

***Bid Package
For
Oakwood Drive Drainage Project***

CITY OF SPARTANBURG

JOB NO. SW 1905

October 31, 2019

Proposal No.1920-11-19-01

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City of Spartanburg
Procurement and Property Division
Post Office Drawer 1749, SC 29304-1749
Phone (864) 596-2049 - Fax (864) 596-2365

Legal Notice

***Request for Proposal for
Oakwood Drive Drainage Project***

October 30, 2019

NOTICE IS HEREBY GIVEN –that The City of Spartanburg will receive sealed bids from Contractors to provide services for the Oakwood Drive Drainage Project.

Bids are invited upon the several items and quantities of work as follows:

Contractor will be responsible for the installation of approximately 833 feet of 18” RCP adjacent to Oakwood Avenue, Garrett Street and Washington Place. All work will need to be done to SCDOT specifications. Contractor is responsible for all traffic control, utility locates and sediment/erosion control during construction. Contractor will also be responsible for stockpiling and removal of any debris. Contractor will be responsible for any applicable permits.

Proposal No. 1920-11-19-01

City of Spartanburg, hereby, notifies all proposers that it will affirmatively ensure that all disadvantaged and women’s business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of gender, race, color, or national origin in consideration for an award. Each proposer shall attest that they engaged in good faith efforts in an endeavor to achieve the City’s M/WBE goal of 15%.

The City of Spartanburg reserves the right to reject any or all proposals or to waive any informality in the qualifications process. Proposals may be held by the City of Spartanburg for a period not to exceed sixty (60) days from the date of the opening of Proposals for the purpose of reviewing the Proposals and investigating the qualifications of prospective parties, prior to awarding of the Contract. The vendor that is awarded the proposal will be required to obtain a City of Spartanburg Business License and all applicable permits and fees. Contractor will be responsible to prove existing experience with similar projects and have verifiable references of at least 3 other similar projects.

Each bid must be accompanied by a Bid Bond payable to the Owner for five (5) percent of the total amount of the Bid.

A Mandatory Pre-bid will take place on November 12 at 10 a.m. at # 153 Oakwood Avenue.

Drawings and Specifications may be purchased from Imaging Technologies Construction Documents, including Drawings and Technical Specifications are on file and can be purchased at ARC , located a 7092 Howard Street #K, Spartanburg, SC (864) 585-8388

Complete proposal package will be available at www.cityofspartanburg.org by following the links for Invitations for bids.

The Bidder to whom the contract is awarded will be required to furnish a corporate surety bond in a sum equal to one hundred percent (100%) of the amount of the proposals or bids.

Sealed Proposals shall be submitted to Carl Wright, Procurement and Property Manager, on or before Tuesday November 19, 2019 no later than 3 PM, City Hall, 145 W. Broad Street, at which time they will be publicly opened and read aloud in the Training Room, same location.

Proposals can be hand delivered or mailed to the following address:

City of Spartanburg
P.O. Box 5107
145 W. Broad Street
Spartanburg, SC. 29304

Attn: Procurement and Property Division

For further information and complete Proposal Package, please contact the Procurement and Property office at (864) 596-2049. Complete proposal package also available at www.cityofspartanburg.org by following the links for Invitations for bids. The following Proposal Number Must be placed on the outer envelope in order for the bid to be Stamped in as accepted on time: **Proposal No: 1920-11-19-01**

PROPOSAL FOR
Oakwood Drive Drainage Project

CITY OF SPARTANBURG

Job No. 1905

BID

FROM:

BIDDER _____ Date _____

Address _____ Telephone _____

Bidder's License No. _____

Contractor's License No. _____

TO: CITY OF SPARTANBURG (OWNER)

145 West Broad Street
Post Office Drawer 5107
Spartanburg, S. C. 29304

The undersigned, as bidder, hereby declares that the only person, or persons, interested in this bid as principal(s) is, or are, named herein, and that no other person has any interest in the bid or the contract to be entered into; that this bid is made without connection with any person, company or parties making a bid; and that it is in all respects fair and in good faith without collusion or fraud.

The bidder further declares that he has examined the site of the work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done; that he has examined the contract documents relative thereto; and that he has satisfied himself as to the work to be performed.

The bidder further proposes and agrees, if this bid is accepted, to contract with the Owner in the attached form of agreement, to furnish all material, equipment, tools, apparatus means of transportation, and labor necessary to complete the project in full and complete accordance with the contract documents, to the full and entire satisfaction of the Owner, at the prices and amounts listed below.

The bidder further agrees to commence work on the date stipulated in the notice to proceed and to fully complete the project within the number of consecutive calendar days thereafter as listed below. The bidder also agrees to pay as liquidated damages, the sum as listed below for each consecutive calendar day thereafter the project remains incomplete.

Completion Time 30 days
Liquidated Damages: \$300.00 per day

The undersigned Bidder agrees that if this Proposal shall be accepted, the undersigned will, within ten (10) days after notifications of such acceptance, enter into the contract for their performance of all work proposed under this improvement within the number of calendar days as stated herein, and, as a guaranty of the faithful performance thereof, to furnish at the time of executing the contract a performance bond in an amount not less than one hundred percent (100%) of the total amount bid, and with sureties subject to the approval of the Owner. Upon failure to execute the contract and bond as aforesaid, it is agreed that the undersigned shall forfeit check accompanying this proposal to the Owner as liquidated damages caused by such failure.

The work consists of the approximate quantities shown herein 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 will correspond with the estimated quantities.

In case of error in extension, the unit price shall govern rather than the amount. For lump sum items, the individual amounts shall govern the total of the bid in case of discrepancy.

The Owner may delete from the contract any or all of the alternates listed in the bid form.

The prices and amounts listed below include all labor, materials, tools, equipment, transportation, removal, overhead, profit, insurance, taxes, etc., to cover the finished work in place

Bidder acknowledges receipt of the following Addenda:

Addenda Received: No. _____

Date _____

The undersigned further agrees that in case of failure on his part to execute the said contract and bonds within 10 consecutive calendar days after written notice has been given of the award of the contract, the check and/or bid bond accompanying this bid and the monies payable thereon will be paid into the funds of the Owner as liquidated damages for such failure; otherwise, said check or bid bond will be returned to the undersigned.

The bidder further purposes and agrees hereby to commence the work with adequate forces and equipment within 10 days after being notified by the Owner or Engineer to proceed, and to complete the work within the specified time.

**ATTACHED HERETO is a certified check on the _____
_____ Bank of _____ and/or bid bond
with the _____ Company for the sum of _____
Dollars (_____), made payable to the Owner as a bid guarantee.**

The attached completed and executed Debarred Firms certification is hereby made a part of this bid.

Address:

_____ **Firm** _____

_____ **By** _____ **(L.S.)**

Title _____

(SEAL is bid is by a corporation)

INFORMATION FOR BIDDERS

Bids will be received and opened as specified in the advertisement.

1. Bids

- a) Each Bid must be submitted in a sealed envelope, as advertised. Each sealed envelope containing a BID must be plainly marked on the outside as **BID for Oakwood Drive Drainage Project , Job No. 1905**, and the envelope ~~should bear on the outside the Bid Number, name of BIDDER,~~ his address, all license information, etc., typed thereon and sealed. If forwarded by mail, the sealed envelope contained in the BID must be enclosed in another envelope addressed to the OWNER as advertised.
- b) The Owner may consider informal any bid not prepared and submitted in accordance with the provisions herein 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 will not be considered.
- c) All bids shall be on the printed form contained herein or on copies thereof, and shall be for all labor, material and equipment required to complete the work embraced in the contract in accordance with the plans and specifications. Bid Documents shall include the Bid, the Bid Quantity, the Non-Collusion Affidavit and the Statement of Bidder's Qualification. Bids shall be typewritten or completed in ink. All blank spaces for bid prices must be filled in, in figures, or in both words and figures if so indicated in the bid form. In addition, any other information requested in the bid form must be completed.
- d) Each BIDDER is required to state in his proposal his name and place of residence and the names of all persons interested with him; in case of a corporation the names of other than the president and secretary need not be given. Reference shall be furnished to establish the skill and business standing of the BIDDER.
- e) If the Contract is awarded, it will be awarded by the Local Public Agency to a responsible Bidder on the basis of the lowest Bid and the selected Alternative Bid items, if any. The Contract will require the completion of the work according to the Contract Documents.
- f) If called for in the bid, each bidder shall submit a price for all alternates listed therein. Failure to do so will result in the bid being considered incomplete and may result in rejection of the bid.

- g) On the first sheet of the bid form, the bidder shall write his name and address, his bidder's license number; and contractor's license number, if required. In South Carolina, where a mechanical contract amounts to \$10,000 or more, the name and license number of the sub-contractor, where his bid is used, shall also be shown.
- h) Following the BID opening, the OWNER shall determine the Items, Alternates, and Additions to be performed. Total BIDS will be calculated by adding the amounts BID by each BIDDER for such ITEMS, Alternates, and Additions, less the Deductions, so selected by the Owner in determining the low responsive, responsible BID. The OWNER reserves the right to reject any and all BIDS.
- i) The successful BIDDER will be further required to furnish the OWNER with a complete breakdown of the lump sum BID items to the satisfaction of the ENGINEER, before signing the contract documents.
- j) The Owner reserves the right to hold bids for a period of sixty (60) days after date of opening and to award the contract at any time during that period.
- k) Five (5) sets of plans and specifications will be furnished the successful Contractor at no cost and any additional sets requested will be furnished at cost.

2. INTERPRETATIONS OR ADDENDA

No oral interpretation will be made to any Bidder as to the meaning of the Contract Documents or any part thereof. Every request for such an interpretation shall be made in writing to the Local Public Agency. Any inquiry received seven or more days prior to the date fixed for opening of Bids will be given consideration. Every interpretation made to a Bidder will be in the form of an Addendum to the Contract Documents, and when issued, will be on file in the office of the Local Public Agency and the office of the Engineer at least five days before Bids are opened. In addition, all Addenda will be mailed to each person holding Contract Documents, but it shall be the Bidder's responsibility to make inquiry as to the Addenda issued. All such Addenda shall become part of the Contract and all Bidders shall be bound by such Addenda, whether or not received by the Bidders.

Each bidder shall acknowledge receipt of all addenda in the spaces provided in the bid form. It shall be each bidder's responsibility to assure himself that all addenda have been received. No claim for failure to receive addenda will be considered.

3. INSPECTION OF SITE

Each Bidder should visit the site of the proposed work and fully acquaint himself with the existing conditions there relating to construction and labor, and should fully inform himself as to the facilities involved, the difficulties and restrictions attending the performance of the Contract. The Bidder should thoroughly examine and familiarize himself with the Drawings, Technical Specifications, and all other Contract Documents. The Contractor by the execution of the Contract shall in no way be relieved of any obligation under it due to his failure to receive or examine any form or legal instrument or to visit the site and acquaint himself with the conditions there existing and the Local Public Agency will be justified in rejecting any claim based on facts regarding which he should have been on notice as a result thereof.

4. ALTERNATIVE BIDS

No alternative bids will be considered unless alternative bids are specifically requested by the technical specifications.

5. BID GUARANTY

~~Each Bid must be accompanied by a BID BOND payable to the OWNER for five percent~~ of the total amount of the Bid. As soon as the BID prices have been compared, the OWNER will return the bonds of all except the three lowest responsible BIDDERS. When the Agreement is executed the bonds of the two remaining unsuccessful BIDDERS will be returned. The BID BOND of the successful BIDDER will be retained until the payment bond and performance bond have been executed and approved, after which it will be returned. A Certified check may be used in lieu of a BID BOND.

A performance bond and payment bond, each in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract in the form attached hereto.

Attorneys-in-fact who sign BID BONDS or payment bonds and performance bonds must file with each bond a certified and effective dated copy of their power of attorney.

6. COLLUSIVE AGREEMENTS

- a) Each Bidder submitting a Bid to the Local Public Agency for any portion of the work contemplated by the documents on which Bidding is based shall and attach thereto, an affidavit substantially in the form herein provided, to the effect that he has not entered into a collusive agreement with any other person, firm, or corporation with regard to any Bid submitted.
- b) Before executing any subcontract the successful Bidder shall submit the name of any proposed subcontractor for prior approval and an affidavit substantially in the form provided in Section SUBCONTRACTS under GENERAL CONDITIONS PART I hereof.

7. STATEMENT OF BIDDER'S QUALIFICATIONS

Each Bidder shall upon request of the Local Public Agency submit on the form furnished for that purpose (a copy of which is included in the Contract Documents), a statement of the Bidder's qualifications, his experience record in constructing the type of improvements embraced in the contract, his organization and equipment available for the work contemplated, and when specifically requested by the Local Public Agency, a detailed financial statement. The Local Public Agency shall have the right to take such steps as it deems necessary to determine the availability of the Bidder to perform his obligations under the Contract and the Bidder shall furnish the Local Public Agency all such information and data for this purpose as it may request. The right is reserved to reject any Bid where an investigation of the available evidence or information does not satisfy the Local Public Agency that the Bidder is qualified to carry out properly the terms of the Contract.

8. UNIT PRICES

The unit price for each of the several items in the proposal of each Bidder shall include its prorata share of overhead so that the sum of the products obtained by multiplying the quantity shown for each item by the unit price Bid represents the total Bid. Any Bid not conforming to this requirement may be rejected as informal. The special attention of all Bidders is called to this provision, for should questions make it necessary to revise the quantities, no limit will be fixed for such increased or decreased quantities nor extra compensation allowed, provided the net monetary value of all such additive and subtractive changes in quantities of such items of work (i.e., difference in cost) shall not increase or decrease the original contract price by more than twenty-five (25%) percent, except for work not covered in the Drawings and Technical Specifications as provided for in Section CHANGES IN THE WORK under GENERAL CONDITIONS Part I hereof.

The quantities listed in the proposal form are to be considered as approximate and are to be used only for the comparison of the BIDS and as basis for computing amounts of security or penal sums of bonds to be furnished. The unit prices to be tendered by the BIDDERS are to be tendered expressly for the scheduled quantities as they may be increased or decreased. Payments, except for lump sum contracts, and except for lump sum items in unit price contracts, will be made to the CONTRACTOR for the actual quantities only of work performed or materials furnished in accordance with the plans and specifications, and it is understood that the scheduled quantities of work to be done and materials to be furnished may each be increased or diminished without in any way invalidating the unit BID prices.

9. CORRECTIONS

Bids which 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 contract documents may be rejected at the option of the Owner.

Erasures or other changes in the Bids must be explained or noted over the signature of the Bidder.

10. TIME FOR RECEIVING BIDS

- a) Bids received prior to the advertised hour of opening will be securely kept, sealed. The officer whose duty it is to open them will decide when the specified time has arrived, and no Bid received thereafter will be considered: except that when a Bid arrives by mail after the time fixed for opening, but before the reading of all other Bids is completed, and it is shown to the satisfaction of the Local Public Agency that the non-arrival on time was due solely to delay in the mail for which the Bidder was not responsible, such Bid will be received and considered.

11. OPENING OF BIDS

At the time and place fixed for the opening of Bids, the Local Public Agency will cause to be opened and publicly read aloud every Bid received within the time set for receiving Bids, irrespective of any irregularities therein. Bidders and other persons properly interested may be present, in person or by representative.

12. WITHDRAWAL OF BIDS

Bids may be withdrawn on written or telegraphic request dispatched by the Bidder in time for delivery in the normal course of business to the time fixed for opening; provided, that written confirmation of any telegraphic withdrawal over the signature of the Bidder is placed in the mail and postmarked prior to the time set for Bid opening. The Bid guaranty of any Bidder withdrawing his Bid in accordance with the foregoing conditions will be returned promptly.

13. AWARD OF CONTRACT: REJECT OF BIDS

- a) The Contract will be awarded to the responsible Bidder submitting the lowest Bid complying with the conditions of the Invitation for Bids. The Bidder to whom the award is made will be notified at the earliest possible date. The Local Public Agency, however, reserves the right to reject any and all Bids and to waive any informality in Bids received whenever such rejection or waiver is in its interest.
- b) The Local Public Agency reserves the right to consider as unqualified to do the work of general construction any Bidder who does not habitually perform with his own forces the major portions of the work involved in construction of the Improvements embraced in this Contract.

14. EXECUTION OF AGREEMENT: PERFORMANCE BOND, PAYMENT BOND, BUSINESS LICENSE

- a) Subsequent to the award and within ten (10) days after the prescribed forms are presented for signature, the successful Bidder shall execute and deliver to the Local Public Agency an Agreement in the form included in the Contract Documents such number of copies as the Local Public Agency may require.
- b) Having satisfied all conditions of award as set forth elsewhere in these documents, the successful Bidder shall, within the period specified in paragraph "a" above, furnish a surety bond in a penal sum not less than the amount of the Contract as awarded, as security for the faithful performance of the Contract, and for the payment of all persons, firms, or corporations to whom the Contractor may become legally indebted for labor, materials, tools, equipment, or services of any nature including utility and transportation services, employed or used by him in performing the work. Such bond shall be in the same form as that included in the Contract Documents and shall bear the same date as, or a date subsequent to that of the Agreement. The current power of attorney for the person who signs for any surety company shall be attached to such bond. This bond shall be obtained from companies holding certificates of authority as acceptable sureties (31 CFR 223).
- c) The failure of the successful Bidder to execute such Agreement and to supply the required bond or bonds within ten days after the prescribed forms are presented for signature, or within such extended period as the Local Public Agency may grant, based upon reasons determined sufficient by the Local Public Agency, shall constitute a default, and the Local Public Agency may either award the Contract to the next lowest responsible Bidder or re-advertise for Bids, and may charge against the Bidder the difference between the amount of the Bid and the amount for which a Contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the Bid Bond. If a more favorable Bid is received by re-advertising the defaulting Bidder shall have no claim against the Public Agency for a refund.
- d) The NOTICE OF AWARD shall be accompanied by the necessary Agreement and bond forms.

15. NOTICE TO PROCEED

The NOTICE TO PROCEED shall be issued within 10 days of the execution of the Agreement by the OWNER. Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period, the time may be extended by mutual agreement between the OWNER and CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the 10 day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

16. WAGES AND SALARIES

- ~~a) Attention of Bidders is particularly called to the requirements concerning the payment of not less than the prevailing wage and salary rates specified in the Contract Documents and the conditions of employment with respect to certain categories and classifications of employees. See GENERAL CONDITIONS PART II.~~
- b) The rates of pay set forth under GENERAL CONDITIONS, PART II, are the minimums to be paid during the life of the Contract. It is therefore, the responsibility of Bidders to inform themselves as to local labor conditions, such as the length of work day and work week, overtime compensation, health and welfare contributions, labor supply and prospective changes or adjustments of rates.

17. EQUAL EMPLOYMENT OPPORTUNITY

- a) Attention of Bidders is particularly called to the requirement for ensuring that employees and applicants for employment are not discriminated against because of their race, color, religion, sex, or national origin. (See Section EQUAL EMPLOYMENT OPPORTUNITY under GENERAL CONDITIONS PART I hereof).
- b) Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

The offerer'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 for minority and female participation are applicable to the entire Contractor's Construction work (whether or not it is Federal or federally assisted) performed in the covered areas.

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 established for the geographical area where the contract resulting from this solicitation is to be performed. 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 regulation in 41 CFR, Part 60-4. Compliance with the goals will be measured against the total work hours performed.

1. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 days of award of any construction subcontract in excess of \$10,000.00 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; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
2. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is (insert description of the geographical areas where the contract is to be performed giving the state, county, and city, if any).

GENERAL GUARANTY

3. Neither the final certificate of payment nor any provision in the Contract nor partial or entire use of the Improvements embraced in this Contract by the Local Public Agency or the public shall constitute an acceptance of work not done in accordance with the Contract or relieve the Contractor of liability in respect to any express warranties of responsibility for faulty materials or workmanship. The Contractor shall promptly remedy any defects in the work and pay for any damage to other work resulting there from which shall appear within a period of 12 months from the date of final acceptance of the work. The Local Public Agency will be given notice of defective materials and work with reasonable promptness.

18. LOCAL PUBLIC AGENCY

Wherever the term "Local Public Agency" is referenced in the contract documents, it shall mean the Owner which is the City of Spartanburg, S. C.

