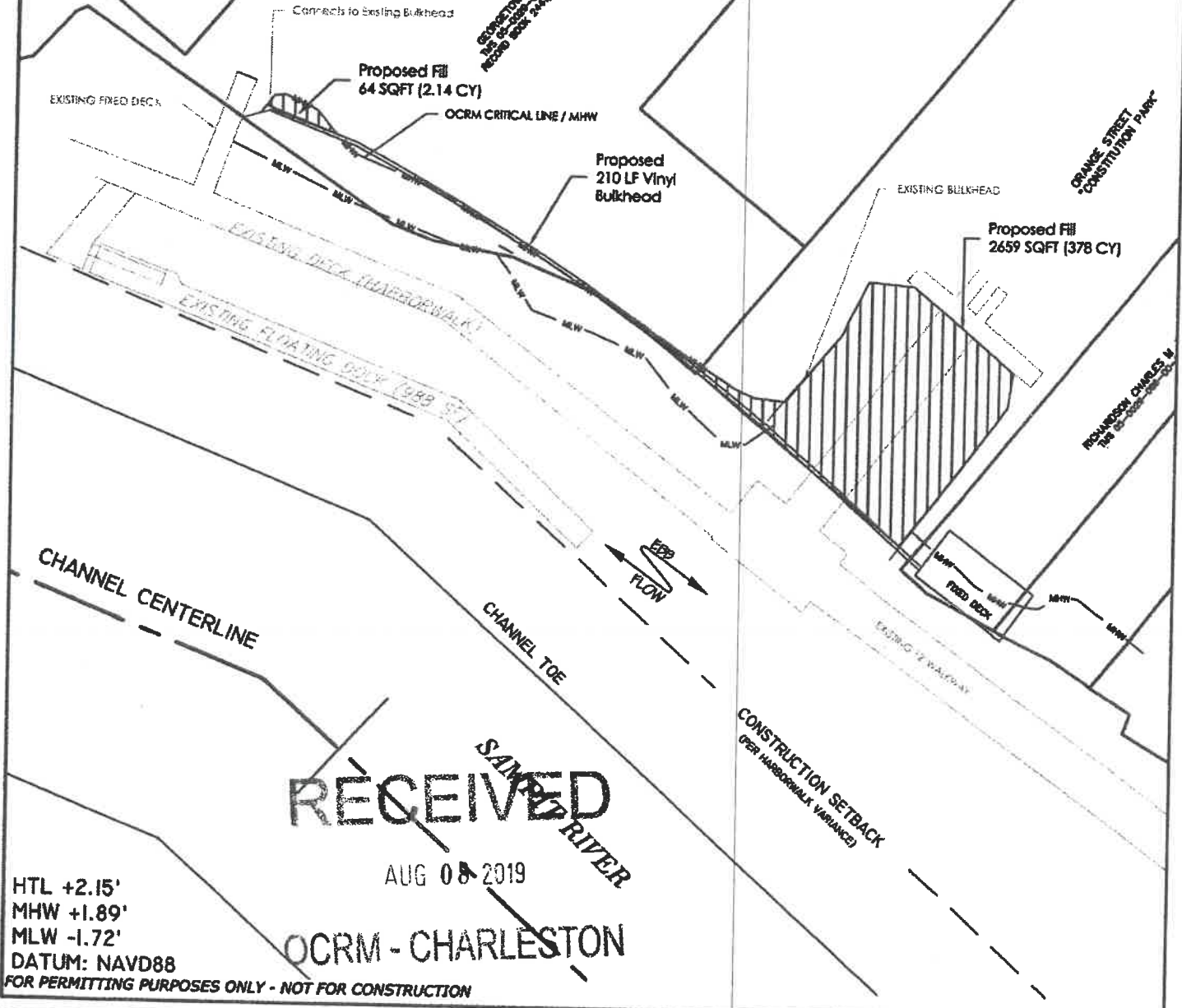


BLVD WATER P.C. LLC  
252 425-2888 ext. 201-20

GEORGETOWN COUNTY  
135 65-2222 ext. 201-20  
REC'D BOOK 2011 PAGE 78

ORANGE STREET  
CONSTRUCTION PERMIT

REYNOLDS CHARLES W  
135 65-2222 ext. 201-20



RECEIVED  
AUG 08 2019  
SANDHURST RIVER

OCRM - CHARLESTON

HTL +2.15'  
MHW +1.89'  
MLW -1.72'  
DATUM: NAVD88

FOR PERMITTING PURPOSES ONLY - NOT FOR CONSTRUCTION

**EARTHWORKS**  
planning and design consultants  
11655 HIGHWAY 707  
MURRELLS INLET, SC 29576  
phone - 843.651.7900  
fax - 843.651.7903  
earthworksgroup.com