19. TAXES

Attention is called to the following provisions of the South Carolina Tax laws:

South Carolina law requires that a withholding tax of two percent (2%) be withheld from payments made to non-resident contractors performing a business of temporary nature in South Carolina, and provided the contract exceeds \$10,000. The withholding of two percent (2%) may be waived provided the nonresident taxpayer posts with the South Carolina Tax Commission a non-resident withholding tax bond. This provision insures the South Carolina Tax Commission that the non-resident contractor will comply with applicable provisions of the Income Tax Act of 1926, as amended. The prime contractor or employer of the non-resident contractor is held responsible for the tax due to be withheld and must withhold the tax unless he is notified by the South Carolina Tax Commission that a non-resident withholding bond has been posted covering the contract in question.

- a) In addition to the above, the non-resident contractor is required to act as withholding agent for the State of South Carolina and withhold tax from wages paid to his employees working in South Carolina. It is the responsibility of the non-resident contractor to apply for an employer account number and file the quarterly withholding reports on or before the appropriate due dates.
-

20. ENGINEER

Wherever the "Engineer" is referenced in the contract documents, it shall mean the City Storm Water Manager, P. O. Drawer 1749, Spartanburg, S. C. 29304, telephone (864) 596-2089.

NONCOLLUSION AFFIDAVIT OF PRIME BIDDER

State of South Carolina)

ss.

County of Spartanburg)

_____, being first duly sworn,
deposes and says that:

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

(signed) _____
Title

Subscribed and sworn to before me this

_____ day of _____, 20____

Title

BID BOND⁵

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

_____ as PRINCIPAL, AND
_____ as SURETY are held and
firmly bound unto _____ hereinafter
called the "Local Public Agency", in the penal sum of
_____ Dollars, (\$ _____) 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, successors, and
assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that Whereas the Principal has submitted
the Accompanying Bid,

dated _____, 20____, for _____

NOW, THEREFORE, if the Principal shall not withdraw said Bid within the period specified
therein after the said opening, and shall within the period specified therefore, or if no
period be specified, within the (10) days after the prescribed forms are presented to him
for signature, enter into a written Contract with the Local Public Agency in accordance
with the Bid as accepted, and give bond with good and sufficient surety or sureties, as
may be required, for the faithful performance and proper fulfillment of such Contract: or
in the event of the withdrawal of said Bid within the period specified, or the failure to
enter into such Contract and give such bond within the time specified, if the Principal
shall pay the Local Public Agency the difference between the amount specified to said Bid
and the amount for which the Local Public Agency may procure the required work or supplies
for both, if the latter be in excess of the former, then the above obligation shall be
void and of no effect, otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their
several seals this _____ day of _____, 20____, the name
and corporate seal of each corporate party being hereto affixed and these presents duly
signed by its undersigned representative, pursuant to authority of its governing body.

_____ (Seal)
_____ (Seal)
Attest: _____
By: _____

By: _____ Affix
Corporate Seal
Seal

(continued next page)

⁵Forms of Bid Bonds prepared to meet the requirements of local or State laws or the needs of the Local Public should be substituted for this form where necessary.
-1-

Attest:

By: _____ Affix
Corporate Seal

Countersigned

by _____

⁶Attorney-in-Fact, State of _____

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that
I am the _____,
Secretary of the Corporation named as Principal in the within bond: that
_____ who signed the said bond on behalf
of the Principal was then _____ of said corporation: that I know
his signature, and his signature thereto is genuine: and that said bond was duly
signed, sealed, and attested to, for and in behalf of said corporation by
authority of this governing body.

_____ (Corporate Seal)

Title: _____

⁶Power-of-attorney for person signing for surety company must be attached to bond.

STATEMENT OF BIDDER'S QUALIFICATIONS

(To be submitted by the Bidder only upon the specific request of the Local Public Agency.)

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he desires.

1. Name of Bidder. _____
2. Permanent main office address.
3. When organized.
4. If a corporation, where incorporated.
5. How many years have you been engaged in the contracting business under your present firm or trade name?
6. Contracts on hand: (Schedule these, showing amount of each contract and the appropriate anticipated dates of completion.)
7. General character or work performed by your Company.
8. Have you ever failed to complete any work awarded to you?
9. Have you ever defaulted on a contract?
10. List the more important projects recently completed by your Company, stating the approximate cost for each, and the month and year completed.
11. List your major equipment available for this contract.
12. Experience in construction work similar in importance to this project.
13. Background and experience of the principal members of your organization, including the officers.
14. Credit Available: \$ _____.
15. Give Bank Reference: _____.
16. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required by the City of Spartanburg?
17. The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the City of Spartanburg in verification of the recitals comprising this Statement of Bidder's Qualifications.

Dated at _____ this _____ day of, 20____.

By: _____

Title: _____

State of _____)

County of _____)

_____ being duly sworn, deposes and
says that he/she is _____ of _____
_____ and that the answers to the fore-
going questions and all statements therein contained are true and
correct.

Subscribed and sworn to before me this the _____
day of _____, 20____.

(Name) Notary Public for (State)

My Commission Expires _____

**EXHIBIT A
SCOPE OF WORK
(BY OWNER)**

Contractor will be responsible for the installation of approximately 833 feet of 18" RCP adjacent to Oakwood Avenue, Garrett Street and Washington Place. All work will need to be done to SCDOT specifications. Contractor is responsible for all traffic control, utility locates and sediment/erosion control during construction. Contractor will also be responsible for stockpiling and removal of any debris. Contractor will be responsible for any applicable permits.

WORK TO BE COMPLETED IN 30 DAYS.

EXHIBIT A-1
SPECIFICATIONS



Hulsey McCormick & Wallace
ENGINEERING • ENVIRONMENT • SCIENCE



TECHNICAL SPECIFICATIONS
FOR OAKWOOD AVENUE
STORMWATER IMPROVEMENTS
CITY OF SPARTANBURG
HMW PROJECT NO. SPA 004
OCTOBER 2019



Development

Environment

Water

Mapping

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TECHNICAL SPECIFICATIONS
FOR THE
CITY OF SPARTANBURG
OAKWOOD AVENUE STORMWATER IMPROVEMENTS

Prepared for the
City of Spartanburg, South Carolina
HMW Project No. SPA 004



OCTOBER 2019



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DIVISION 1
GENERAL REQUIREMENTS

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PART 1 - GENERAL

1.1 LOCATION OF WORK

All of the work of this Contract shall be installed at locations shown on the drawings.

1.2 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, equipment, tools, services and incidentals to complete all work required by these specifications and as shown on the drawings.
- B. The Contractor shall perform the work complete, in place, and ready for continuous service, and shall include repairs, testing, permits, clean-up, replacements and restoration required as a result of damages caused during this construction.
- C. All materials, equipment, skills, tools and labor which are reasonable and properly inferable and necessary for the proper completion of the work in a substantial manner and in compliance with the requirements stated or implied by these specifications or drawing shall be furnished and installed by the Contractor without additional compensation, whether specifically indicated in the contract documents or not.
- D. The Contractor shall comply with all municipal, county, state, federal, and other codes which are applicable to the proposed construction work.

1.3 GENERAL DESCRIPTION OF WORK TO BE PERFORMED

- A. Furnish all labor, materials, equipment and incidentals required and provide Tree Removal from the Duncan Park Lake Dam, as shown on the drawings and specified herein.
- B. The work includes, but is not necessarily limited to, the following:
Removal of existing trees and vegetation, restoration of ground surfaces and slopes, grassing and stabilization as shown on the plans.

1.4 WORK SEQUENCE

- A. All work to be done under this contract shall be done with minimum inconvenience to the existing roadway traffic flow.
- B. Coordinate the construction schedule and operations with the Owner's representative.

1.5 CONSTRUCTION AREAS

- A. Contractor shall limit his use of the construction areas for work and for storage, to allow for:
 - 1. Owner use.
- B. Coordinate use of work site.
- C. Move and store felled timber and brush, under Contractor's control which interfere with operations of the Owner or separate Contractor.

- D. Obtain and pay for the use of additional storage or work areas needed for operations.

1.6 PLANS AND SPECIFICATIONS

A. The technical specifications consist of three parts: General, Products, and Execution. The General Section contains General Requirements which govern the work. Products and Execution modify and supplement the General Requirements. The Products and Execution parts shall always govern whenever there appears to be a conflict.

- B. Intent

All work called for in the specifications applicable to this contract, but not shown on the plans in their present form, or vice versa, shall be of like effect as if shown or mentioned in both. Work not specified in either the plans or in the specifications, but involved in carrying out their intent or in the complete and proper execution of the work, is required and shall be performed by the Contractor as though were specifically delineated or described.

The apparent silence of the specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these specifications shall be made upon that basis. The inclusion of the General Requirements (or work specified elsewhere) in the general part of the specifications is only for the convenience of the Contractor, and shall not be interpreted as a complete list of related specification sections.

1.7 OWNER OCCUPANCY

Owner will have full access to and use of all existing facilities. Cooperate with Owner's representative in all construction operations to minimize conflict and to facilitate Owner usage.

1.8 PARTIAL OWNER OCCUPANCY

The Contractor shall schedule his operations for completion of portions of the work, as designated, for the Owner's occupancy prior to substantial completion of the entire work.

PART 2 - PRODUCTS

Not used

PART 3 - EXECUTION

Not used

END OF SECTION

PART 1 - GENERAL

1.1 PARTIAL OCCUPANCY BY OWNER

Whenever, in the opinion of the Engineer, any section or portion of the work or any structure is in suitable condition, it may be put into use upon the written order of the Engineer and such usage will not be held in any way as an acceptance of said Work or structure, or any part thereof, or as a waiver of any of the provisions of the specifications and the contract. Pending final completion and acceptance of the Work, all necessary repairs and replacement, due to defective materials or workmanship or operations of the Contractor, for any section of the work so put into use shall be performed by the Contractor at Contractor's own expense.

END OF SECTION

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PART 1 - GENERAL

1.1 SCOPE

- A. ~~The bid lists each item of the project for which payment will be made. No payment will be made for any items other than those listed in the bid.~~
- B. Required items of work and incidentals necessary for the satisfactory completion of the Work which are not specifically listed in the bid, and which are not specified in this section to be measured or to be included in one of the items listed in the bid, shall be considered as incidental to the work. All costs thereof, including Contractor's overhead costs and profit, shall be considered as included in the lump sum or unit prices bid for the various bid items. The Contractor shall prepare the bid accordingly.
- C. Work includes furnishing all labor, equipment, tools and materials, which are not furnished by the Owner and performing all operations required to complete the work satisfactorily, in place, as specified and as indicated on the drawings.

1.2 DESCRIPTIONS

- A. Measurement of an item of work will be by the unit indicated in the bid.
- B. Final payment quantities shall be determined from the record drawings. The record drawing lengths, dimensions, quantities, etc. shall be determined by a survey after the completion of all required work. Said survey shall conform to Section 01720 of these specifications. The precision of final payment quantities shall match the precision shown for that item in the bid.
- C. Payment will include all necessary and incidental related work not specified to be included in any other item or work listed in the bid.
- D. Payment will be made by extending unit prices multiplied by quantities provided and then summing the extended prices to reflect actual work. Such price and payment shall constitute full compensation to the Contractor for furnishing all permits, labor, equipment, tools and materials not furnished by the Owner and for performing all operations required to provide to the owner the entire project, complete in place, as specified and as indicated on the drawings.
- E. No separate payment will be made for any item of work, materials, parts, equipment, supplies or related items required to perform and complete the work. The costs for all such items required shall be included in the price bid for item of which it is a part. The Bid Form is provided for the Contractor's convenience and to assign values to the work to be performed. No separate payment shall be made for incidental work required in the contract documents. The total bid amount shall be all inclusive of the work to be performed, in place, complete, and accepted. No separate payment shall be made for any work not specifically listed on the Bid Form, but required to perform the work in the bid documents. This work will be considered incidental to the performance of the contract.

F. No separate payment shall be made to meet the work required in Section 01140 – Easement Special Conditions. Work required in the section shall be included in the unit price bid for which the work pertains.

G. “Products” shall mean materials or equipment permanently incorporated into the work.

1.3 CASH ALLOWANCES

A. Not Used

1.4 CLEARING AND GRUBBING

A. Payment for clearing and grubbing, including labor and materials, shall be included in the unit price bid for the item to which it pertains.

B. The cost of moving and reestablishing landscape features, including labor and materials, shall be included in the unit price bid for the item to which it pertains.

1.5 EROSION AND SEDIMENTATION CONTROL

A. General

1. The Contractor shall comply with all appropriate provisions of the NPDES Stormwater General Permit for Construction Activities, and the approved Storm Water Pollution Prevention Plan.

2. No separate payment shall be made for temporary and/or permanent erosion and sedimentation controls, except as noted below. All other temporary and/or permanent erosion and sedimentation control costs, including the cost of obtaining land disturbance permits or other requirements of NCDEQ, shall be included in the unit price bid for the item to which it pertains.

3. No payment will be made for any portion of the project for which temporary erosion and sedimentation controls are not properly maintained.

4. Quantities for payment shall be based upon actual quantity constructed and authorized by the Engineer.

B. Silt Fence/Sediment Barriers: All costs for sediment barriers, whether specifically hay bales, specifically silt fences, or Contractor’s choice of bales or silt fence, including installation, maintenance, repair, replacement, and removal, shall be included in the unit price bid for sediment barriers. Retainage will not be paid until all silt fence has been removed.

1.6 TRENCH EXCAVATION AND BACKFILL

- A. No separate or additional payment will be made for any special or unique method, means, techniques or equipment necessary for the Contractor's compliance with these Specifications, regulatory requirements, permits, laws or regulations which govern this project.
- B. Trench Excavation: No separate payment will be made for trench excavation. All costs shall be included in the unit price bid for the item to which it pertains at the appropriate depth.
- C. Sheeting, Bracing and Shoring: No separate payment will be made for providing sheeting, bracing and shoring.
- D. Rock Excavation
 - 1. No separate or additional payment will be made for Rock Excavation.
- E. Dewatering Excavations: All costs of equipment, labor and materials required for dewatering shall be included in the price bid for the item to which it pertains. No additional payments will be made for dewatering, including well-point systems.
- F. Trench Foundation and Stabilization
 - 1. No payment for trench stabilization shall be authorized until after the trench has been dewatered. If the pipe is installed in an inadequately prepared trench bottom, the Engineer shall notify the Contractor in writing of the deficiency and will not authorize payment for that portion of that length of pipe which was improperly installed.
 - 2. Payment for trench stabilization shall be made on the basis of the amount authorized and the unit price bid for trench stabilization. Payment shall include all costs for the removal and disposal of the unsuitable material and replacement with crushed stone. No additional payment will be made for material required for specified bedding.
- G. Bedding and Haunching
 - 1. The unit price bid for pipe for gravity sewer mains shall include excavation of the trench to the depth below the pipe necessary to provide specified bedding and to lay the pipe.
 - 2. No separate payment will be made for labor and material used to provide specified bedding. The cost of all bedding materials shall be included in the unit price bid for the item to which it relates, except for trench stabilization.
 - 3. No additional payment will be made for improved bedding required to compensate for over-excavation of the trench.

H. Backfilling

1. No additional payment will be made for additional material when excavated materials are used.
2. No separate payment shall be made for drying out the backfill material in order to meet the compaction requirements.
3. No separate payment shall be made for the adding of moisture to the backfill materials in order to meet the compaction requirements.
4. Payment for providing select material for backfilling will be made only if ordered by the Engineer. Select backfill will be ordered by the Engineer only if the in-situ material does not meet the requirements for final backfill for reasons other than moisture content, i.e., the backfill material contains rock larger than specified, organics, cinders, stumps, limbs, frozen earth or mud, man-made wastes or other unsuitable materials. No payment will be made for select backfill acquired from the project site. Payment will be made only for select backfill which is imported to the project site.

PART 2 – MEASUREMENT AND PAYMENT

2.1 GENERAL

- A. This section is the basis for payment for work to be completed under the items listed in the Bid. Each amount shall include all labor, materials, tools, surface restoration, cleanup, construction staking, equipment, transportation, overhead, profit, insurance, taxes and all other costs necessary for a complete installation and placement in service of the work. No additional compensation will be considered, except for work approved by the Owner as a change to the work as bid.

2.2 WORK TO BE COMPLETED

1. MOBILIZATION:

Mobilization shall be paid for on a lump sum (LS) basis. Payment shall be full compensation for Transporting tools, equipment, personnel and materials to the work site; construction offices (if required), temporary facilities, shop drawing submittals, bonds and insurance, demobilization, project record documents, and final cleanup. Total for this item shall not exceed more than 3% of the total bid.

2. STORM SEWER PIPE - OPEN CUT:

The Work performed under this bid item shall be paid for at the unit price per linear foot established in the bid for the various line sizes and depths and shall include all costs associated with installing the RCP storm sewer line by the open cut trench method. The unit price shall include, at a minimum, the following items:

- All field engineering and survey work
- Field investigation work as outlined on the Contract Drawings and in the Specifications

- Clearing and grubbing operations
- Removal and proper disposal of clearing and construction debris
- Daily clean-up of the construction site
- Unclassified excavation and properly compacted backfill
- Removal and disposal of unsuitable materials
- Providing and installing select backfill material
- Bedding
- RCP and gaskets
- Pipe installation and jointing of pipe
- Connections to existing storm sewer system and/or structures
- Dewatering of trench excavation
- Surface restoration of disturbed areas of construction
- Grassing
- Removal and replacement of existing fences
- Other work as required for a complete and proper installation and compliance with the Contract Documents

Measurement of the storm sewer shall be over the centerline of the pipe and shall be measured from end to end of the line for the various pipe sizes installed.

3. STORM DRAINAGE STRUCTURES:

New storm drainage structures shall be paid for at the unit price established in the bid for each structure listed and 4 ft. deep, measured from the invert of the lowest pipe, and as shown on the contract drawings and specifications. The unit price shall include at a minimum the following items:

- All site work
- Unclassified excavation
- Connections to existing storm sewer line(s)
- Cutting and removing the existing storm sewer line where the structure will be installed
- Stone bedding for structure
- Pre-cast concrete structure
- Cast Iron frame and covers and other castings
- Pre-cast grade rings
- Joint collars (12" Width)
- Manhole steps
- Grouting the manhole joints and boots
- Installation of pipe and couplings to connect to existing storm sewer line to the new structure
- Manhole Vacuum Testing
- Clearing and Grubbing
- Dewatering of trench excavation
- Surface restoration
- Grassing
- Clean-up
- All other costs associated with a complete and proper installation

4. STORM DRAINAGE STRUCTURE ADDITIONAL DEPTH:

Additional depth of storm drainage structures shall be paid for at the unit price per vertical foot established in the bid for the structures and shall be measured from a point four feet above the invert of the lowest pipe to the top of the frame, and shall include all work and costs as shown in the above paragraph.

5. CONNECT TO EXISTING STORM SEWER LINE:

Connection to existing storm sewer line or structure shall be paid for at the unit price per each connection established in the bid. The unit price shall include at a minimum the following items:

- All site work.
- Unclassified excavation.
- Core drilling the opening in the existing structure wall.
- Grouting the pipe connections watertight with water plug or non-shrink grout.
- Installation of pipe and couplings to connect to existing storm sewer line.
- Properly compacted backfill.
- Surface restoration.
- Grassing.
- Clean-up.
- All other costs associated with a complete and proper installation.

6. PLUG EXISTING STORM SEWER LINES:

Where plugging of existing storm sewer line is called for on the Contract Drawings or directed by the Engineer, work under this bid item shall be paid for at the unit price per plug (regardless of line size) as established in the bid and shall include all costs associated with excavation and backfill, cutting of existing storm sewer line, removal and disposal of pipe section removed, providing and installing the line plug material and concrete fill in accordance to the requirements of the Contract Documents, and other work as necessary to ensure a complete and proper installation.

7. EROSION & SEDIMENT CONTROL FACILITIES:

- A. Drop Inlet Protection shall be paid for at the unit price established in the bid for such drop inlet protection and shall include all costs associated with providing, installing, maintaining, and removal of the protection devices as required by the contract specifications and drawings. The Engineer shall confirm the location and type of protective device required. Payment for drop inlet protection shall be based on the following:
1. At initial installation – 50% of the total work claimed
 2. After satisfactory removal of the inlet protection – Remaining 50% of the total work claimed
- B. Silt Fence shall be paid for at the unit price established in the bid for silt fence and shall include all costs associated with providing, installing, maintaining, and removal of the silt fencing as required by the contract specifications and drawings

or as directed by the Engineer. Payment for the silt fencing shall be based on the following:

1. At initial installation- 50% of the total work claimed
2. After satisfactory removal of the silt fence- Remaining 50% of the total work claimed

8. PAVEMENT REPLACEMENT:

Pavement replacement shall be paid for at the unit price per linear foot for each type of pavement and shall include all work to saw, cut, and remove existing pavement, excavation, furnish and install stone base and new pavement, tacking, metal plating, compaction, removal of debris, cleanup, and all other work required to replace pavement in accordance with the drawings and specifications.

All saw cuts must be perpendicular or parallel to the water line or paved area. No jagged or uneven cuts will be acceptable. Measurement of pavement areas shall be performed by the Engineer and the Contractor.

A. Asphalt Replacement:

1. Length will be measured along center line of the utility from one end to the other within the area to be repaved.
2. No measurement of width will be made.
3. Payment will be made at the unit price per linear foot stated in the Bid Form.
4. The unit price shall include the installation and compaction of backfill material (including the crushed stone), maintaining the crushed stone until final pavement replacement can be made, excavating the stone, installing the new concrete fill. This shall also include excavation of the "shelves" on each side of the utility trench.
5. The 8 inches of flowable concrete fill shown on the drawing detail shall be included in the unit price per linear foot. It shall also include installation of traffic plates and meeting all requirements of the SC DOT.
6. The Contractor shall maintain access to the properties for the residents and emergency vehicles at all times.

B. Concrete Curb and Gutter:

Curb and Gutter shall be paid for at the unit price per linear foot as stated in the Bid Form. This payment shall include the concrete (3000 psi), reinforcement, forms, excavation, removal of the existing concrete, saw cutting the existing concrete, expansion joints, forms, removal of forms, backfilling, stone, testing, cleanup, grassing, and all other work required for a complete installation.

C. Supplemental Controlled Density Fill:

Payment for supplemental controlled density fill will be paid for at the unit price per cubic yard as stated in the Bid Form and it shall include installation of traffic plates and meeting all requirements of the SCOOT.

1. Concrete fill for Asphalt Replacement is not included in this pay item. Costs for Concrete fill used in the Asphalt Replacement shall be included in the unit price per linear foot stated in the Bid Form.

2. The Engineer/Owner shall determine the locations where the controlled density fill will be installed. No payment will be made without authorization for the use of supplemental controlled density fill from the Engineer.

9. UNSUITABLE SOIL EXCAVATION:

Work under this bid item shall be paid for at the unit price per cubic yard of unsuitable soil removed and replaced as established in the bid. The unit price shall include at a minimum excavation and proper disposal of the unsuitable material, providing and hauling the select backfill, and the compaction of the select backfill to the specified requirements.

NOTE: No unsuitable soil excavation will be paid for without prior approval of the Owner, Engineer or their representatives in the field prior to beginning of excavation.

10. CLASSIFIED EXCAVATION:

Work under this bid item shall be paid for at the unit price per cubic yard of rock removed as established in the bid and shall be measured on the basis of a specified trench width of three (3) feet and the depth of solid rock to a point of six (6) inches below grade. The unit price shall include at a minimum pre and post surveys of existing near-by structures, drilling, blasting, excavation and proper disposal of rock, select backfill, and proper bedding materials. No classified excavation will be paid for without prior approval of the Owner, Engineer or their representatives in the field prior to beginning of excavation.

NOTE: Classified excavation required beyond the specified trench width of three feet shall be included in the unit cost of the water line.

END OF SECTION

PART 1 - GENERAL

1.1 SCOPE

- A. Construction staking shall include all of the surveying work required to layout the work and control the location of the finished project. The Contractor shall have the full responsibility for constructing the project to the correct horizontal and vertical alignment, as shown on the drawings, as specified, or as ordered by the Engineer. The Contractor shall assume all costs associated with rectifying work constructed in the wrong location.
- B. From the information shown on the drawings and the information to be provided as indicated under project conditions below, the Contractor shall:
1. Be responsible for setting reference points and/or offsets, establishment of baselines and all other layout, staking, and all other surveying required for the construction of the project.
 2. Safeguard all reference points, stakes, grade marks, horizontal and vertical control points, and shall bear the cost of re-establishing same if disturbed.
 3. Stake out the permanent and temporary easements or the limits of construction to ensure that the work is not deviating from the indicated limits.
 4. Be responsible for all damage done to reference points, baselines, center lines and temporary benchmarks, and shall be responsible for the cost of re-establishment of reference points, baselines, center lines and temporary benchmarks as a result of the operations.
- C. Baselines shall be defined as the line to which the location of the work is referenced; i.e., edge of pavement, road centerline, property line, right-of-way or survey line.
- D. Record drawing surveys shall be performed in accordance with Section 01720 of these specifications.

1.2 PROJECT CONDITIONS

- A. The drawings provide the location and/or coordinates of principal components of the project. The alignment of some components of the project may be indicated in the specifications. The Engineer may order changes to the location of some of the components of the project or provide clarification to questions regarding the correct alignment.
- B. The Owner's Surveyor will provide the following:
1. Vertical control points, with elevation, as shown on the plans.
 2. Horizontal control points, with coordinates, as shown on the plans.

1.3 QUALITY ASSURANCE

- A. The level of detail of survey required shall be that from which the correct location of the pipeline or appurtenances can be established for the construction and verified by the Engineer.
- B. Any deviations from the drawings shall be confirmed by the Engineer prior to construction of that portion of the project.

PART 2 - PRODUCTS

The contractor shall provide all equipment and field supplies, including but not limited to, stakes, hubs, PK nails, flagging, paint, etc. necessary to perform construction staking.

PART 3 - EXECUTION

3.1 STAKING PRECISION

The precision of construction staking required shall be that from which the correct location and elevation of the storm sewer lines can be established for construction and verified by the Engineer. Where the location of components of the storm sewer, (e.g. road crossings, manholes) are not dimensioned, the establishment of the location of these components shall be based upon scaling these locations from the drawings with relation to survey reference points.

3.2 REFERENCE POINTS

- A. Reference points shall be placed, at or no more than three feet from the outside of the construction easement or right-of-way. The location of the reference points shall be recorded in a log with a copy provided to the Engineer for use, prior to verifying reference point locations. Distances shall be accurately measured to 0.01 foot.
- B. The Contractor shall give the Engineer reasonable notice that reference points are set. The reference point locations must be verified by the Engineer prior to commencing clearing and grubbing operations.

END OF SECTION

PART 1 - GENERAL

1.1 SCOPE

A. Permits and Responsibilities

The Contractor shall, at no additional cost to the Owner, be responsible for obtaining all necessary licenses and permits, including building permits and land disturbance permits, and for complying with any applicable federal, state, county and municipal laws, ordinances, codes and regulations, in connection with the performance of the work.

B. The Contractor shall take proper safety and health precautions to protect the work, the workers, the public and the property of others.

C. Prior to commencing any work, the Contractor shall submit a job-specific Health and Safety Plan to the Owner for their records.

D. Contractor shall provide inspection of sediment and erosion control measures required by the NPDES General Permit for Stormwater Discharges, SCR10000, and as described in the Stormwater Pollution Prevention Plan for the project. The Contractor shall be listed as a co-permittee in the Notice of Intent for coverage under the permit and shall sign the required certification for co-permittees.

E. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the work.

F. The Contractor shall post a copy of the construction permit in a conspicuous location on site.

END OF SECTION

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PART 1 - GENERAL

1.1 DESCRIPTION

- A. Whenever reference is made to conforming to the standards of any technical society, organization, body, code or standard, it shall be construed to mean the latest standard, code, or specification adopted and published at the time of advertisement for bids. This shall include the furnishing of materials, testing of materials, fabrication and installation practices. In those cases where the Contractor's quality standards establish more stringent quality requirements, the more stringent requirement shall prevail. Such standards are made a part hereof to the extent which is indicated or intended.
- B. The inclusion of an organization under one category does not preclude that organization's standards from applying to another category.
- C. In addition, all work shall comply with the applicable requirements of local codes, utilities and other authorities having jurisdiction.
- D. All material and equipment for which a UL Standard, an AGA or NSF approval, or an ASME requirement is established, shall be so approved and labeled or stamped. The label or stamp shall be conspicuous and not covered, painted, or otherwise obscured from visual inspection.
- E. The standards which apply to this project are not necessarily restricted to those organizations which are listed in Article 1.02.

1.2 STANDARD ORGANIZATIONS

A. Piping and Valves

ACPA	American Concrete Pipe Association
ANSI	American National Standards Institute
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
AWWA	American Water Works Association
CISPI	Cast Iron Soil Pipe Institute
DIPRA	Ductile Iron Pipe Research Association
FCI	Fluid Controls Institute
MSS	Manufacturers Standardization Society
NCPI	National Clay Pipe Institute
NSF	National Sanitation Foundation
PPI	Plastic Pipe Institute
	Uni-Bell PVC Pipe Association

B. Materials

AASHTO	American Association of State Highway and Transportation Officials
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials

C. Painting and Surface Preparation

NACE National Association of Corrosion Engineers
SSPC Steel Structures Painting Council

D. Aluminum

AA Aluminum Association
AAMA American Architectural Manufacturers Association

E. Steel and Concrete

ACI American Concrete Institute
AISC American Institute of Steel Construction, Inc.
AISI American Iron and Steel Institute
CRSI Concrete Reinforcing Steel Institute
NRMA National Ready-Mix Association
PCA Portland Cement Association
PCI Prestressed Concrete Institute

F. Welding

ASME American Society of Mechanical Engineers
AWS American Welding Society

G. Government and Technical Organizations

AIA American Institute of Architecture
APHA American Public Health Association
APWA American Public Works Association
ASA American Standards Association
ASAE American Society of Agricultural Engineers
ASCE American Society of Civil Engineers
ASQC American Society of Quality Control
ASSE American Society of Sanitary Engineers
CFR Code of Federal Regulations
CSI Construction Specifications Institute
EDA Economic Development Administration
EPA Environmental Protection Agency
FCC Federal Communications Commission
FmHA Farmers Home Administration
FS Federal Specifications
IAI International Association of Identification
ISEA Industrial Safety Equipment Association
ISO International Organization for Standardization
ITE Institute of Traffic Engineers
NBFU National Board of Fire Underwriters
(NFPA) National Fluid Power Association
NBS National Bureau of Standards
NISO National Information Standards Organization
OSHA Occupational Safety and Health Administration
SI Salt Institute

SPI	The Society of the Plastics Industry, Inc.
USDC	United States Department of Commerce
WEF	Water Environment Federation

H. Roadways

AREA	American Railway Engineering Association
DOT	Department of Transportation
SSRBC	Standard Specifications for Construction of Transportation Systems, Georgia Department of Transportation

I. Plumbing

AGA	American Gas Association
NSF	National Sanitation Foundation
PDI	Plumbing Drainage Institute
SPC	SBCC Standard Plumbing Code

1.3 SYMBOLS

Symbols and material legends shall be as scheduled on the drawings.

END OF SECTION

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PART 1 - GENERAL

1.1 SCOPE

- A. Work under this section includes all scheduling and administration of pre-construction and progress meetings as herein specified and necessary for the proper and complete performance of this work.
- B. Scheduling and Administration by Engineer/Owner:
 - 1. Prepare agenda.
 - 2. Make physical arrangements for the meetings.
 - 3. Preside at meetings.
 - 4. Record minutes and include significant proceedings and decisions.
 - 5. Distribute copies of the minutes to participants.

1.2 PRE-CONSTRUCTION CONFERENCE

- A. The Engineer shall schedule the pre-construction conference prior to the issuance of the Notice to Proceed.
- B. Representatives of the following parties are to be in attendance at the meeting;
 - 1. Owner
 - 2. Engineer
 - 3. Contractor and superintendent
 - 4. Major subcontractors
 - 5. Representatives of governmental or regulatory agencies when appropriate
- C. The agenda for the pre-construction conference shall consist of the following as a minimum:
 - 1. Distribute and discuss a list of major subcontractors and a tentative construction schedule.
 - 2. Critical work sequencing.
 - 3. Designation of responsible personnel and emergency telephone numbers.
 - 4. Processing of field decisions and change orders.
 - 5. Adequacy of distribution of contract documents.

6. Schedule and submittal of shop drawings, product data and samples.
7. Pay request format, submittal cutoff date, pay date and retainage.
8. Procedures for maintaining record documents.
9. Use of premises, including office and storage areas and owner's requirements.
10. Major equipment deliveries and priorities.
11. Safety and first aid procedures.
12. Security procedures.
13. Housekeeping procedures.
14. Work hours.

1.3 PROJECT COORDINATION MEETINGS

- A. Schedule regular meetings as directed by the Engineer. No more than 1 meeting per month.
- B. Hold called meetings as the progress of the work dictates.
- C. The meetings shall be held at the location indicated by the Engineer.
- D. Representatives of the following parties are to be in attendance at the meetings:
 1. Engineer
 2. Contractor and superintendent
 3. Major subcontractors as pertinent to the agenda
 4. Owner's representative as appropriate
 5. Representatives of governmental or other regulatory agencies as appropriate
- E. The minimum agenda for progress meetings shall consist of the following.
 1. Review and approve minutes of previous meetings.
 2. Review work progress since last meeting.
 3. Note field observations, problems and decisions.
 4. Identify problems which impede planned progress.
 5. Review off-site fabrication problems.

6. Review Contractor's corrective measures and procedures to regain planned schedule.
7. Review Contractor's revision to the construction schedule.
8. Review submittal schedule; expedite as required to maintain schedule.
9. Maintenance of quality and work standards.
10. Review changes proposed by Owner for their effect on the construction schedule and completion date.
11. Complete other current business.

END OF SECTION

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PART 1 - GENERAL**1.1 SCOPE**

- A. The work under this section includes submittal to the Engineer of shop drawings, product data and samples required by the various sections of these specifications.
- B. Submittal Contents: The submittal contents required are specified in each section.
- C. Definitions: Submittals are categorized as follows:
1. Shop Drawings
 - a. Shop drawings shall include technical data, drawings, diagrams, procedure and methodology, performance curves, schedules, templates, patterns, test reports, calculations, instruction, measurements and similar information as applicable to the specific item for which the shop drawing is prepared.
 - b. Provide newly-prepared information, on reproducible sheets, with graphic information at accurate scale (except as otherwise indicated) or appropriate number of prints hereof, with name or preparer (firm name) indicated. The contract drawings shall not be traced or reproduced by any method for use as or in lieu of detail shop drawings. Show dimensions and note which are based on field measurement. Identify materials and products in the work shown. Indicate compliance with standards and special coordination requirements. Do not allow shop drawing copies without appropriate final "Action" markings by the Engineer to be used in connection with the work.
 - c. Drawings shall be presented in a clear and thorough manner. Details shall be identified by reference to sheet and detail, specification section, schedule or room numbers shown on the Contract Drawings.
 - d. Minimum assembly drawings sheet size shall be 24 x 36-inches.
 - e. Minimum detail sheet size shall be 8-1/2 x 11-inches.
 - f. Minimum Scale:
 - 1) Assembly Drawings Sheet, Scale: 1 - inch = 30 feet.
 - 2) Detail Sheet, Scale: 1/4 - inch = 1 foot.
 2. Product Data
 - a. Product data include standard printed information on materials, products and systems not specially prepared for this project, other than the designation of selections from among available choices printed therein.

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- b. Collect required data into one submittal for each unit of work or system, and mark each copy to show which choices and options are applicable to the project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked and special coordination requirements.
3. Samples
 - a. Samples include both fabricated and un-fabricated physical examples of materials, products and units of work, both as complete units and as smaller portions of units of work, either for limited visual inspection or, where indicated, for more detailed testing and analysis.
 - b. Provide units identical with final condition of proposed materials or products for the work. Include "range" samples, not less than three units, where unavoidable variations must be expected, and describe or identify variations between units of each set. Provide full set of optional samples where the Engineer's selection is required. Prepare samples to match the Engineer's sample where indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations and compliance with standards. Samples are submitted for review and confirmation of color, pattern, texture and "kind" by the Engineer. Engineer will note "test" samples, except as otherwise indicated for other requirements, which are the exclusive responsibility of the Contractor.
 4. Miscellaneous submittals related directly to the work (non-administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, statements of applicability, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock, security/protection/safety keys and similar information, devices and materials applicable to the work but not processed as shop drawings, product data or samples.

1.2 SPECIFIC CATEGORY REQUIREMENTS

- A. General: Except as otherwise indicated in the individual work sections, comply with general requirements specified herein for each indicated category of submittal.
 1. Submittals shall contain:
 - a. Three (3) sets of shop drawings, manufacturer's literature, etc. to be retained by the Engineer, plus the number of copies required by the Contractor, Manufacturer, etc.
 - b. The date of submittal and the dates of any previous submittals
 - c. The project title.

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- d. Numerical submittal numbers, starting with 1.0, 2.0, etc. Revisions to be numbered 1.1, 1.2, etc.
- e. The names of:
 - 1) Contractor
 - 2) Supplier
 - 3) Manufacturer
- f. Identification of the product, with the specification section number, permanent equipment tag numbers and applicable drawing number.
- g. Field dimensions, clearly identified as such.
- h. Relation to adjacent or critical features of the work or materials.
- i. Applicable standards, such as ASTM or federal specification numbers.
- j. Notification to the Engineer in writing, at time of submissions, of any deviations on the submittals from requirements of the contract documents.
- k. Identification of revisions on re-submittals.
- l. An 8 x 3-inch blank space for Contractor and Engineer stamps.
- m. Contractor's stamp, initialed or signed, certifying the review of submittal, verification of products, field measurements and field construction criteria and coordination of the information within the submittal with requirements of the work and of contract documents.
- n. Submittal sheets or drawings showing more than the particular item under consideration shall have all but the pertinent description of the item for which review is requested crossed out.

1.3 ROUTING OF SUBMITTALS

- A. Submittals and routing correspondence shall be routed as follows:
 - 1. Supplier to Contractor (through representative if applicable).
 - 2. Contractor to Engineer
 - 3. Engineer to Contractor and Owner
 - 4. Contractor to Supplier

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

1.4 ADDRESS FOR COMMUNICATIONS

Engineer: Hulsey McCormick & Wallace, Inc.
106 Clair Drive
Piedmont, SC 29673
(864) 269-0890 FAX (864) 269-9030

PART 2 - PRODUCTS

2.1 SHOP DRAWINGS

- A. Unless otherwise specifically directed by the Engineer, make all shop drawings accurately to a scale sufficiently large to show all pertinent features of the item and its method of connection to the work.
- B. Submit all shop assembly drawings larger than 11 x 17-inches in the form of one reproducible transparency with two opaque prints or blue lines.
- C. Submit all shop drawings 11 x 17 inches and smaller in the form of six opaque prints or blue lines.
- D. One reproducible for all submittals larger than 11 x 17- inches and no more than three prints of other submittals will be returned to the Contractor.

2.2 MANUFACTURER'S LITERATURE

- A. Where content of submitted literature from manufacturers includes data not pertinent to this submittal, clearly indicate which portion of the contents is being submitted for the Engineer's review.
- B. Submit the number of copies which are required to be returned (not to exceed three) plus three copies which will be retained by the Engineer.

2.3 SAMPLES

- A. Samples shall illustrate materials, equipment or workmanship and established standards by which completed work is judged.
- B. Unless otherwise specifically directed by the Engineer, all samples shall be of the precise article proposed to be furnished.
- C. Submit all samples in the quantity which is required to be returned plus one sample which will be retained by the Engineer.

2.4 COLORS

- A. Unless the precise color and pattern is specifically described in the contract documents, wherever a choice of color or pattern is available in a specified product, submit accurate color charts and pattern charts to the Engineer for review and selection.

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- B. Unless all available colors and patterns have identical costs and identical wearing capabilities, and are identically suited to the installation, completely describe the relative costs and capabilities of each.