**PROPOSED SITE**  
Coastal Carolina Building &  
Constitution Park Bulkhead

SCALE  
1" = 40'

APPLICANT: City of Georgetown & Georgetown County

LOCATION: 901 Front Street  
Georgetown, SC  
LAT/LONG: 33.367232, -79.285047  
USGS QUAD: Georgetown

DATE: 07/10/2019

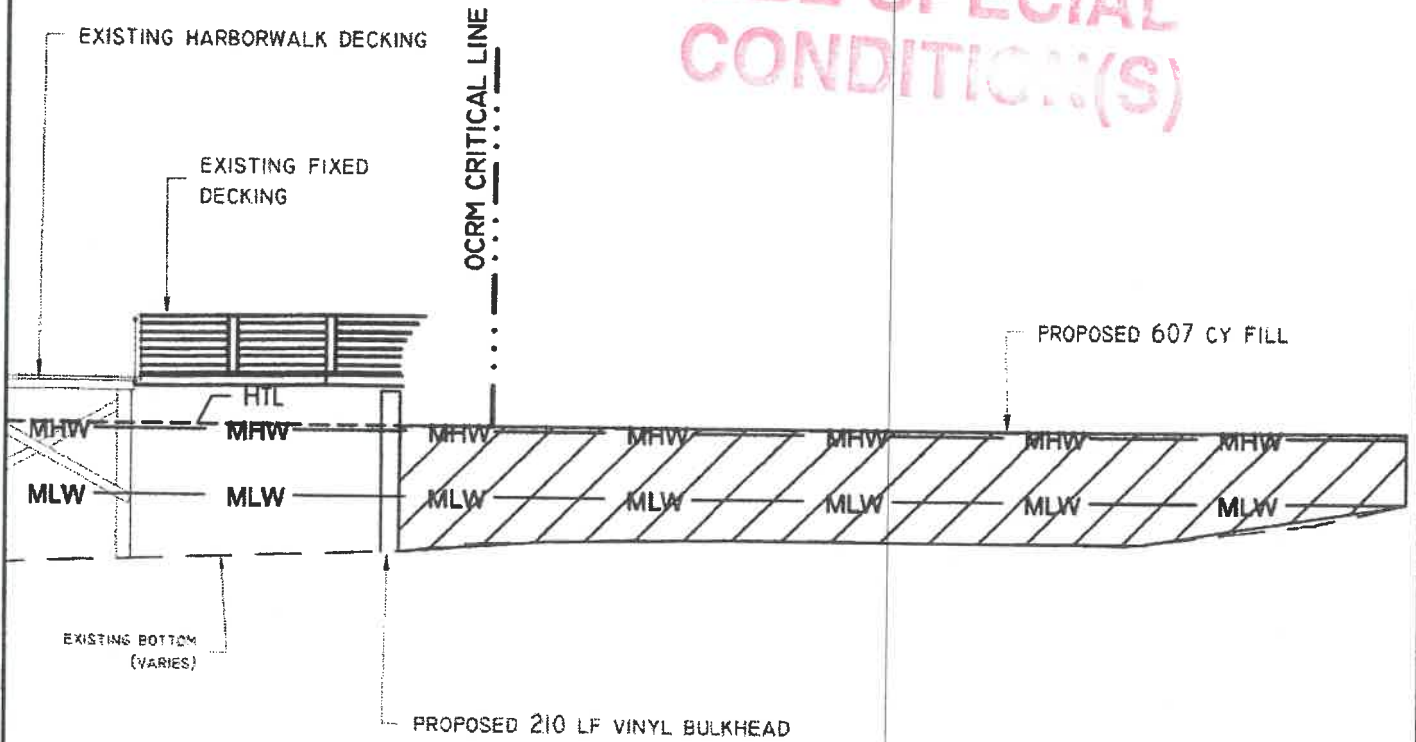
TEG PN: 191024

SHEET  
2

6/8



SEE SPECIAL  
CONDITION(S)