2.5 OPERATION, MAINTENANCE AND SERVICE MANUALS

- A. Prepare and submit for the Owner's use two (2) copies of O&M Manual for each piece of equipment.
 - 1. Submit Manuals 60 days prior to delivery of equipment.
- B. Manuals shall be specific to the equipment supplied.
 - 1. Manuals applicable to many different configurations and which require the operator to selectively read portions of the instructions will not be accepted.
 - 2. The equipment model that the Manual applies to shall be indicated by an arrow.
- C. Provide a Table of Contents specific to each Manual.
- D. At the beginning of each Manual, provide a description of the equipment to include model numbers, purchase order numbers, serial numbers, motor information, and performance and design criteria.
- E. Correlate Manuals with the approved shop drawings and include the following minimum information:
 - 1. Parts list, including recommended spare parts list.
 - 2. Guarantees.
 - 3. Recommended maintenance instructions.
 - 4. Recommended lubricants and lubrication instructions.
 - 5. Address and telephone number of the source for repairs, spare parts and service.
 - 6. Detailed description of operating procedure for the item of equipment specifically written for this installation, including start-up and shut-down procedures.
 - 7. Equipment performance specifications, including pump curves.
 - 8. Results of start-up and any further recommendations resulting from start-up.
 - 9. Current cost for each recommended spare part and agreement to provide updated costs at Owner's request.
- F. Provide a maintenance and lubrication schedule to be a summary of all preventative maintenance and lubrication, including the following information:

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

1. Title.
 2. Type of activity (inspection, adjustment, oil change, etc.).
 3. Brief description of activity.
 4. Type of lubricant.
 5. Frequency (daily, weekly, etc.).
- G. The manufacturer shall provide the Owner with a log chart to record all servicing and maintenance required during the equipment warranty period.
- H. For process oriented equipment, treatment plants, etc., provide a detailed description of the process operation and trouble-shooting of problems.
- I. Provide clear and legible copies. Type parts lists, etc.
- J. Layout and detail drawings shall be reduced to a maximum size of 11" x 17", unless written approval is received from the Engineer prior to submittal of Manuals.
- K. Provide a clearly labeled three-ring binder for Manuals having a thickness greater than 1/2". Provide sheet lifters if binder is more than 1/2 full.
1. Provide multiple binders for Manuals having a thickness greater than 2".

PART 3 - EXECUTION

3.1 CONTRACTOR'S COORDINATION OF SUBMITTALS

- A. Prior to submittal for the Engineer's review, the Contractor shall use all means necessary to fully coordinate all material, including the following procedures:
1. Determine and verify all field dimensions and conditions, catalog numbers and similar data.
 2. Coordinate as required with all trades and all public agencies involved.
 3. Submit a written statement of review and compliance with the requirements of all applicable technical Specifications as well as the requirements of this section.
 4. Clearly indicate in a letter or memorandum on the manufacturer's or fabricator's letterhead, all deviations from the contract documents.
- B. Each and every copy of the shop drawings and data shall bear the Contractor's stamp showing that they have been so checked. Shop drawing submittal to the Engineer without the Contractor's stamp will be returned to the Contractor for conformance with this requirement.

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- C. The Owner may back charge the Contractor for costs associated with having to review a particular shop drawing, product data or sample more than two times to receive a "No Exceptions Taken" mark.
- D. **Grouping of Submittals**
 - 1. Unless otherwise specifically permitted by the Engineer, make all submittals in groups containing all associated items.
 - 2. No review will be given to partial submittals of shop drawings for items which interconnect and/or are interdependent. It is the Contractor's responsibility to assemble the shop drawings for all such interconnecting and/or interdependent items, check them, and then make one submittal to the Engineer along with Contractor's comments as to compliance, non-compliance or features requiring special attention.
- E. **Schedule of Submittals:** Within 30 days of contract award and prior to any shop drawing submittal, the Contractor shall submit a schedule showing the estimated date of submittal and the desired approval date for each shop drawing anticipated. A reasonable period shall be scheduled for review and comments. Time lost due to unacceptable submittals shall be the Contractor's responsibility and some time allowance for re-submittal shall be provided. The schedule shall provide for submittal of items which relate to one another to be submitted concurrently.

3.2 TIMING OF SUBMITTALS

- A. **Engineer Review**
 - 1. Allow a minimum of 14 days for the Engineer's initial processing of each submittal requiring review and response, except allow longer periods where processing must be delayed for coordination with subsequent submittals. The Engineer will advise the Contractor promptly when it is determined that a submittal being processed must be delayed for coordination. Allow a minimum of two weeks for reprocessing each submittal. Advise the Engineer on each submittal as to whether processing time is critical to progress of the Work, and therefore the work would be expedited if processing time could be foreshortened.
 - 2. Acceptable submittals will be marked "No Exceptions Taken". A minimum of three (3) copies will be retained by the Engineer for Engineer's and the Owner's use and the remaining copies will be returned to the Contractor.
 - 3. Submittals requiring minor corrections before the product is acceptable will be marked "Make Corrections Noted". The Contractor may order, fabricate and ship the items included in the submittals, provided the indicated corrections are made. Drawings must be resubmitted for review and marked "No Exceptions Taken" prior to installation or use of products.
 - 4. Submittals marked "Revise and Resubmit" must be revised to reflect required changes and the initial review procedure repeated.

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

5. The "Rejected" notation is used to indicate products which are not acceptable. Upon return of a submittal so marked, the Contractor shall repeat the initial review procedure utilizing acceptable products.
 6. Only two copies of items marked "Revise and Resubmit" and "Rejected" will be reviewed and marked. One copy will be retained by the Engineer and the other copy with all remaining unmarked copies will be returned to the Contractor for re-submittal.
- B. No work or products shall be installed without a drawing or submittal bearing the "No Exceptions Taken" notation. The Contractor shall maintain at the job site a complete set of shop drawings bearing the Engineer's stamp.
 - C. Substitutions: In the event the Contractor obtains the Engineer's approval for the use of products other than those which are listed first in the contract documents, the Contractor shall, at the Contractor's own expense and using methods approved by the Engineer, make any changes to structures, piping and electrical work that may be necessary to accommodate these products.
 - D. Use of the "No Exceptions Taken" notation on shop drawings or other submittals is general and shall not relieve the Contractor of the responsibility of furnishing products of the proper dimension, size, quality, quantity, materials and all performance characteristics, to efficiently perform the requirements and intent of the contract documents. The Engineer's review shall not relieve the Contractor of responsibility for errors of any kind on the shop drawings. Review is intended only to assure conformance with the design concept of the project and compliance with the information given in the contract documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site. The Contractor is also responsible for information that pertains solely to the fabrication processes or to the technique of construction and for the coordination of the work of all trades.

3.3 RESUBMISSION REQUIREMENTS

- A. Shop Drawings
 1. Revise initial drawings as required and resubmit as specified for initial submittal, with the re-submittal number shown.
 2. Indicate on drawings all changes which have been made other than those requested by the Engineer.
- B. Project Data and Samples: Resubmit new data and samples as specified for initial submittal, with re-submittal number shown.

END OF SECTION

PART 1 - GENERAL**1.1 SCOPE**

- A. ~~This section includes testing which the Owner may require to determine if materials provided for the project meet the requirements of these specifications.~~
- B. This work also includes all testing required by the Owner to verify work performed by the Contractor is in accordance with the requirements of these specifications, i.e., soil compaction, etc.
- C. The testing laboratory or laboratories will be selected by the Owner and will work for the Owner.

1.2 PAYMENT FOR TESTING SERVICES

- A. The cost of testing services required by the contract shall be paid for by the Owner.
- B. The cost of additional testing services not specifically required in the specifications, but requested by the Owner or Engineer, shall be paid for by the Owner.
- C. The cost of retesting any item that fails to meet the requirements of these specifications shall be paid for by the Contractor. Retesting shall be performed by the testing laboratory working for the Owner.

1.3 LABORATORY DUTIES

- A. Cooperate with the Owner, Engineer and Contractor.
- B. Provide qualified personnel promptly on notice.
- C. Perform specified inspections, sampling and testing of materials.
 - 1. Comply with specified standards, ASTM, other recognized authorities, and as specified.
 - 2. Ascertain compliance with requirements of the contract documents.
- D. Promptly notify the Engineer and Contractor of irregularity or deficiency of work which are observed during performance of services.
- E. Promptly submit three copies (two copies to the Engineer and one copy to the Contractor) of report of inspections and tests in addition to those additional copies required by the Contractor with the following information included:
 - 1. Date issued
 - 2. Project title and number
 - 3. Testing Laboratory name and address

4. Name and signature of inspector
 5. Date of inspection or sampling
 6. Record of temperature and weather
 7. Date of test
 8. Identification of product and Specification section
 9. Location of Project
 10. Type of inspection or test
 11. Results of test
 12. Observation regarding compliance with the contract documents
- F. Perform additional services as required.
- G. The laboratory is not authorized to release, revoke, alter or enlarge on requirements of the contract documents, or approve or accept any portion of the work.

1.4 CONTRACTOR RESPONSIBILITIES

- A. Cooperate with laboratory personnel; provide access to work.
- B. Furnish required labor and facilities to:
1. Obtain and handle samples at the site;
 2. Facilitate inspections and tests.
- C. Notify the laboratory sufficiently in advance of operation to allow for the assignment of personnel and schedules of tests.
- D. Laboratory Tests: Where such inspection and testing are to be conducted by an independent laboratory agency, the sample(s) shall be selected by such laboratory or agency, or the Engineer, and shipped to the laboratory by the Contractor at Contractor's expense.
- E. Copies of all correspondence between the Contractor and testing agencies shall be provided to the Engineer.

1.5 QUALITY ASSURANCE

Testing shall be in accordance with all pertinent codes and regulations and with procedures and requirements of the American Society for Testing and Materials (ASTM).

1.6 PRODUCT HANDLING

Promptly process and distribute all required copies of test reports and related instructions to insure all necessary retesting or replacement of materials with the least possible delay in the progress of the work.

1.7 CODE COMPLIANCE TESTING

Inspections and tests required by codes or ordinances or by a plan approval authority, and made by a legally constituted authority, shall be the responsibility of, and shall be paid for by the Contractor, unless otherwise provided in the contract documents.

1.8 CONTRACTOR'S CONVENIENCE TESTING

Inspection or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor and at the Contractor's expense.

1.9 TESTING SCHEDULE**A. Establishing Schedule**

1. The Contractor shall, by advance discussion with the testing laboratory, determine the time required for the laboratory to perform its tests and to issue each of its findings, and make all arrangements for the testing laboratory to be on site to provide the required testing.
2. Provide all required time within the construction schedule.

B. When changes of construction schedule are necessary during construction, coordinate all such changes of schedule with the testing laboratory as required.

C. When the testing laboratory is ready to test according to the determined schedule, but is prevented from testing or taking specimens due to incompleteness of the work, all extra costs for testing attributable to the delay will be back-charged to the Contractor and shall not be borne by the Owner.

1.10 SAMPLING SPECIMENS

Unless otherwise indicated in the contract documents, all specimens and samples for tests will be sampled by the testing laboratory or the Engineer.

1.11 TRANSPORTING SAMPLES

The Contractor shall be responsible for transporting all samples, except those taken by testing laboratory personnel, to the testing laboratory.

END OF SECTION

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PART 1 - GENERAL

1.1 SCOPE

A. Temporary facilities required for this work include, but are not necessarily limited to:

1. Temporary utilities such as water
2. First aid facilities
3. Sanitary facilities
4. Potable water
5. Temporary enclosures and construction facilities

1.2 GENERAL

- A. First aid facilities, sanitary facilities and potable water shall be available on the project site on the first day that any activities are conducted on site. The other facilities shall be provided as the schedule of the project warrants.
- B. Maintenance: Use all means necessary to maintain temporary facilities in proper and safe condition throughout progress of the work. In the event of loss or damage, immediately make all repairs and replacements necessary, at no additional cost to the Owner.
- C. Removal: Remove all such temporary facilities and controls as rapidly as progress of the work will permit.
- D. Contractor shall maintain access to Owner's facilities during the course of construction. Any temporary closing of Owner access shall be coordinated with the Owner's schedule.

1.3 TEMPORARY UTILITIES

- A. General
 1. Provide and pay all costs for all water, electricity and other utilities required for the performance of the work.
 2. Pay all costs for temporary utilities until project completion.
 3. Costs for temporary utilities shall include all power, water, and the like, necessary for testing equipment as required by the contract documents.
- B. Temporary Water: Provide all necessary temporary piping, and upon completion of the work, remove all such temporary piping. Provide and remove water meters.

1.4 FIRST AID FACILITIES

The contractor shall provide a suitable first aid station, equipped with all facilities and medical supplies necessary to administer emergency first aid treatment. The Contractor shall have standing arrangements for the removal and hospital treatment of any injured person. All first aid facilities and emergency ambulance service shall be made available by the Contractor to the Owner and the Engineer's personnel.

1.5 SANITARY FACILITIES

Prior to starting the work, the Contractor shall furnish, for use of Contractor's personnel on the job, all necessary toilet facilities which shall be secluded from public observation. These facilities shall be either chemical toilets or shall be connected to the Owner's sanitary sewer system. All facilities, regardless of type, shall be kept in a clean and sanitary condition and shall comply with the requirements and regulations of the area in which the work is performed. Adequacy of these facilities will be subject to the Engineer's review and maintenance of same must be satisfactory to the Engineer at all times.

1.6 POTABLE WATER

The Contractor shall be responsible for furnishing a supply of potable drinking water for employees, subcontractors, inspectors, engineers, the Owner, and others who are associated with the work.

1.7 ENCLOSURES AND CONSTRUCTION FACILITIES

Furnish, install and maintain for the duration of construction, all required storage containers and other temporary construction necessary for proper completion of the Work in compliance with all pertinent safety and other regulations.

1.8 PARKING FACILITIES

Parking facilities for the Contractor's and Contractor's subcontractors' personnel shall be the Contractor's responsibility. The storage and work facilities provided by the Owner will not be used for parking by the Contractor's or subcontractor's personnel.

END OF SECTION

PART 1 - GENERAL

1.1 BARRICADES, LIGHTS AND SIGNALS

- A. The Contractor shall furnish and erect such barricades, fences, lights and danger signals and shall provide such other precautionary measures for the protection of persons or property and of the work as necessary. Barricades shall be painted in a color that will be visible at night. From sunset to sunrise, the Contractor shall furnish and maintain at least one light at each barricade and sufficient numbers of barricades shall be erected to keep vehicles from being driven on or into any work under construction.
- B. The Contractor will be held responsible for all damage to the work due to failure of barricades, signs and lights. Whenever evidence is found of such damage, the Contractor shall immediately remove the damaged portion and replace it at Contractor's cost and expense. The Contractor's responsibility for the maintenance of barricades, signs and lights shall not cease until the project has been accepted by the Owner.

END OF SECTION

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PART 1 - GENERAL

1.1 SCOPE

~~Limit blowing dust caused by construction operations by applying water or employing other~~
appropriate means or methods to maintain dust control, subject to the approval of the Owner. At a minimum, this may require the use of a water wagon twice a day to suppress dusty conditions.

1.2 PROTECTION OF ADJACENT PROPERTY

- A. The bidders shall visit the site and note the buildings, landscaping, roads, parking areas, environmentally sensitive areas and other facilities near the work site that may be damaged by their operations. The Contractor shall make adequate provision to fully protect the surrounding area and will be held fully responsible for all damages resulting from Contractor's operations.

- B. Protect all existing facilities (indoors or out) from damage by dust, fumes, spray or spills (indoors or out). Protect motors, bearings, electrical gear, instrumentation and building or other surfaces from dirt, dust, welding fumes, paint spray, spills or droppings causing wear, corrosion, malfunction, failure or defacement by enclosure, sprinkling or other dust palliatives, masking and covering, exhausting or containment.

END OF SECTION

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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 MANUFACTURERS' RECOMMENDATIONS

- A. Except as otherwise approved by the Engineer, determine and comply with manufacturer'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 manufacturer, 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 which 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.
- C. 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 manufacturers' 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 of completion.

PART 2 - MATERIALS

Not used

PART 3 - EXECUTION

Not Used

END OF SECTION

PART 1 - GENERAL

1.1 SCOPE

This section covers the general cleaning which the Contractor shall be required to perform both during construction and before final acceptance of the project unless otherwise shown on the drawings or specified elsewhere in these specifications.

1.2 QUALITY ASSURANCE

- A. Daily, and more often if necessary, conduct inspections verifying that requirements of cleanliness are being met.
- B. In addition to the standards described in this section, comply with all pertinent requirements of governmental agencies having jurisdiction.

1.3 HAZARD CONTROL

- A. The Contractor shall store volatile wastes in covered metal containers and remove from premises daily.
- B. The Contractor shall prevent accumulation of wastes which create hazardous conditions.
- C. Burning or burying rubbish and waste materials on the site shall not be allowed.
- D. Disposal of volatile wastes into sanitary storm sewers shall not be allowed.

1.4 DISPOSAL OF SURPLUS MATERIALS

- A. Unless otherwise shown on the drawings, specified or directed, the Contractor shall legally dispose, off the site, all surplus excavated materials and materials and equipment from demolition and shall provide Contractor's own suitable, off-site spoil area, or utilize a site designated by the Owner.
- B. The Owner shall have the opportunity to inspect any removed equipment or materials prior to disposal by the Contractor. If said equipment and/or materials are determined to be salvageable by the Owner, the Contractor shall transport said equipment and material to a building or area designated by the Owner.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS AND EQUIPMENT

Provide all required personnel, equipment and materials needed to maintain the specified standard of cleanliness.

2.2 COMPATIBILITY

Use only the cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material or as approved by the Engineer.

PART 3 - EXECUTION

3.1 PROGRESS CLEANING

A. General

1. Retain all stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic and providing the required protection of materials.
2. Do not allow the accumulation of scrap, debris, waste material and other items not required for construction of this work.
3. At least each week, and more often as necessary, completely remove all scrap, debris and waste material from the job site.
4. Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the environment.

B. Site

1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris and waste material. Remove all such items to the place designated for their storage.
2. Weekly, and more often if necessary, inspect all arrangements of materials stored on the site; restack or otherwise service all arrangements to meet the requirements of paragraph 3.1 above.
3. At all times maintain the site in a neat and orderly condition which meets the approval of the Engineer.

3.2 FINAL CLEANING

- A. **Definitions:** Except as otherwise specifically provided, "clean" for the purpose of this Section shall be interpreted as meaning the level of cleanliness generally provided by commercial building maintenance subcontractors using commercial quality building maintenance equipment and materials.
- B. **General:** Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris and waste. Conduct final cleaning as described in 3.1 above.
- C. **Site:** Unless otherwise specifically directed by the Engineer, hose down all paved areas on the site and all public sidewalks directly adjacent to the site; rake clean other surfaces of the grounds. Completely remove all resultant debris.
- D. **Restoration of Landscape Damage:** Any landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the Contractor's expense. The Engineer will decide what method of restoration shall be used.

- E. The Contractor shall protect all trees outside of the limits of construction. The Contractor shall be responsible for the replacement of damaged trees outside the limits of construction.
- F. ~~Post-Construction Clean-up or Obliteration:~~ The Contractor shall obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other vestiges of construction, as directed by the Engineer.
- G. Timing: Schedule final cleaning as approved by the Engineer to enable the Owner to accept a completely clean project.

3.3 CLEANING DURING OWNER'S OCCUPANCY

Should the Owner occupy the work or any portion thereof prior to its completion by the Contractor and acceptance by the Owner, responsibilities for interim and final cleaning of the occupied spaces shall be as determined by the Engineer in accordance with the supplementary conditions of the contract documents.