RECEIVED

AUG 08 2019

OCRM - CHARLESTON



HTL +2.15'  
MHW +1.89'  
MLW -1.72'  
DATUM: NAVD88

FOR PERMITTING PURPOSES ONLY - NOT FOR CONSTRUCTION

**EARTHWORKS**  
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 11655 HIGHWAY 707  
 MURRELLS INLET, SC 29576  
 phone - 843.651.7900  
 fax - 843.651.7903  
 earthworksgroup.com

**PROFILE VIEW**  
 Coastal Carolina Building &  
 Constitution Park Bulkhead

SCALE  
1" = 10'

APPLICANT: *City of Georgetown & Georgetown County*  
 LOCATION: 901 Front Street  
 Georgetown, SC  
 LAT/LONG: 33.367232, -79.285047  
 USGS QUAD: Georgetown

DATE: 07/09/2019  
 TEG PN: 191024

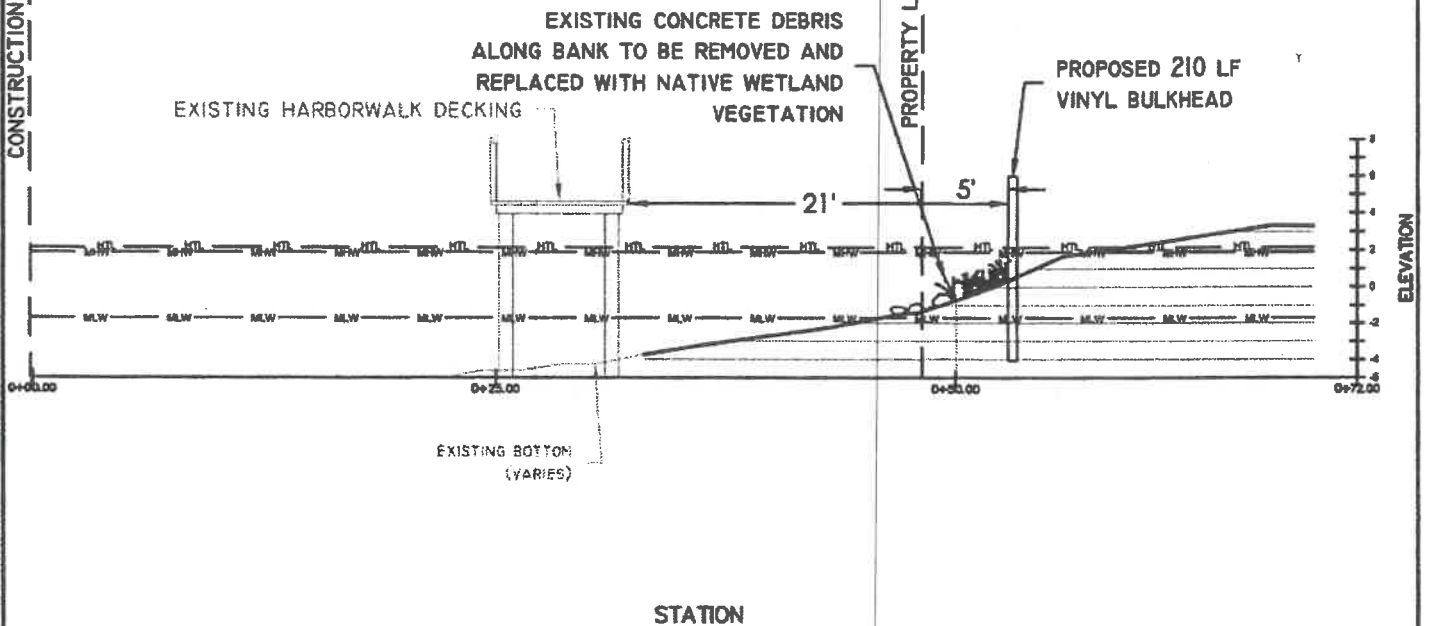
SHEET  
3

7/8





CONSTRUCTION SETBACK



SEE SPECIAL CONDITION(S)