END OF SECTION

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PART 1 - GENERAL

1.1 PROJECT MAINTENANCE AND WARRANTY

- A. ~~Maintain and keep in good repair the work covered by these drawings and specifications until acceptance by the Owner.~~
- B. The Contractor shall warrant for a period of one year from the date of Owner's written acceptance of certain segments of the work and/or Owner's written final acceptance of the project, as defined in the contract documents, that the completed work is free from all defects due to faulty products or workmanship. The Contractor shall promptly make such corrections as may be necessary by reason of such defects. The Owner will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments or other work that may be made necessary by such defects, the Owner may do so and charge the Contractor the Cost thereby incurred. The performance bond shall remain in full force and effect throughout the warranty period.
- C. The Contractor shall not be obligated to make replacements which become necessary because of ordinary wear and tear, or as a result of improper operation or maintenance, or as a result of improper work or damage by another Contractor or the Owner, or to perform any work which is normally performed by a maintenance crew during operation.
- D. In the event of multiple failures of major consequence-prior-to-the-expiration of the one year warranty described above, the affected unit shall be disassembled, inspected and modified or replaced as necessary to prevent further occurrences. All related components which may have been damaged or rendered non-serviceable as a consequence of the failure shall be replaced. A new 12-month warranty against defective or deficient design, workmanship, and materials shall commence on the day that the item is reassembled and placed back into operation. As used herein, multiple failure shall be interpreted to mean two or more successive failures of the same kind in the same item or failures of the same kind in two or more items. Major failures may include, but are not limited to, cracked or broken housing, piping, or vessels, excessive deflections, bent or broken shafts, broken or chipped gear teeth, premature bearing failure, excessive wear or excessive leakage around seals. Failures which are directly and clearly traceable to operator abuse, such as operations in conflict with published maintenance instructions, shall be exempted from the scope of the one year warranty. Should multiple failures occur in a given item, all products of the same size and type shall be disassembled, inspected, modified or replaced as necessary and re-warranted for one year.
- E. The Contractor shall, at Contractor's own expense, furnish all labor, materials, tools and equipment required and shall make such repairs and removals and shall perform such work or reconstruction as may be made necessary by any structural or functional defect or failure resulting from neglect, faulty workmanship or faulty materials, in any part of the work performed by the Contractor. Such repair shall also include refilling of trenches, excavations or embankments which show settlement or erosion after backfilling or placement.

- F. Except as noted on the drawings or as specified, all structures such as embankments and fences shall be returned to their original condition prior to the completion of the contract. Any and all damage to any facility not designated for removal, resulting from the Contractor's operations, shall be promptly repaired by the Contractor at no cost to the Owner.
- G. The Contractor shall be responsible for all road and entrance reconstruction and repairs and maintenance of same for a period of one year from the date of final acceptance. In the event the repairs and maintenance are not made immediately and it becomes necessary for the Owner of the road to make such repairs, the Contractor shall reimburse the Owner of the road for the cost of such repairs.
- H. The Contractor shall protect existing trees and other vegetation to remain in place against unnecessary cutting, breaking, skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line and excess foot or vehicular traffic, or parking of vehicles within drip line. The Contractor shall be responsible for the replacement of such damaged trees and vegetation.
- I. In the event the Contractor fails to proceed to remedy the defects upon notification within 15 days of the date of such notice, the Owner reserves the right to cause the required materials to be procured and the Work to be done, as described in the drawings and specifications, and to hold the Contractor and the sureties on Contractor's bond liable for the cost and expense thereof.
- J. Notice to Contractor for repairs and reconstruction will be made in the form of a registered letter addressed to the Contractor at Contractor's home office.
- K. Neither the foregoing paragraphs nor any provision in the contract documents, nor any special guarantee time limit implies any limitation of the Contractor's liability within the law of the place of construction.

END OF SECTION

DIVISION 2
SITE CONSTRUCTION

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TRENCHING, BACKFILLING FOR UTILITIES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Trench, backfill, and compact as specified herein and as needed for installation of underground utilities associated with the 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. Section 02721 - Sewers: Storm Drainage.

1.2 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. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.

1.3 JOB CONDITIONS

- A. Existing utilities:
 - 1. There now exists in the construction areas, waterworks, storm drainage, sanitary sewers, street paving, gas mains and other utilities.
 - 2. Approximate location of certain underground lines and structures are shown on the plans for information only, other underground lines or structures are not shown.
 - 3. Locate these and other possible unknown utility lines using electronic pipe finder, or other approved means.
 - 4. Locate, excavate and expose all existing underground lines in advance of trenching operations.
 - 5. The Contractor will be held responsible for the workmanlike repair of any damage done to any of these utilities in the execution of his work under this Section.
 - 6. The Contractor shall familiarize himself with the existing conditions and be prepared to adequately care for and safeguard himself and the Owner from damage.
- B. Notification of intent to excavate:
 - 1. South Carolina Underground Utility Damage Prevention Act (S.C. Code Ann, 58-35-10, CT-SEQ, Supp. 1978) requires persons to ascertain the location of underground public utility property prior to excavation or demolition in certain situations. The Act also requires such persons to give timely notice of intent to excavate or demolish prior to commencing such operations. Failure to comply

TRENCHING, BACKFILLING FOR UTILITIES

could subject the violator to a civil penalty of up to one thousand dollars (\$1,000) for each violation of the Act.

2. Notification of intent to excavate may be given by calling this toll free number: 1-888-721-7877.

C. Protecting trees, shrubbery and lawns:

1. Trees and shrubbery in developed areas and along the trench line shall not be disturbed unless absolutely necessary, and subject to the approval of the Engineer.
 - a. Any such trees and shrubbery necessary to be removed shall be heeled in and replanted.
2. Where trenches cross private property through established lawns, sod shall be cut, removed, stacked and maintained in suitable condition until replacement is approved by the Engineer.
 - a. Topsoil underlying lawn areas shall be removed and kept separate from general excavated materials.

D. Clearing:

1. Perform all clearing necessary for installation of the complete work.
2. Clearing shall consist of removing all trees, stumps, roots, brush and debris in the rights-of-way obtained for the Work.
3. All timber of merchantable size shall remain the property of the Owner and shall be trimmed and cut in such lengths as directed and stacked along the edge of the right-of-way.
4. All other material, including trimmings from above, shall be completely disposed of in a satisfactory manner.

E. Removing and resetting fences:

1. Where existing fences must be removed to permit construction of utilities:
 - a. Remove such fences and, as the Work progresses, reset the fences in their original location and condition.
 - b. Provide temporary fencing or other safeguards as required to prevent stock and cattle from wandering to other lands.

F. Restoration of disturbed areas:

1. Restore all areas disturbed by, during or as a result of construction activities to their existing or better condition.
 - a. For existing areas with sod type grasses, replace with new sod. Existing sod may be reused where properly removed and stored.
2. Do not interpret this as requiring replacement of trees and undergrowth in undeveloped sections of the rights-of-way.

G. Minimizing silting and bank erosion during construction:

1. During construction, protective measures shall be taken and maintained to minimize silting and bank erosion of creeks and rivers adjacent to the work being performed during construction.

TRENCHING, BACKFILLING FOR UTILITIES

H. Blasting:

1. Store all explosives in a secure manner, complying with all laws, ordinances, and regulations.
2. Contractor shall be responsible for damage caused by blasting operations.

PART 2 - PRODUCTS

2.1 EXCAVATED MATERIALS

- A. Perform all excavation of every description and of whatever substances encountered to depths indicated or specified.
- B. Pile material suitable for backfilling in an orderly manner at safe distance from banks or trenches to avoid overloading and to prevent slides or cave-ins.
- C. Remove and deposit unsuitable or excess materials as directed by the Engineer.

2.2 BACKFILL MATERIALS

- A. Provide from materials excavated for installation of utility.
 1. Select soil material free from organic matter and deleterious substances, containing no rocks or lumps over 2" in greatest dimension for backfill up to 12" above top of utility being covered.
 2. Do not permit rocks larger than 2" in greatest dimension in top 6" of backfill.

2.3 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.
- B. Should the quantity of suitable on-site material be insufficient to complete the work, provide suitable borrow material as approved by the Engineer at no additional expense to the Owner.
- C. Provide select materials from on-site if acceptable material as approved by the Engineer is available on-site. Otherwise, provide approved select material from an off-site source.

PART 3 - EXECUTION

3.1 PROCEDURES

- A. Existing utilities:
 1. Unless shown to be removed, protect active utility lines shown on the drawings or otherwise made known to the Contractor prior to trenching. If damaged, repair or replace at no additional cost to the Owner.

TRENCHING, BACKFILLING FOR UTILITIES

2. If active utility lines are encountered and are not shown on the Drawings or otherwise made known to the Contractor, promptly take necessary steps to assure that service is not interrupted.
3. If service is interrupted as a result of work under this Section, immediately restore service by repairing the damaged utility at no additional cost to the Owner.
4. If existing utilities are found to interfere with the permanent facilities being constructed under this Section, immediately notify the Engineer and secure his instructions.
5. Do not proceed with permanent relocation of utilities until written instructions are received from the Engineer.

B. Locations within streets or highways:

1. Comply with South Carolina Department of Transportation's (SCDOT) "Encroachment Permit" issued for the Work, and the South Carolina Department of Transportation's (SCDOT) "*A Policy for Accommodating Utilities on Highway Rights-of-Way*".
2. Take all precautions and comply with all requirements as may be necessary to protect the improvements, including barricades for protection of traffic.
3. Keep minimum of one lane open to traffic at all times where utility crosses street or highway.

C. Protection of persons and property:

1. Barricade open holes and depressions occurring as part of the Work, and post warning lights on property adjacent to or with public access.
2. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, washout and other hazards created by operations under this Section.

D. Dewatering:

1. Remove all surface and subsurface waters from excavations and maintain the excavation in a dry condition during construction operations.
2. Maintain the ground water level a minimum of 3-feet below the trench bottom during excavation, installation and backfilling.
 - a. Material disturbed below the invert elevation due to improper dewatering shall be removed and replaced with crushed stone or lean concrete at no expense to the Owner.
 - b. Use sumps, pumps, drains, trenching, wells, vacuum or well point system as necessary to maintain the ground water level a minimum of 3-feet below the trench bottom and maintain a dry excavation.
 - c. Dewatering by trench pumping will not be permitted if migration of fine grained natural material (running sand) from bottom, side walls or bedding material will occur.
 - d. Provide monitoring wells sufficient in size, location, number and depth to monitor the ground water level in the construction area during excavation and backfill operations.

TRENCHING, BACKFILLING FOR UTILITIES

- e. Maintain dewatering operations until backfilling and compaction operations are complete.
- 3. Dispose of water pumped from excavations in storm drains having capacity, canals, trenches or other approved locations.
 - a. Contractor is responsible for acquiring all permits required to discharge the water and shall protect waterways from turbidity during the operation.
 - b. Prevent flooding of streets, roadways, or private property.
 - c. Provide engines driving dewatering pumps with residential type mufflers.
- E. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.
- F. Maintain access to adjacent areas at all times.

3.2 TRENCH EXCAVATION (Classified)

- A. Remove all materials of whatever substance encountered, additional payment to be made for rock excavation as hereinafter defined and specified.
 - 1. Rock excavation to consist of the removal and disposal of the following materials:
 - a. Boulders 1/2 cubic yard or more in volume.
 - b. Solid rock.
 - c. Materials that cannot be removed without systematic drilling and blasting, such as rock material in ledges or aggregate conglomerate deposits that are so firmly cemented as to possess the characteristics of solid rock.
 - d. Concrete and masonry structures exceeding 1/2 cubic yard in volume except sidewalks and paving.
 - 2. Rock excavation does not include:
 - a. Boulders, concrete or masonry structures less than 1/2 cubic yard in volume.
 - b. Hard and compact materials such as cemented gravel and relatively soft or disintegrated rock that can be removed without continuous and systematic drilling and blasting.
 - c. Material removed by intermittent drilling and blasting performed to increase production.
 - 3. Do not remove material claimed as rock until the Engineer has classified and cross-sectioned same.
- B. Where trenching occurs in existing lawns, remove turf in sections and keep damp. Replace turf upon completion of the backfilling.
- C. Open cut:
 - 1. Excavate for utilities by open cut.
 - 2. If conditions at the site prevent such open cut, and if approved by the Engineer, tunneling may be used.

TRENCHING, BACKFILLING FOR UTILITIES

3. Short sections of a trench may be tunneled if, in the opinion of the Engineer, the conductor can be installed safely and backfill can be compacted properly into such tunnel.
 4. Remove boulders and other interfering objects, and backfill voids left by such removals, at no additional cost to the Owner.
 5. Remove wet or otherwise unstable soil incapable of properly supporting the utility, as determined by the Engineer, to depth required and backfill to proper grade with stone bedding material, at no additional cost to the Owner.
 6. Excavating for appurtenances:
 - a. Excavate for manholes and similar structures to a distance sufficient to leave at least 12" clear between outer surfaces and the embankment or shoring that may be used to hold and protect the banks.
 - b. Overdepth excavation beyond such appurtenances that has not been directed will be considered unauthorized. Fill with sand, gravel, or lean concrete as directed by the Engineer, and at no additional cost to the Owner.
- D. Trench to the minimum width necessary for proper installation of the utility, with sides as nearly vertical as possible. Accurately grade the bottom to provide uniform bearing for the utility.
- E. Provide sheeting and shoring necessary for protection of the Work and for the safety of personnel.
1. Remove in units when level of backfilling has reached the elevation necessary to protect the utility work and adjacent property.
 2. Sheeting at the bottom of trenches over 10' deep for sewers 15" and larger in size, shall remain in place and be cut off no less than 2" above top of pipe, at no additional cost to the Owner.
- F. Depressions:
1. Dig bell holes and depressions for joints after the trench has been graded. Provide uniform bearing for the pipe on prepared bottom of the trench.
 2. Except where rock is encountered, do not excavate below the depth indicated or specified.
 3. Where rock is encountered, excavate rock to a minimum overdepth of 4" below the trench depth indicated or specified, and to provide 6" clearance in any horizontal direction from all parts of the utility and appurtenances.
- G. Special requirements relating to excavation for specific types of utilities shall comply with the following:
1. Sanitary or storm sewer lines:
 - a. Comply with requirements of and Section 02721.
 - b. Do not excavate trench more than 200' ahead of pipe laying, unless permitted by Engineer.
 - c. Maintain trench sides vertical to point not less than 2' above top of pipe.
 - d. Upper portion of trench may be sloped to any width which will not cause damage to adjoining structures, utilities, pavements or private property.

TRENCHING, BACKFILLING FOR UTILITIES

H. Comply with pertinent OSHA regulations in regards to the excavation of utilities.

3.3 BACKFILLING**A. General:**

1. Backfill trenches and excavations immediately after the pipes are laid, unless other protection is directed or indicated.
2. Select and deposit backfill materials with special reference to the future safety of the pipes.
3. Reopen trenches which have been improperly backfilled, to a depth as required for proper compaction. Refill and compact as specified, or otherwise correct to the approval of the Engineer.
4. Surplus material shall be disposed of as directed by the Engineer.
5. Original surface shall be restored to the approval of the Engineer.
6. Maintain proper dewatering during backfill and compaction operations.

B. Lower portion of trench:

1. Deposit approved backfill and bedding material in layers of 6" maximum thickness, and compact with suitable tampers to the density of the adjacent soil until there is a cover of not less than 24" over sewers and 12" over other utility lines.
2. Take special care in backfilling and bedding operations not to damage pipe and pipe coatings.

C. Remainder of trench:

1. Except for special materials for pavements, backfill the remainder of the trench with material free from stones larger than 6" or 1/2 the layered thickness, whichever is smaller, in any dimension.
2. Deposit backfill material in layers not exceeding the thickness specified, and compact each layer to the minimum density directed by the soil engineer.

D. Adjacent to buildings: Mechanically compact backfill in 6" layers within ten (10') feet of buildings.

E. Under roads, streets and other paved areas:

1. Mechanically tamp in 6" layers using heavy duty pneumatic tampers or equal.
2. Tamp each layer to a density equivalent of not less than 100% of an ASTM D 698 Proctor Curve.
3. Provide additional compaction by leaving the backfilled trench open to traffic while maintaining the surface with crushed stone.
4. Refill any settlement with crushed stone and continue such maintenance until replacement of pavement is authorized by the Engineer.

TRENCHING, BACKFILLING FOR UTILITIES

F. Undeveloped areas:

1. Backfill in wooded, swampy or undeveloped areas shall be as specified hereinbefore, except that tamping of the backfill above a level 2' over the top of the pipe will not be required.
2. Mound excavated material neatly over the ditch to provide for future settlements.

3.4 EXCAVATION BY JACKING-BORING

- A. Install casings where indicated by jacking and boring.
- B. Comply with Section 02780.

3.5 MEASUREMENT AND PAYMENT

- A. Classified excavation:
 1. Rock excavation will be measured as specified in the individual sections for each site utility and paid for at the unit price per cubic yard stated in the Bid Form.
 2. No measurement or direct payment will be made for excavation of other materials and all costs for same shall be included in the price bid for the utility line to which it pertains.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Provide controlled density fill (flowable fill) at the locations shown on the drawings, as specified, and as required for a complete and proper installation.
- 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. Section 02221 - Trenching, Backfilling for Utilities.
 - 3. Section 2616 – Milling, Cutting, and Replacing Pavements.

1.2 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. Comply with the applicable sections of the South Carolina Department of Transportation's Standard Specification for Highway Construction.

1.3 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.
- B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 - 1. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
 - 2. Concrete mix design, prepared by the manufacturer of the controlled density fill, showing compliance with the specified properties.

1.4 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01640.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Provide a slurry of the specified portland cement, fly ash, sand and water.

1. Use portland cement complying with ASTM C 150, Type I or II.
 2. Use fly ash approved by the manufacturer of the flowable fill.
- B. Additives:
1. Admixtures for entrained air may be used if specifically recommended by the manufacturer.
 2. Do not use calcium chloride.
- C. Water: Use water which is potable and free from deleterious amounts of alkali, acid, and organic materials which would adversely affect the setting time or strength of the concrete.
- D. Sand: Use fine aggregate conforming to ASTM C 33-82.
- E. Design the mix to obtain a compressive strength of more than 80 psi at 28 days with an ultimate strength not to exceed 200 psi.
- F. Slump:
1. 7" to 10".
 2. Provide lower slump fill around pipelines to a point above the top of the pipe to prevent floating.

2.2 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

- A. Place in forms or cast against earth.
- B. Weather conditions:
1. Avoid freezing before initial set of the concrete.
 2. Do not place at temperatures of less than 40°F, or when freezing conditions are expected in less than 24 hours.

CONTROLLED DENSITY FILL

- C. Remove any form materials prior to earth backfilling.
- D. Protect the flowable fill mass and do not permit fill of any kind to be placed thereon until the concrete has attained a compressive strength of at least 30 psi.
- E. In roadways, provide metal traffic plates over the fill until it has obtained its compressive strength. Meet all SCDOT standards for applications and installations.

3.3 CLEANING UP

- A. Completely remove all traces of concrete from surfaces on which it was not scheduled to be placed.

3.4 MEASUREMENT AND PAYMENT

- A. All work under this section will be measured and paid for as specified in Section 01025 (Measurement and Payment).

END OF SECTION

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PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: Provide protection of the environment during the construction of this project to reduce soil erosion and siltation to the lowest reasonably achievable level. Provide protection of wetlands, lakes, stream buffers, bed and bank areas outside of work limits.

1.2 GENERAL

- A. Exercise every reasonable precaution, throughout the life of the project, to prevent the eroding of soil and the silting of rivers, streams, lakes, reservoirs, other water impoundments, ground or roadway surfaces, or other property. Erosion control practices to be used for this project are shown on the drawings and are to conform to South Carolina Department of Health and Environmental Control regulations.
- B. Contractor shall comply with the requirements of the current NPDES General Permit for Stormwater Associated with Construction Activities, and the Stormwater Pollution Prevention Plan for the project.

PART 2 - PRODUCTS

2.1 CRUSHED STONE

- A. Provide 2" – 3" diameter crushed stone for project entrance and exit.
- B. Provide 9" – 12" depth crushed stone for temporary sediment barriers around inlets.

2.2 GRASSING

- A. Comply with Section 02930: Grassing.

2.3 SILT FENCE

- A. Posts:
 - 1. Only steel posts shall be used. Steel posts shall be self-fastener angle steel type, 5' in length.
- B. Provide not less than No. 9 wire staples, 1.5" long for fastening wire mesh.
- C. Woven wire shall conform to the requirements of ASTM A116, Class I zinc coating for wire. Each woven square shall measure 5.33" X 12". The top and bottom wires shall be 10 gauge. All other wires shall be 12 gauge.
- D. Wire mesh is not required with synthetic, extra strength filter fabric providing a puncture strength of 50 psi in accordance with ASTM D4833.
- E. Filter fabric shall be burlap or synthetic.