HTL +2.15'  
 MHW +1.89'  
 MLW -1.72'  
 DATUM: NAVD88

FOR PERMITTING PURPOSES ONLY - NOT FOR CONSTRUCTION

**EARTHWORKS**  
 planning and design consultants  
 11655 HIGHWAY 707  
 MURRELLS INLET, SC 29576  
 phone - 843.651.7900  
 fax - 843.651.7903  
 earthworksgroup.com

**PROFILE VIEW B**  
 Coastal Carolina Building &  
 Constitution Park Bulkhead

SCALE  
1" = 10'

APPLICANT: City of Georgetown & Georgetown County

LOCATION: 901 Front Street  
 Georgetown, SC

LAT/LONG: 33.367232, -79.285047  
 USGS QUAD: Georgetown

DATE: 07/09/2019

TEG PN: 191024

SHEET  
4

8/8



# South Carolina Board of Health and Environmental Control

## Guide to Board Review

### Pursuant to S.C. Code Ann. § 44-1-60

The decision of the South Carolina Department of Health and Environmental Control (Department) becomes the final agency decision fifteen (15) calendar days after notice of the decision has been mailed to the applicant, permittee, licensee and affected persons who have requested in writing to be notified, unless a written request for final review accompanied by a filing fee in the amount of \$100 is filed with Department by the applicant, permittee, licensee or affected person.

Applicants, permittees, licensees, and affected parties are encouraged to engage in mediation or settlement discussions during the final review process.

If the Board declines in writing to schedule a final review conference, the Department's decision becomes the final agency decision and an applicant, permittee, licensee, or affected person may request a contested case hearing before the Administrative Law Court within thirty (30) calendar days after notice is mailed that the Board declined to hold a final review conference. In matters pertaining to decisions under the South Carolina Mining Act, appeals should be made to the South Carolina Mining Council.

#### I. Filing of Request for Final Review

1. A written Request for Final Review (RFR) and the required filing fee of one hundred dollars (\$100) must be received by Clerk of the Board within fifteen (15) calendar days after notice of the staff decision has been mailed to the applicant, permittee, licensee, or affected persons. If the 15<sup>th</sup> day occurs on a weekend or State holiday, the RFR must be received by the Clerk on the next working day. RFRs will not be accepted after 5:00 p.m.
2. RFRs shall be in writing and should include, at a minimum, the following information:
  - The grounds for amending, modifying, or rescinding the staff decision;
  - a statement of any significant issues or factors the Board should consider in deciding how to handle the matter;
  - the relief requested;
  - a copy of the decision for which review is requested; and
  - mailing address, email address, if applicable, and phone number(s) at which the requestor can be contacted.
3. RFRs should be filed in person or by mail at the following address:  
South Carolina Board of Health and Environmental Control  
Attention: Clerk of the Board  
2600 Bull Street  
Columbia, South Carolina 29201  
Alternatively, RFR's may be filed with the Clerk by facsimile (803-898-3393) or by electronic mail (boardclerk@dhec.sc.gov).
4. The filing fee may be paid by cash, check or credit card and must be received by the 15<sup>th</sup> day.
5. If there is any perceived discrepancy in compliance with this RFR filing procedure, the Clerk should consult with the Chairman or, if the Chairman is unavailable, the Vice-Chairman. The Chairman or the Vice-Chairman will determine whether the RFR is timely and properly filed and direct the Clerk to (1) process the RFR for consideration by the Board or (2) return the RFR and filing fee to the requestor with a cover letter explaining why the RFR was not timely or properly filed. Processing an RFR for consideration by the Board shall not be interpreted as a waiver of any claim or defense by the agency in subsequent proceedings concerning the RFR.
6. If the RFR will be processed for Board consideration, the Clerk will send an Acknowledgement of RFR to the Requestor and the applicant, permittee, or licensee, if other than the Requestor. All personal and financial identifying information will be redacted from the RFR and accompanying documentation before the RFR is released to the Board, Department staff or the public.
7. If an RFR pertains to an emergency order, the Clerk will, upon receipt, immediately provide a copy of the RFR to all Board members. The Chairman, or in his or her absence, the Vice-Chairman shall based on the circumstances, decide whether to refer the RFR to the RFR Committee for expedited review or to decline in writing to schedule a Final Review Conference. If the Chairman or Vice-Chairman determines review by the RFR Committee is appropriate, the Clerk will forward a copy of the RFR to Department staff and Office of General Counsel. A Department response and RFR Committee review will be provided on an expedited schedule defined by the Chairman or Vice-Chairman.
8. The Clerk will email the RFR to staff and Office of General Counsel and request a Department Response within eight (8) working days. Upon receipt of the Department Response, the Clerk will forward the RFR and Department Response to all Board members for review, and all Board members will confirm receipt of the RFR to the Clerk by email. If a Board member does not confirm receipt of the RFR within a twenty-four (24) hour period, the Clerk will contact the Board member and confirm receipt. If a Board member believes the RFR should be considered by the RFR Committee, he or she will