- F. If silt fencing is used more than 5 days, synthetic type shall be used.
- G. Burlap shall be 7.5 ounces weight and a minimum 32" wide.
- H. Filter fabric shall be Mirafi 100X as manufactured by Celanese Fibers Co., or Bidim C34 as manufactured by DuPont or equivalent.

2.4 EROSION CONTROL BLANKET

- A. Use erosion control blanket S150, from North American Green or approved equal.

PART 3 – EXECUTION**3.1 GENERAL**

- A. Construct and maintain all erosion control measures until the substantial completion of the project.

3.2 CONSTRUCTION ENTRANCE

- A. Construct a gravel area or pad at points where vehicles enter and leave a construction site.
- B. Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade and place gravel to the grade and dimensions shown on the plans.
- C. Construct drainage channels to carry water to a sediment trap or other suitable outlet.
- D. Use geotextile fabrics to improve stability of the foundation in locations subject to seepage or high water table.
- E. Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site by periodic top dressing with two inches of stone.
- F. After each rainfall, inspect any structure used to trap sediment and clean it out as necessary.
- G. Immediately remove objectionable materials spilled, washed, or tracked onto public roadways.

3.3 TEMPORARY GRASSING

- A. Provide a temporary cover for erosion control on disturbed areas that will remain unstabilized for a period of more than 14 days in accordance with Section 02930.
- B. This practice applies to cleared areas, diversions, dams, temporary sediment basins, temporary road banks, and topsoil stockpiles where vegetation is needed for less than 1 year.
- C. Provide grassing on slope 5% or greater within 14 days of disturbance.
 - 1. Comply with Section 02930: Grassing.

3.4 SILT FENCE

- A. Provide silt fence barrier where shown on the plans and on utility construction parallel to the disturbed trench where perpendicular sheet flow runoff occurs on disturbed areas with slopes greater than 4%.
- B. Place at the extreme limits of the area to be disturbed as shown.
- C. Construct temporary sediment barriers of filter fabric, buried at the bottom, stretched and supported by posts and install below small disturbed areas as indicated on the drawings to retain sediment by reducing the flow velocity to allow sediment deposition.
- D. Provide spacing between posts 5'0" on center, minimum.
- E. Fasten wire mesh to steel posts with wire staples.
- F. Remove sediment deposits prior to reaching one-third height of the fence.
- G. Monitor site frequently and place additional silt fencing should evidence indicate that erosion is about to occur at locations other than those shown on plan.

3.5 EROSION CONTROL BLANKET

- A. Provide on areas as shown on the plans or on all embankments with slopes equal to or steeper than 2:1.

3.6 CURB INLET PROTECTION

- A. Construct temporary sediment barriers around storm drain curb inlets as indicated on the drawings.
- B. Inspect structure after each rainfall and repair as required.
- C. Remove sediment when trap reaches one-half capacity.
- D. Remove structure when protected areas have been stabilized.

3.7 MAINTENANCE

- A. Place all erosion control devices or measures prior to any land disturbing activity within the drainage area they are located.
- B. Periodically check erosion control devices and clean or otherwise remove silt build-up as necessary to maintain them in proper working order.

3.8 REMOVAL

- A. Remove temporary structures after protected areas have been stabilized.

SECTION 02370
EROSION AND SEDIMENT CONTROL

3.9 INSPECTION

- A. Contractor shall provide inspection of erosion and sediment control measures shown on the drawings and described in this section and the Stormwater Pollution Prevention Plan for the project. Inspections shall be performed by a qualified person as described in the current NPDES General Permit for Stormwater Associated with Construction Activities, and in accordance with the schedule in the Stormwater Pollution Prevention Plan.

3.10 MEASUREMENT AND PAYMENT

- A. Comply with the pertinent provisions of Section 01025.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Provide asphaltic concrete paving where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- 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.

1.2 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.

1.3 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.
- B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 - 1. Materials list of items proposed to be provided under this Section.
 - 2. Certificates, signed by the materials producer and the asphalt paving Subcontractor, stating that materials meet or exceed the specified requirements.
 - 3. Mix designs from the hot mix asphalt (HMA) plant to include temperature at which the mixture leaves the plant.

1.4 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01640.

PART 2 - PRODUCTS

2.1 GENERAL

- A. All materials and products used shall comply with pertinent sections of the South Carolina Department of Transportation's (SCDOT) "Standard Specifications for Highway Construction", current edition.

2.2 ASPHALTIC CONCRETE MIXTURE (BINDER COURSE)

- A. Materials and composition of mixture shall comply with Section 402 of the SCDOT "Standard Specifications for Hot Mixed Asphalt (HMA) Pavement".
- B. Paving material will be HMA Intermediate Course Type B.

- C. Provide hot plant mixed asphaltic concrete paving materials.
- D. Comply with SCDOT Standard Specifications (latest revision).
- E. Mix must not consist of more than 25% recycled asphalt.
- F. Contractor shall be required to submit an approved SCDOT design mix prior to the start of paving.

2.3 ASPHALTIC CONCRETE MIXTURE (SURFACE COURSE)

- A. Materials and composition of mixture shall comply with Section 403 of the SCDOT "Standard Specifications for Hot Mixed Asphalt (HMA) Pavement".
- B. Paving material will be HMA Intermediate Course Type C.
- C. Provide hot plant mixed asphaltic concrete paving materials.
- D. Comply with SCDOT Standard Specifications (latest revision).
- E. Mix must not consist of more than 25% recycled asphalt.
- F. Contractor shall be required to submit an approved SCDOT design mix prior to the start of paving.

2.4 EQUIPMENT

- A. Comply with requirements of Section 401 of SCDOT's "Standard Specifications".

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Comply with the construction provisions of the SCDOT Standard Specifications applicable to the hot mix asphalt material being applied.
- B. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
 - 1. Sweep primed surfaces if needed.
 - 2. Adjust frames and covers if needed.

3.2 WEATHER RESTRICTIONS

- A. Do not apply asphalt mixtures to a wet or frozen surface or when air temperature is below 40°F in the shade and falling, or below 35°F in the shade and rising.

3.3 SPREADING AND FINISHING

- A. On arrival at point of use, dump directly into mechanical spreader.
- B. Immediately spread and strike off true to the line, grade and cross section indicated, to such loose depth that when work is completed, the indicated thickness or weight per square yard will be secured.
- C. Correct irregularities while the mixture is still hot.
- D. At locations not readily accessible to mechanical spreaders, acceptable hand spreading methods may be used.
- E. Finished surfaces placed adjacent to curbs, gutters, manholes, etc., shall be approximately 1/4" above the edges of these structures.

3.4 COMPACTION

- A. Perform initial rolling with 3-wheel steel roller or a steel wheel 2-axle tandem roller.
- B. Follow initial rolling with at least four complete coverages by a pneumatic tired roller.
- C. Complete rolling with steel wheel 2-axle tandem roller.
- D. Rolling shall start longitudinally at the sides and proceed gradually toward the center of the pavement, overlapping on successive trips approximately 1/2 the width of the roller.
- E. Use hand or mechanical tampers in areas not accessible to powered rollers.
- F. Surface mixture after compaction shall be smooth and true to the established crown and grade.
- G. Finished paving smoothness tolerance:
 - 1. Free from birdbaths.
 - 2. No deviations greater than 1/8" in 6'.

3.5 PROTECTION OF SURFACE

- A. Allow no traffic on surface until the mixture has hardened sufficiently to prevent distortion.

3.6 FLOOD TEST

- A. Flood the entire asphaltic concrete paved area with water by use of a tank truck or hoses.
- B. If a depression is found where water ponds to a depth of more than 1/8" in 6', fill or otherwise correct to provide proper drainage.

Section 02513
ASPHALTIC CONCRETE PAVING

- C. Feather and smooth the edges of fill so that the joint between fill and original surface is invisible.
-

END OF SECTION

CONCRETE CURB AND GUTTER, AND SIDEWALK**PART 1 - GENERAL****1.1 DESCRIPTION**

- A. Work included: Provide cast-in-place concrete, including formwork, where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- 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.

1.2 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. Reference standards: Comply with the following codes, specifications and standards, except as otherwise shown or specified:
1. American Concrete Institute (ACI) Publications:
 - ACI 305 Recommended Practice for Hot Weather Concreting
 - ACI 306 Recommended Practice for Cold Weather Concreting
 2. American Society for Testing and Materials (ASTM) Publications:
 - A 185 Welded Steel Wire Fabric for Concrete Reinforcement
 - C 31 Making and Curing Concrete Test Specimens in the Field
 - C 33 Concrete Aggregates
 - C 39-72 Compressive Strength of Cylindrical Concrete Specimens
 - C 94 Ready-Mixed Concrete
 - C 150 Portland Cement
 - C 260 Air-Entraining Admixtures for Concrete
- C. Testing agency: A testing laboratory will be retained by the Owner to perform material evaluation tests required by these specifications.
- D. Qualifications of contractors performing concrete work: Minimum of two (2) years experience on comparable concrete projects.
- E. Plant qualification: Plant equipment and facilities shall meet all requirements of the Check List for Certification of Ready Mixed Concrete Production Facilities of the National Ready Mixed Concrete Association and ASTM C 94.

1.3 SUBMITTALS

- A. Comply with the pertinent provisions of Section 01340.

CONCRETE CURB AND GUTTER, AND SIDEWALK

- B. Within 15 calendar days after receiving the Owner's Notice to Proceed, submit proposed mix designs for approval.
1. Proportions shall be determined by means of laboratory tests of concrete made with the cement and aggregate proposed for use.
 2. Provide report in detail from an approved testing laboratory showing 7-day and 28-day strengths obtained using materials proposed.
 3. Required average strength above specified strength:
 - a. Determinations of required average strength above specified strength (f_c) shall be in accordance with ACI 318 and ACI 301.
 4. Cost of this work shall be borne by the Contractor.
- C. Manufacturer's data: Submit manufacturer's specification with application instructions for proprietary materials and items, including curing compound, form release agents, admixtures, patching compounds, and others as required by the Engineer.

1.4 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01640.

PART 2 - PRODUCTS**2.1 FORMS**

- A. Use form materials conforming to ACI 347.
- B. Form coatings: Form release coating shall be neat oil with surface wetting agent or chemical release agent which effectively prevents absorption of moisture, prevents bonding with concrete, is non-staining to concrete and leaves the concrete with a paintable surface.
1. On surfaces to receive an applied coating, use a residual free chemical form release agent that is compatible with the applied coating and will not prevent the applied finish from satisfactorily bonding to the concrete.

2.2 SIDEWALK REINFORCEMENT

- A. Fiber reinforcing:
1. Use fiber reinforcing where indicated on the drawings.
 2. Provide polypropylene or co-polymer fibers as manufactured by High Tech Fibers, Inc., Fibermesh Company or an approved equal.
 3. Where required, use fiber reinforcing at a rate of 2.0 lbs. per cubic yard unless another rate is indicated on the drawings.

CONCRETE CURB AND GUTTER, AND SIDEWALK

- B. Provide welded wire mesh for sidewalk reinforcement in compliance with ASTM A 185.

2.3 PREMOLDED JOINT FILLERS

- A. In concrete pavements (exterior) and concrete sidewalks, use asphalt impregnated cellulose fiber joint fillers complying with ASTM D 1751.

2.4 CONCRETE MATERIALS

- A. Cement: Use portland cement: ASTM C 150, Type I, Type I-P or Type II, low alkali.

- B. Aggregates:

1. Fine aggregate: Conform to ASTM C 33.
2. Coarse aggregate: Conform to ASTM C 33, Size #57.

- C. Water: Clean and potable and free from injurious amounts of deleterious materials.

- D. Admixtures:

1. Air entraining admixture: ASTM C 260.
2. Water reducing, set controlling admixture: Conform to ASTM C 494.
 - a. Type A - water reducing.
 - b. Type D - water reducing and retarding.
3. Do not use admixtures containing calcium chloride.

- E. Curing compounds:

1. On all vertical and formed surfaces and construction joints, use a non-residual, non-staining curing compound conforming to ASTM C 309 Type 1 and 1D. Acceptable products are:
 - a. L&M Cure by L&M Construction Chemicals, Inc.
 - b. Horn WB-75 by A.C. Horn Company.
 - c. Sonosil by Sonneborn, Inc.
 - d. Approved equal.

2.5 CONCRETE MIXES

- A. Provide concrete with the compressive strength of 3000 psi for a 28-day strength as minimum:

- B. Entrained air: 3000 psi concrete, 5% \pm 1%.

- C. Slump: 3000 psi concrete, 4" \pm 1".

- D. Production of concrete:

CONCRETE CURB AND GUTTER, AND SIDEWALK

1. General: Concrete shall be ready mixed and shall be batched, mixed and transported in accordance with ASTM C 94 except as otherwise indicated.
2. Monitor time and mix proportions by plant delivery slips.
3. ~~Air-entraining admixtures: Add air-entraining admixture into the mixture as a solution and measure by means of an approved mechanical dispensing device.~~
4. Water reducing and retarding admixture: Add water reducing and retarding admixture and measure as recommended by the manufacturer.
5. Addition of water to the mix upon arrival at the job site shall not exceed that necessary to compensate for a 1" loss in slump, nor shall the design maximum water-cement ratio be exceeded. Water shall not be added to the batch at any later time.
6. Weather conditions: Control temperature of mix as required by ACI 306 "Cold Weather Concreting" and by ACI 305 "Hot Weather Concreting".

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- B. Water, mud, organic, and other detrimental material shall be removed from excavations before concrete is deposited.
- C. Notify the Engineer prior to placing concrete and place no concrete until the formwork, reinforcing and embedded items have been inspected by the Engineer.

3.2 FORMWORK

- A. General:
 1. Construct forms in conformance with ACI 347.
 2. Provide formwork sufficiently tight to prevent leakage of cement paste during concrete placement.
 3. Coat form contact surfaces with approved form coating compound prior to placing reinforcing steel.
- B. Formwork reuse: Reuse only forms that are in good condition and which maintain a uniform surface texture on exposed concrete surfaces.
 1. Apply a light sanding as necessary to obtain a uniform texture.
- C. Removal of forms:

CONCRETE CURB AND GUTTER, AND SIDEWALK

1. Do not disturb or remove forms until the concrete has hardened sufficiently to permit form removal with complete safety.
2. Exercise care in removing forms from finished concrete surfaces so that surfaces are not marred or gouged and that corners are true, sharp and unbroken.
3. Whenever the formwork is removed during the curing period, continue to cure the exposed concrete by one of the methods specified herein.

3.3 PLACING CONCRETE

A. Preparation:

1. Remove foreign matter accumulated in the forms.
2. Rigidly close openings left in the formwork.
3. Wet wood forms sufficiently to tighten up cracks. Wet other material sufficiently to maintain workability of the concrete.
4. Use only clean tools.
5. Provide and maintain sufficient tools and equipment on hand to facilitate uninterrupted placement of the concrete.
6. Before commencing concrete, inspect and complete installation of formwork and wire mesh.

B. Conveying:

1. Transport and handle concrete from the truck to the place of final deposit as rapidly as practicable by methods which will prevent segregation or loss of ingredients to maintain the quality of the concrete.
2. Provide equipment for lifting, dumping, chuting, pumping or conveying the concrete, of such size and design as to ensure a practically continuous flow of concrete at the delivery and without separation of materials.
3. Do not use concrete that is not placed within 1½ hours after water is first introduced into the mix unless the slump is such that it meets the specified limits without the addition of water to the batch.

C. Placing:

1. Deposit concrete as nearly as practicable in its final location so as to avoid separation due to rehandling and flowing.
2. Place concrete at such a manner that concrete upon which fresh concrete is deposited is still plastic.

D. Hot weather placement: Place concrete in hot weather in accordance with SCDOT requirements and ACI 305 "Hot Weather Concreting" and as specified herein.

1. Do not place concrete whose temperature exceeds 100°F.
2. Thoroughly wet forms and reinforcing prior to placement of concrete.
3. Use additional set retarder as necessary to increase set time.
4. Start curing as soon as the concrete is sufficiently hard to permit without damage.

CONCRETE CURB AND GUTTER, AND SIDEWALK

- E. Cold weather placement: Place concrete in cold weather in accordance with SCDOT requirements and ACI 306 and as specified herein.
 - 1. Do not place concrete when the atmospheric temperature is below 40°F.
 - 2. Do not add salts, chemicals, or other materials to the concrete mix to lower the freezing point of the concrete.

- F. Consolidation:
 - 1. Consolidate each layer of concrete immediately after placing, by use of internal concrete vibrators supplemented by hand spading, rodding, or tamping.
 - a. Use vibrators having a 2" head diameter and a minimum frequency of 8000 vibrations per second.
 - b. Provide sufficient number of vibrators to properly consolidate the concrete, keeping up with placement operations.
 - c. Provide at least one spare vibrator on site.
 - 2. Insert and withdraw vibrators at points approximately 18" apart.
 - 3. Do not vibrate forms.
 - 4. Do not use vibrators to transport concrete inside the forms.

3.4 PROTECTION

- A. Protect the surface finish of newly placed concrete from damage by rainwater or construction traffic.
- B. Do not apply design loads to structures until the concrete has obtained the specified strength.

3.5 CURING

- A. Beginning immediately after placement, protect concrete from premature drying, excessively hot and cold temperatures and mechanical injury.
- B. Curing compound: Apply curing compound immediately after completion of the finish on unformed surfaces and within two hours after removal of forms on formed surfaces.
 - 1. Spray the entire surface with two coats of liquid curing compound, applying the second coat in the direction of 90° to the first coat.
 - 2. Apply compound in accordance with the manufacturer's instructions to cover the surface with a uniform film that will seal thoroughly.

3.6 CONCRETE FINISHING

- A. Finish schedule: Unless otherwise indicated on the drawings, finish all concrete surfaces in accordance with the following schedule:

CONCRETE CURB AND GUTTER, AND SIDEWALK

1. Form finish: Formed surfaces not ordinarily exposed to view, including the underside of slabs not exposed to view.
 2. Broom finish: Exterior, outdoor slabs exposed to view including:
 - a. Outdoor floor slabs and walkways.
 - b. Other floors which may become wet or otherwise require a non-skid surface.
 - c. Sidewalks and concrete pavements.
 3. Edge finish: Exposed edges of slabs not receiving chamfer including:
 - a. Sidewalk edges and joints.
 - b. Pavement edges and joints.
 - c. Other slab edges not chamfered.
- B. Finishing procedures:
1. Form finish:
 - a. Repair defective concrete.
 - b. Fill depressions deeper than 1/4".
 - c. Fill tie holes.
 - d. Remove fins exceeding 1/8" in height.
 2. Broom finish:
 - a. Float finish as specified herein.
 - b. Provide a scored texture by drawing a broom across the surface.
 3. Edge finish: Tool slab edges and joints with a 1/4" radius edging tool.

3.7 SURFACE REPAIR

- A. Patching mortar:
1. Make a patching mortar consisting of 1 part portland cement to 2-1/2 parts sand by damp loose volume.
 2. Mix the mortar using one part acrylic bonding admixture to two parts water.
- B. Surface defects:
1. Remove all defective concrete down to sound solid concrete.
 2. Chip edges perpendicular to the concrete surface or slightly undercut, allowing no feathered edges.
 3. Dampen surfaces to be patched.
 4. Patch defects by filling solidly with repair mortar.
- C. Allow the Engineer to inspect the work before placing the patching mortar.
- D. Repair defective areas greater than 1 sq. ft. or deeper than 1-1/2" as directed by the Engineer using materials approved by the Engineer at no additional expense to the Owner.

CONCRETE CURB AND GUTTER, AND SIDEWALK**3.8 JOINTS**

A. Construction joints:

1. Unless otherwise approved by the Engineer, provide construction joints every six (6) feet, or as shown on the drawings.
2. Continue all reinforcing across construction joints and provide 1-1/2 " deep keyways unless indicated otherwise on the drawings.

B. Expansion joints:

1. Provide 1/2" expansion joints with premolded joint filters every thirty (30) feet.

3.9 FIELD QUALITY CONTROL

A. Concrete cylinder tests:

1. During construction, prepare test cylinders for compressive strength testing, using 6" diameter by 12" long single use molds, complying with ASTM C 31.
 - a. Make a set of three test cylinders from each pour.
 - b. Identify each and tag cylinder as to date of pour and location of concrete which it represents.
 - c. Deliver cylinders to testing lab selected by the Owner.
 - d. Cost for preparation and delivery of cylinders shall be borne by the Contractor. Cost for testing cylinders will be borne by the Owner.
2. Should strengths shown by test cylinders fail to meet specified strengths for the concrete represented, then:
 - a. Engineer shall have the right to require changes in the mix proportions as he deems necessary on the remainder of the work.
 - b. Additional curing of those portions of the structure represented by the failed test cylinders shall be accomplished as directed by the Engineer.
 - c. Upon failure of the additional curing to bring the concrete up to specified strength requirements, strengthening or replacement of those portions of the structure shall be as directed by the Engineer.
 - d. The Engineer may require additional testing of concrete in question by either non-destructive methods such as the Swiss Hammer, Windsor Probe or Ultrasonics or by coring and testing the concrete in question in accordance with ASTM C 42. Such testing shall be performed at no additional cost to the Owner.

B. Other field concrete tests:

1. Slump tests: Either the Engineer or a testing laboratory representative will make slump tests of concrete as it is discharged from the mixer.
 - a. Slump test may be made on any concrete batch at the discretion of the Engineer.
 - b. Failure to meet specified slump requirements will be cause for rejection of the concrete.

CONCRETE CURB AND GUTTER, AND SIDEWALK

2. Temperature: The concrete temperature may be checked at the discretion of the Engineer.
 3. Entrained air: Air content of the concrete will be checked by a representative of the testing laboratory at the discretion of the Engineer.
-
- C. Coordination of laboratory services: The Contractor shall be responsible for coordination of laboratory services.
1. Maintain a log recording quantities of each type of concrete placed, date and location of pour.
 2. Inform the testing laboratory of locations and dates of concrete placement and other information as required to be identified in the laboratory's test reports.
- D. Tests required because of extensive honeycombing, poor consolidation of the concrete or any suspected deficiency in the concrete will be paid for by the Contractor.
- E. Dimensional tolerances for allowable variations from dimensions or locations of concrete work, including the locations of embedded items shall be as given in ACI 301.
- F. Concrete which fails to meet strength requirements, dimensional tolerances, watertightness criteria, or is otherwise deficient due to insufficient curing, improper consolidation or physical damage shall be replaced or repaired as instructed by the Engineer at no expense to the Owner.
-

3.10 MEASUREMENT AND PAYMENT

- A. All work under this section will be measured and paid for as specified in Section 01025 (Measurement and Payment).

END OF SECTION

CONCRETE CURB AND GUTTER, AND SIDEWALK

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MILLING, CUTTING AND REPLACING PAVEMENTS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Milling, cutting and replacement of existing pavements for installation of utility lines, as specified herein, and as needed for a complete and proper installation.
- 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. Section 02221 - Trenching, Backfilling for Utilities.
 - 3. Section 02225 - Controlled Density Fill (flowable fill).
 - 4. Section 02722 - Sewers: Sanitary, Gravity.

1.2 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 for proper performance of the work of this Section.

1.3 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.

1.4 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01640.

1.5 WARRANTY

- A. All remove and replace pavement work within the South Carolina Department of Transportation (SCDOT) rights-of-way shall be warranted for two years beginning on the date of acceptance by the SCDOT.

PART 2 - PRODUCTS

2.1 CONCRETE

- A. Comply with Section 02525, using strength specified herein.

2.2 ASPHALTIC CONCRETE

- A. Use Types B and C complying with South Carolina Department of Transportation Standard Specifications, Sections 402 and 403.

MILLING, CUTTING AND REPLACING PAVEMENTS**2.3 AGGREGATE BASE COURSE WITH PRIME**

- A. Comply with applicable portions of South Carolina Department of Transportation Standard Specifications, Section 306.

PART 3 - EXECUTION**3.1 GENERAL**

- A. Remove to neat lines and dispose of as directed. Milled asphalt can remain in the ditch line.
- B. Replace with bases and pavements similar to type removed, unless otherwise indicated.

3.2 CUTTING

- A. Concrete pavement or base:
 - 1. Cut on straight and true lines, to a minimum depth of 2", using powered concrete saw.
 - 2. Shear off remaining depth with pneumatic tools.
- B. Concrete sidewalks shall be removed back to the nearest joint on each side of the crossing.
- C. Asphaltic concrete pavements: Cut to straight and true lines with powered concrete saw.

3.3 MILLING

- A. Use self-propelled milling equipment capable of maintaining accurate cut depth and slope and providing smooth cut edges.
- B. Ensure the equipment can accurately and adequately establish profile grade and control cross slope.
- C. Equip the milling machine with integral material pickup and truck discharges, if specified.
- D. Ensure the milling machine has effective means for dust control.
- E. Material size to comply with SCDOT specifications.

3.4 REPLACEMENT

- A. Concrete pavements:
 - 1. Use 4000 psi concrete.
 - 2. Replace to 6" below existing slab and undercut each edge 6" to form shelf.
 - 3. Finish surface to match existing surface.

MILLING, CUTTING AND REPLACING PAVEMENTS

B. Concrete sidewalks:

1. Replace with 3000 psi concrete.
2. Depth shall be equal to existing section removed, but not less than 4".
3. Finish surface to match existing sidewalk.

C. Flexible pavements (Ditch Line) – Secondary and Primary Roads:

1. Compact subgrade thoroughly.
2. Undercut each edge 12" to form a shelf.
3. Backfill with 10" of 3000 psi concrete (with 2" depression).
4. Top with 2" of asphaltic concrete.
5. Trench shall be maintained with compacted crusher run stone until placement of flowable fill.

D. Flexible pavements (Ditch Line) - Driveways:

1. Compact subgrade thoroughly.
2. Place 8" deep aggregate base course with prime.
3. Top with 2" of asphaltic concrete.

E. Flexible pavements (Resurfacing):

1. In some instances where utilities are installed within existing pavements, resurfacing of the entire width of the original pavement will be required.
2. Mill the existing pavement so that the new surface will tie in evenly with the remaining asphalt surface and the curb/gutter.
3. Replace pavement in ditch line as specified above.
4. Prime and resurface with 2" of asphaltic concrete.
5. Taper resurfacing to existing pavement evenly for a distance of 10 feet beyond repaired area.
6. Comply with Section 02513.

3.5 MEASUREMENT AND PAYMENT

- A. All work under this section will be measured and paid for as specified in Section 01025 (Measurement and Payment).

END OF SECTION

Section 02616
MILLING, CUTTING AND REPLACING PAVEMENTS

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PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work included: Provide storm drainage sewer as shown on the drawings, specified herein, and needed for a complete and proper installation.
- 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. Section 02221 - Trenching, Backfilling for Utilities.
 - 3. Section 02616 – Milling, Cutting, and Replacing Pavements.

1.2 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 materials in this Section are to be manufactured in the United States.

1.3 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.
- B. Product data: Within 15 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 - 1. Materials list of items proposed to be provided under this Section.
 - 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

1.4 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01640.

1.5 ORDER AND ACCEPTANCE OF WORK

- A. Engineer shall direct on what line or street the Contractor shall work and the order thereof.
 - 1. Generally, work shall commence at the lower end of a system and proceed upgrade.

1.6 PROTECTION OF OTHER UTILITIES

- A. Location:
 - 1. Approximate location of certain known underground lines is shown.
 - 2. Existing small lines not shown.

3. Locate small and other possible utility lines using electronic pipe finder, or other approved method.
4. Excavate and expose existing underground utilities ahead of trenching operations.

B. Repair or replace any damaged utility line or structure at no additional cost to Owner.

1.7 CONFLICTING UTILITIES

- A. Remove and/or relay conflicting utilities, when so directed by the Engineer, at the expense of the Owner.
- B. Where alterations to existing utilities are shown to avoid conflicts, make alterations at no cost to Owner.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Pipe shall be subject to Engineer's observation, at plant, trench or other point of delivery, for culling and rejecting pipe, independent of laboratory tests, not conforming to specifications.
- B. Rejected pipe will be marked by the Engineer and Contractor shall remove it from project site.

2.2 PIPE AND MATERIALS

- A. Reinforced concrete pipe (RCP)
 1. Pipe to comply with ASTM C-76 for Class III, Wall B.
 2. Furnish pipe with joints designed for flexible watertight gaskets.
 3. Provide integral bell and spigot joints.
 4. Tongue and groove joints may be provided in non-traffic areas.
 5. Gaskets:
 - a. O-ring rubber complying with ASTM C-443; or
 - b. Preformed plastic gaskets complying with AASHTO Designation M-198 for Type B, Flexible Plastic Gasket.

2.3 DRAINAGE STRUCTURES

- A. Use precast concrete units. Built-in-place structures shall be used only when approved by the Owner and Engineer.
- B. Precast drop inlets, catch basins, curb inlets, etc. shall be as manufactured by Tindall Concrete Products, Inc. or equal units by others.
- C. All other precast structures (i.e., headwalls, flared end sections, etc.) shall be approved by Engineer prior to installation.

D. Built-in-place structures:

1. Use concrete brick complying with ASTM C-55 for Grade N, Type II.
2. Use portland cement mortar: 1-part cement (ASTM C-150, Type I) to 3 parts clean, sharp sand.

E. Inlet Castings.

1. Provide gray iron castings, complying with ASTM A-48, Class 35B iron and AASHTO M-306.
2. Provide a minimum recycled material content of 75 consisting of post-consumer material.
3. Provide uniform quality, free from sand holes, gas holes, shrinkage, cracks and other surface defects.
4. Grind smooth and clean by shot blasting.
5. Cast or machine bearing surfaces between grates and frames with such precision to prevent rocking.
6. Casting dimensional tolerances shall be +/- 1/16" per foot.
7. All published casting weights may vary no more than +/- 5%.
8. Conduct a first article proof load test and provide the results of that proof load upon request.
 - a. Conduct in accordance with the method and procedure that is outlined in AASHTO M-306.
 - b. Test on a suitable and calibrated load testing machine. Casting shall hold a 40,000 pound proof load for one minute without experiencing any cracks or detrimental permanent deformation.
 - c. Test results for each lot of castings be maintained Foundry to for a minimum of seven years. Make available upon request.
9. Inspect in accordance with AASHTO M-306.
10. Furnish a foundry certification stating that samples representing each lot have been tested, inspected, and are in accordance with this specification.
11. Each casting shall be identifiable and show, at a minimum, the following: name of the producing foundry, country of manufacture, ASTM material designation, recycle symbol, individual part number, cast or heat date.
12. Castings shall include all lettering as shown on the specification drawings.
13. Patterns and weights shall be as indicated on the Contract Drawings.
14. All castings are to be manufactured in the United States.

2.4 MANHOLES

A. Use precast manholes:

1. Provide reinforced precast concrete ring and eccentric cone sections complying with ASTM C-478 and the following.
2. Use portland cement complying with ASTM C-150, Type II.
3. Cast ladder rungs into the units.
4. Provide tongue and groove or o-ring rubber gasketed joints.
5. Use vulcanized butyl rubber sealant with tongue and groove joints.
6. Provide flat slab tops where manhole depth is less than 4'0".

B. Steps:

1. Provide polypropylene plastic steps reinforced with 3/8" diameter steel rod, M.S.A. Industries, Inc. Model PS-K, or equal.
2. Provide steps having non-skid top surfaces, safety slope at each end, minimum width of 10" and not less than 5" projection from wall.

C. Frames and covers:

1. Provide gray iron castings, complying with ASTM A 48, Class 35B iron and AASHTO M-306.
2. Provide a minimum recycled material content of 75 consisting of post-consumer material.
3. Castings shall be of uniform quality, free from sand holes, gas holes, shrinkage, cracks and other surface defects ground smooth and clean by shot blasting.
4. Cast or machine bearing surfaces between rings and covers with such precision to prevent rocking.
5. Casting dimensional tolerances shall be +/- 1/16" per foot.
6. Conduct a first article proof load test and make the results of that proof load available upon request.
 - a. Conduct in accordance with the method and procedure outlined in AASHTO M-306.
 - b. Test casting on a suitable and calibrated load testing machine. Casting shall hold a 40,000 pound proof load for one minute without experiencing any cracks or detrimental permanent deformation.
 - c. Maintain test results for each lot of castings by the foundry for a minimum of seven years. Make available upon request.
7. Provide inspections in accordance with AASHTO M-306 and furnish results of these tests upon request.
8. Furnish a foundry certification stating that samples representing each lot have been tested, inspected, and are in accordance with this specification.
9. Each casting shall be identifiable and show, at a minimum, the following: name of the producing foundry, country of manufacturer, ASTM material designation, recycle symbol, individual part number, cast or heat date.
10. Provide frames and covers weighing not less than 285 lbs. with inside opening between 22" and 24".
11. Provide circular cover with two "pick" holes, one 1" diameter vent hole, and weighing not less than 130 lbs.
12. Covers to have the words "STORM SEWER" cast in the metal.
13. All castings are to be manufactured in the United States.
14. Provide East Jordan Iron Works, Inc. Model V-1384 or approved equal.

2.5 OTHER MATERIALS

- A.** Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

PART 3 - EXECUTION

3.1 LAYING OUT WORK

- A. Provide all materials, labor, instruments, etc. required to lay out Work.
- B. Prepare "cut sheets" under direct supervision of the Engineer.
- C. Exercise proper precaution to verify figures on the drawings prior to laying out Work. Contractor will be held responsible for any errors therein that otherwise might have been avoided.
- D. Promptly inform Engineer of errors or discrepancies found, in order that proper corrections may be made.

3.2 INSTALLATION

- A. Trench, backfill and compact for the work of this Section in strict accordance with pertinent provisions of Section 02221 of these specifications, and the following requirements:
 - 1. Maximum trench widths, depths and bedding methods.
 - a. Install all sewers complying with tables for depths of cut and class of bedding included hereinafter.
 - b. Where trenches are excavated beyond specified widths, or trench walls collapse, lay sewer complying with requirements of the next better class of bedding at no additional cost to the Owner.
 - c. Include cost of special bedding and tamping in unit prices bid for sewer.
 - 2. Reinforced concrete pipe (RCP) - Type III:

		MAXIMUM DEPTHS IN FEET			
		CLASS OF BEDDING			
Pipe Size	Max. Trench Width	D	C	B	A
		Flat Bottom Trench	Type 1 or Type 2	Special Earth Bedding	Special Concrete Bedding
12"	2'-6"	7.5	11.5	20	30
15"	2'-10"	7.0	11.0	15	30
18"	3'-2"	10.5	16.5	22.5	30
21"	3'-6"	9.0	14.0	22	30
24"	3'-10"	9.0	13.5	22	30
30"	4'-7"	10.0	14.5	20.5	30
36"	5'-5"	10.0	13.5	18	30
42"	6'-1"	11.0	14.5	19.5	30
48"	6'-6"	12.0	15.5	21	30

- B. Bedding and tamping requirements for the various classes of bedding shall comply with the following specifications:

Section 02721
STORM DRAINAGE

1. Class A Bedding - Excavate trench to one-fourth of nominal pipe diameter below pipe grade; lay pipe to grade on concrete blocking; place 2500 psi concrete around pipe for full width of trench up to one-fourth nominal pipe diameter above the invert.
 2. Class B (Type 1) Bedding - Shape bottom of trench to a level two inches below bottom of pipe; bring bed to proper level by spreading and thoroughly tamping fine granulated moist earth and sand to conform accurately to one-fourth circumference of pipe barrel; provide suitable material if not available from trench excavation; lay pipe, backfill and hand tamp in thin layers to height three-fourths of pipe diameter, using material same as bedding material; complete trench backfill complying with Section 02221.
 - a. Bring trenches excavated to excess depths to grade with stone or gravel bedding at the Contractor's expense.
 - b. Exercise care to avoid disturbing pipe grade, alignment or joints at all times.
 - c. In lieu of this class bedding, Contractor may elect to use Class B (Type 2) bedding.
 3. Class B (Type 2) Bedding - Undercut 4" below pipe barrel, full width of trench; bring to grade with crushed stone complying with SCDOT Aggregate No. 5; except for HDPE, use SCDOT Aggregate No. 57.
 - a. For RCP pipe, place stone in 6" layers to mid-point of pipe, compacting by slicing with shovel.
 4. Class C (Type 1) bedding - Shape trench bottom by hand to conform accurately to bottom one-quarter of pipe barrel circumference.
 - a. Use Class C (Type 2) bedding if unable to properly shape trench bottom.
 - b. If shaping is not performed accurately, the Contractor will be required to use Class C (Type 2) bedding.
 5. Class C (Type 2) Bedding - Undercut 4" below bottom of pipe barrel; full width of trench; bring to grade with compacted crushed stone complying with SCDOT Aggregate No. 5; lay pipe; place stone in six-inch layers to quarter-point of pipe, compacting by slicing with shovel; complete backfill complying with Section 02221.
 6. Class D Bedding:
 - a. For RCP - Excavate bell holes in flat bottomed trench; lay pipe; backfill complying with Section 02221.
- C. Pipe laying:
1. General:
 - a. Protect pipe during handling against shocks and free fall. Remove extraneous material from the pipe interior.
 - b. Lay pipe by proceeding upgrade with the spigot ends of bell-and-spigot pipe pointing in direction of flow.
 - c. Lay each pipe accurately to the indicated line and grade, aligning so the sewer has a uniform invert.
 - d. Continually clear interior of the pipe free from foreign material.

- e. Before making pipe joints, clean and dry all surfaces of the pipe to be joined.
 - f. Use gasket lubricants or joint primers as recommended by the pipe manufacturer.
 - g. Place, fit, join and adjust the joints to obtain the degree of water tightness required.
2. Reinforced concrete pipe (RCP):
- a. Select proper bedding class from preceding table as determined by pipe size and depth of cut.
 - b. Provide uniform and continuous support of pipe barrel between bell holes when utilizing Class D bedding.
 - c. Joints:
 - 1) O-ring gaskets: Lubricate and install gaskets in accordance with manufacturer's recommendations.
 - a) Align the pipe with previously installed pipe, and push the joint together. Using feeler gage, determine that gasket is properly fitted.
 - 2) Preformed plastic gaskets:
 - a) Apply primer to clean, dry joint surfaces and allow to dry.
 - b) Attach plastic strips end to end to the leading edge of the tongue, forming a continuous gasket around the entire circumference of the joint.
 - c) Align pipe with previously laid joint and push the joint together. Sufficient pressure shall be applied to assure the joint is home and slight squeeze out of the gasket materials occurs.

3.3 MANHOLES AND PRECAST STRUCTURES

- A. Set bases level so that walls will be plumb.
- B. Apply joint sealer, or ring gasket to wall section(s), set firmly in place to assure watertight joints.
- C. Form manhole invert channels directly in the concrete of the manhole base, with mortar, or by laying full section sewer pipe through the manhole and breaking out the top half after surrounding concrete has hardened. Smooth the floor of the manhole outside the channels, and slope toward the channels at not less than 1" per foot nor more than 2" per foot.
 - 1. Shape the invert channels to be smooth and semicircular, conforming to the inside of the adjacent sewer section.
 - 2. Make changes in direction of flow with a smooth curve of as large a radius as the size of the manhole will permit.
 - 3. Make changes in size and grade of channels smoothly and evenly.
 - 4. Slope invert uniformly from invert of inlet to invert of outlet.

3.4 BUILT-IN-PLACE STRUCTURES

- A. Construct bottom of all structures using 3000 psi concrete complying with Section 03300, to dimensions indicated on the Contract Drawings.
- B. Lay brick carefully embedded in mortar on bottom and ends.
- C. Plaster outside of structures with a smooth coat of cement mortar.
- D. Set frames and tops to grades indicated, mortar into place.

3.5 OBSERVATIONS

- A. General:
 - 1. Clean and prepare for observation each block or section of sewer upon completion, or at such other time as the Engineer may direct.
 - 2. Each section between manholes shall show a full circle of light when viewed from either end.
 - 3. Repair all visible leaks.
 - 4. Correct broken or cracked pipe, mislaid pipe and other defects.
 - 5. All repairs, relaying of sewers, etc. required to bring the sewers to specified status shall be made at no additional cost to the Owner.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: Provide grassing of the areas specified herein, or as indicated, for a complete and proper installation.
 - 1. All areas disturbed by the construction operation.
- 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.