respond to the Clerk's email within forty-eight (48) hours and will request further review. If no Board member requests further review of the RFR within the forty-eight (48) hour period, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, stating the Board will not hold a Final Review Conference. Contested case guidance will be included within the letter.

*NOTE: If the time periods described above end on a weekend or State holiday, the time is automatically extended to 5:00 p.m. on the next business day.*

9. If the RFR is to be considered by the RFR Committee, the Clerk will notify the Presiding Member of the RFR Committee and the Chairman that further review is requested by the Board. RFR Committee meetings are open to the public and will be public noticed at least 24 hours in advance.
10. Following RFR Committee or Board consideration of the RFR, if it is determined no Conference will be held, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, stating the Board will not hold a Conference. Contested case guidance will be included within the letter.

## **II. Final Review Conference Scheduling**

1. If a Conference will be held, the Clerk will send a letter by certified mail to the Requestor, with copy by regular mail to the applicant, permittee, or licensee, if not the Requestor, informing the Requestor of the determination.
2. The Clerk will request Department staff provide the Administrative Record.
3. The Clerk will send Notice of Final Review Conference to the parties at least ten (10) days before the Conference. The Conference will be publically noticed and should:
  - include the place, date and time of the Conference;
  - state the presentation times allowed in the Conference;
  - state evidence may be presented at the Conference;
  - if the conference will be held by committee, include a copy of the Chairman's order appointing the committee; and
  - inform the Requestor of his or her right to request a transcript of the proceedings of the Conference prepared at Requestor's expense.
4. If a party requests a transcript of the proceedings of the Conference and agrees to pay all related costs in writing, including costs for the transcript, the Clerk will schedule a court reporter for the Conference.

## **III. Final Review Conference and Decision**

1. The order of presentation in the Conference will, subject to the presiding officer's discretion, be as follows:
  - Department staff will provide an overview of the staff decision and the applicable law to include [10 minutes]:
    - Type of decision (permit, enforcement, etc.) and description of the program.
    - Parties
    - Description of facility/site
    - Applicable statutes and regulations
    - Decision and materials relied upon in the administrative record to support the staff decision.
  - Requestor(s) will state the reasons for protesting the staff decision and may provide evidence to support amending, modifying, or rescinding the staff decision. [15 minutes] *NOTE: The burden of proof is on the Requestor(s)*
  - Rebuttal by Department staff [15 minutes]
  - Rebuttal by Requestor(s) [10 minutes]

Note: Times noted in brackets are for information only and are superseded by times stated in the Notice of Final Review Conference or by the presiding officer.
2. Parties may present evidence during the conference; however, the rules of evidence do not apply.
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**The above information is provided as a courtesy; parties are responsible for complying with all applicable legal requirements.**

# SC DHEC - OCRM Coastal Zone Consistency Determination

(Forthcoming)



SC DHEC STORMWATER PERMIT

(Forthcoming)





SC DEPARTMENT OF TRANSPORTATION (SCDOT)  
ENCROACHMENT PERMIT

(Forthcoming)