1.2 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. Seed: Conform to all State laws and to all requirements and regulations of the South Carolina Department of Agriculture.
 - 1. Deliver to site each variety of seed individually packaged and tagged to show name, net weight, origin and lot number.
- C. Fertilizer: Conform to State fertilizer law.

1.3 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.

1.4 PRODUCT HANDLING

- A. Comply with pertinent provisions of Section 01610.
- B. At time of delivery, furnish the Engineer invoices of all materials received in order that application rates may be determined.
- C. Immediately remove from the site materials that do not comply with the specified requirements, and promptly replace with materials meeting the specified requirements.

PART 2 - PRODUCTS

2.1 FERTILIZER

- A. Provide a mixed fertilizer with a designation such as 10-10-10, where the first number represents the minimum percent of nitrogen required, the second number represents the minimum percent of available phosphoric acid required, and the third number represents the minimum percent of water soluble potash required in the fertilizer. For centipede

grass, use only 15-0-15 or 16-4-8 fertilizer. Fertilizer shall be delivered to the site in bags labeled with the manufacturer's guaranteed analysis.

2.2 GRASS SEED

- A. Provide grass seed which is:
 - 1. Free from noxious weed seeds, and recleaned.
 - 2. Grade A recent crop seed.
 - 3. Treated with appropriate fungicide at time of mixing.
 - 4. Delivered to the site in sealed containers with dealer's guaranteed analysis.

2.3 LIME

- A. Provide agricultural grade, standard ground limestone conforming to current "Rules, Regulations and Standards of the Fertilizer Board of Control" issued at Clemson University.
- B. Bag tags or delivery slip for bulk loads shall indicate brand or trade name, calcium carbonate equivalent, and other pertinent data to identify the lime.

2.4 WOOD CELLULOSE FIBER

- A. Provide wood chip particles manufactured particularly for discharging uniformly on the ground surface when dispersed by a hydraulic water sprayer.
- B. Material to be heat processed so as to contain no germination or growth inhibiting factors.
- C. It shall be dyed (non-toxic) an appropriate color to facilitate metering.

2.5 STRAW MULCH

- A. Provide straw or hay material.
 - 1. Straw to be stalks of wheat, rye, barley or oats.
 - 2. Hay to be timothy, peavine, alfalfa, or coastal Bermuda.
- B. Material to be reasonably dry and reasonably free from mature seed bearing stalks, roots or bulblets or Johnson Grass, Nutgrass, Wild Onion, Sandburg, Wild Garlic, Wild Mustard, Crotonaria, Pigweed, Witchweed, and Cocklebur and other noxious weeds.

2.6 EXCELSIOR FIBER MULCH

- A. To consist of 4" to 6", average length, wood fibers cut from sound, green timber.
- B. Make cut in such a manner as to provide maximum strength of fiber, but at a slight angle to natural grain of the wood.

2.7 EROSION CONTROL BLANKET

- A. Provide on areas as shown on the plans.
 - B. Provide Erosion Control Blanket S150, from North American Green, or approved equal.
-

PART 3 - EXECUTION

3.1 GENERAL

- A. Seed these areas immediately upon completion of grading or construction and clean-up operations.
 - 1. Slopes greater than four horizontal to one vertical.
 - 2. Utility rights-of-way adjacent to stream banks.

3.2 SEEDING SCHEDULES

- A. Unless otherwise provided, select the type of seeding from the tables shown below for the upper state and the lower state regions as applicable to the project. The total seed rate in pounds per acre is the sum total shown for all the varieties of seed opposite the schedule number in the seeding schedules included herein. The upper state region consists of all counties west of the counties of Aiken, Lexington, Richland, Kershaw, and Chesterfield. The lower state region consists of the above-cited counties and all counties east.

B. Adhere to the following seeding schedules:

Seeding Schedule for Permanent Vegetation Upper State				
Schedule No.	Common Name of Seed	Pounds/acre Rural¹	Pounds/acre Urban¹	Planting Dates
1	Common Bermuda (hulled) ³	23	23	March 15 to August 14
	Sericea Lespedeza (scarified) ²	50	50	
	Kentucky 31 Fescue	50	60	
	Weeping Lovegrass ²	10	10	
2	Kentucky 31 Fescue	50	80	August 15 to March 14
	Sericea Lespedeza (unhulled, unscarified) ²	80	80	
	Common Bermuda (unhulled) ³	30	30	
	Weeping Lovegrass ²	10	10	
	Reseeding Crimson Clover ⁴	20	0	
	Annual Rye Grass ⁵	5	15	
	Rye Grain	20	0	

Notes:
¹ Includes rural areas adjacent to well-developed lawns.
² Not required on shoulders, medians, etc. and on slopes under 5 feet in height.
³ Do not use Giant Bermuda seed including NK-37.
⁴ Provide an inoculant for treating reseeding crimson clover seed of a pure culture of nitrogen-fixing bacteria selected for a maximum vitality and ability to transform nitrogen from the air into soluble nitrates and deposit them into the soil. Ensure that inoculants consist of purebred cultures and are not more than one year old. Do not plant clover in medians or in rural areas adjacent to well-developed lawns.
⁵ The use of Italian Rye Grass is prohibited on all projects.

Seeding Schedule for Permanent Vegetation Lower State				
Schedule No.	Common Name of Seed	Pounds/acre Rural ¹	Pounds/acre Urban ¹	Planting Dates
3 ⁵	Common Bermuda (hulled) ³	30	30	March 1 to August 14
	Weeping Lovegrass ²	10	10	
	Sericea Lespedeza (scarified) ²	50	50	
	Weeping Lovegrass ²	10	10	
4 ⁵	Common Bermuda (unhulled) ³	40	40	August 15 to February 28
	Weeping Lovegrass ²	10	10	
	Sericea Lespedeza (unhulled, unscarified) ²	80	80	
	Reseeding Crimson Clover ⁴	20	0	
	Annual Rye Grass ⁵	5	15	
	Rye Grain	20	0	
5 ⁶	Centipede	10	10	March 1 to April 15

Notes:

¹ Includes rural areas adjacent to well-developed lawns.

² Not required on shoulders, medians, etc. and on slopes under 5 feet in height.

³ Do not use Giant Bermuda seed including NK-37.

⁴ Provide an inoculant for treating reseeding crimson clover seed of a pure culture of nitrogen-fixing bacteria selected for a maximum vitality and ability to transform nitrogen from the air into soluble nitrates and deposit them into the soil. Ensure that inoculants consist of purebred cultures and are not more

than one year old. Do not plant clover in medians or in rural areas adjacent to well-developed lawns.

⁵ Pensacola Bahia is allowed only as shown in Seeding Schedules 3 and 4 at the rate of 50 pounds per acre only when seeding pit areas that are governed by the South Carolina Mining Act. Otherwise, do not include Bahia seed in the mix.

⁶ Apply one-half of lime rates and one-half of maintenance fertilizer rates. Fertilize centipede at the application rate of 20 pounds per acre of 16-4-8 or 15-0-15 fertilizers in May and repeat in August.

⁷ The use of Italian Rye Grass is prohibited.

- C. The Contractor may include quantities of rye grain and millet in Schedule Nos. 1 and 3 to establish quick ground cover for erosion control purposes.

Seeding Schedule for Temporary Vegetation Upper and Lower State			
Schedule No.	Common Name of Seed	Pounds/acre	Planting Dates
1	Brown Top Millet	50	April 1 to August 15
2	Rye Grain	55	August 16 to March 31
	Annual Rye Grass ¹	15	
¹ The use of Italian Rye Grass is prohibited.			

3.3 GROUND PREPARATION

- A. Bring all areas to proper line, grade and cross section indicated on the plans.
- B. Repair erosion damage prior to commencing seeding operations.
- C. Loosen seedbed to minimum depth of 3".
- D. Remove all roots, clods, stones larger than 1" in any dimension, and other debris.
- E. Provide and prepare topsoil in accordance with Section 02310.
- F. Conduct soil test to determine pH factor.
 - 1. If pH is not in the range of 6.0 to 6.5, adjust.

3.4 APPLICATION OF FERTILIZER

- A. Spread uniformly over areas to be seeded at:
 - 1. Rate of 1000 lbs. per acre.
 - 2. Fertilize centipede at the application rate of 20 pounds per acre of 16-4-8 or 15-0-15.
 - 3. Use approved mechanical spreaders.
- B. Mix with soil to depth of approximately 3".

3.5 SOWING METHODS

- A. General:

1. Perform seeding during the periods and at the rates specified in the seeding schedules.
2. Do not conduct seeding work when ground is frozen or excessively wet.
3. Produce satisfactory stand of grass regardless of period of the year the work is performed.

B. Seeding, slopes less than four horizontal to one vertical:

1. Shall conform to Methods EA, WF or WCF as specified hereinafter.
2. Method EA (Emulsified Asphalt):
 - a. Sow seed not more than 24 hours after application of fertilizer.
 - b. Use mechanical seed drills on accessible areas, rotary hand seeders, power sprayers, etc. may be used on steep slopes or areas not accessible to seed drills.
 - c. Cover seed and lightly compact with cultipacker if seed drill does not.
 - d. Within 24 hours following compaction of seeded areas, uniformly apply 0.2 gallons per square yard of emulsified asphalt over the seeded area.
3. Method WF
 - a. Sow seed as specified for Method EA.
 - b. Within 24 hours following covering of seeds, uniformly apply excelsior fiber at the rate of 100 lbs. per 1000 sq.ft.
 - c. Apply material hydraulically.
 - d. Seeded areas to be lightly rolled to form a tight mat of the excelsior fibers.
4. Method WCF
 - a. Apply seed, fertilizer and wood fiber mulch using hydraulic equipment.
 - b. Equipment to have built-in agitation system with capacity to agitate, suspend and homogenously mix a slurry of the specified amount of fiber, fertilizer, seed and water.
 - c. Minimum capacity of slurry tank: 1000 gallons.
 - d. Apply fiber mulch at rate of 35 lbs. per 1000 sq.ft.
 - e. Regulate slurry mixture so that amounts and rates of application will result in uniform application of all materials at not less than the specified amounts.

- f. Apply slurry in a sweeping motion, in an arched stream, so as to fall like rain, allowing the wood fibers to build upon each other.
- g. Use color of wood pulp as guide, spraying the prepared seedbed until a uniform visible coat is obtained.

- C.
 - 1. Seeding (slopes greater than four horizontal to one vertical)
 - 2. Sow seed as specified for Method EA, unmulched.
 - 3. Cover seeded area with erosion control blanket.

3.6 SECOND APPLICATION OF FERTILIZER

- A. When plants are established and showing satisfactory growth, apply nitrogen at the rate of 1.0 lb. per 1000 sq.ft.
- B. Apply in dry form unless otherwise directed by the Engineer.
- C. Do not apply to stands of temporary grasses.

3.7 MAINTENANCE

- A. Maintain all seeded areas in satisfactory condition until final acceptance of the work.
- B. Areas not showing satisfactory evidence of germination within six weeks of the seeding date shall be immediately reseeded, fertilized and/or mulched.
- C. Repair any eroded areas.
- D. Mow as necessary to maintain healthy growth rate until final acceptance of the work.

3.8 ACCEPTANCE

- A. Permanently seeded areas will be accepted when the grass attains a height of 2".
- B. No acceptance will be made of temporary seeded areas. Rework and seed per Permanent Seeding Schedule.

3.9 MEASUREMENT AND PAYMENT

- A. Comply with the pertinent provisions of Section 01025.

END OF SECTION

EXHIBIT A-2 DRAWINGS

OAKWOOD AVENUE STORM DRAINAGE IMPROVEMENTS

FOR THE CITY OF SPARTANBURG SOUTH CAROLINA OCTOBER 2019

TOPOGRAPHIC SURVEY:
 Good & Associates, P.A. - Surveyors
 DATED: January 25, 2019

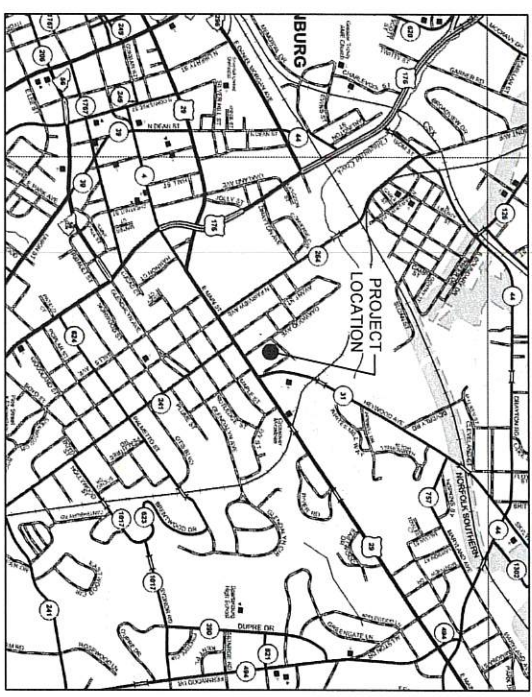
EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.

OWNER:
 City of Spartanburg, South Carolina
 Mayor: Julie White
 Council Member: Sterling Anderson
 Council Member: Alan Jenkins
 Council Member: Ruth Littlejohn
 Council Member: Jamie Fuller
 Council Member: Jerome Rice
 Council Member: Erica Brown
 City Manager: Chris Story

145 W. Broad Street
 Spartanburg, South Carolina 29306
 PHONE: (864) 596-2026

24-HOUR CONTACT:
 Jay Squires
 Streets and Stormwater Manager
 PHONE: (864) 596-2089

ENGINEER:
 Hulsey McCormick & Wallace, Inc.
 Clay M. Helms, P.E.
 101 North Pine St. Suite 410
 Spartanburg, S.C. 29302
 Phone: (864) 269-0890
 Fax: (864) 269-9030



VICINITY MAP
N.T.S.

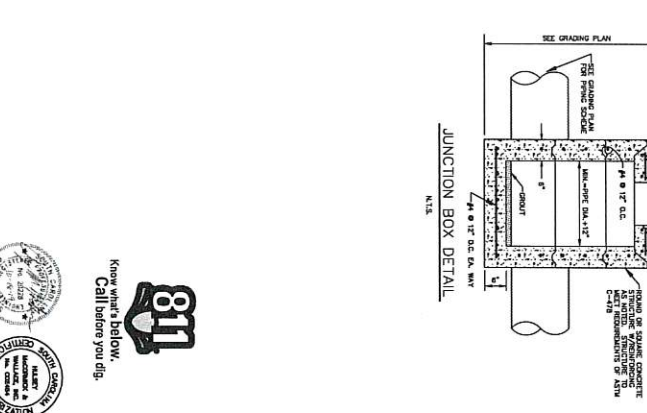
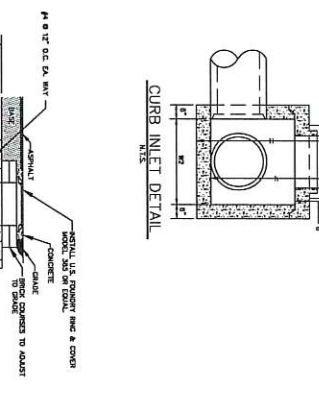
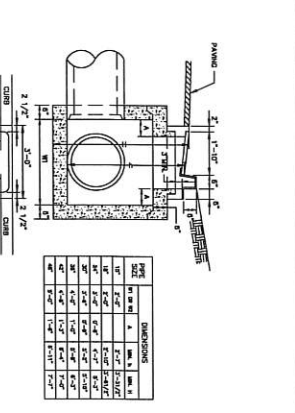
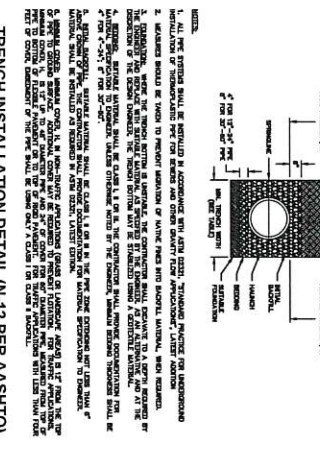
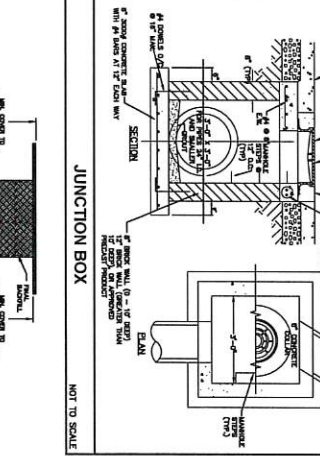
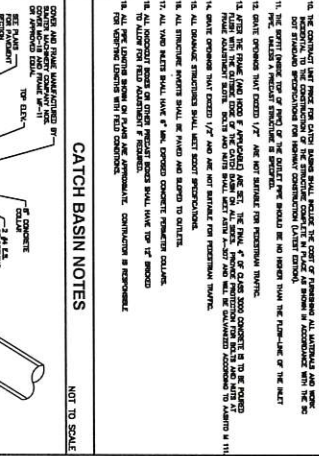
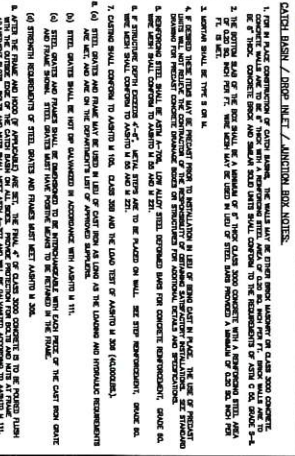
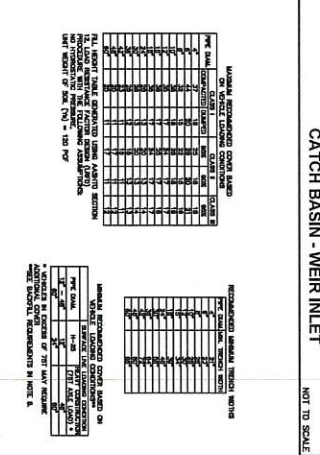
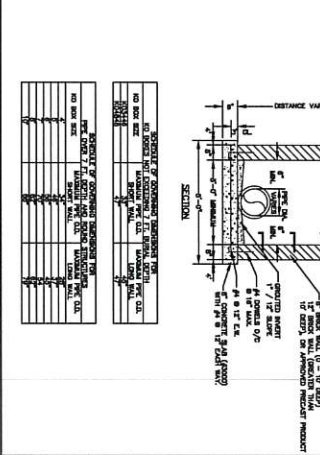
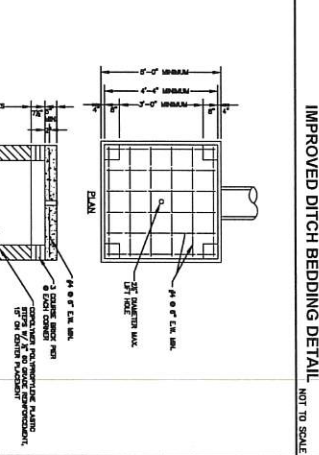
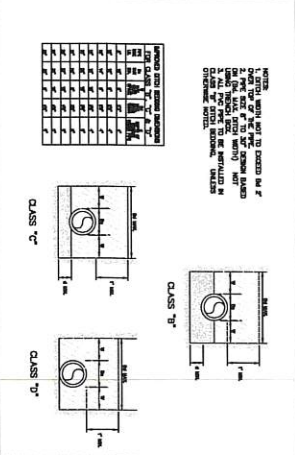
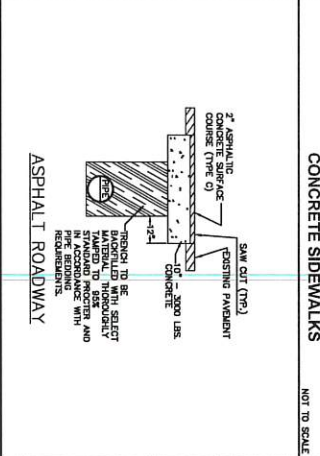
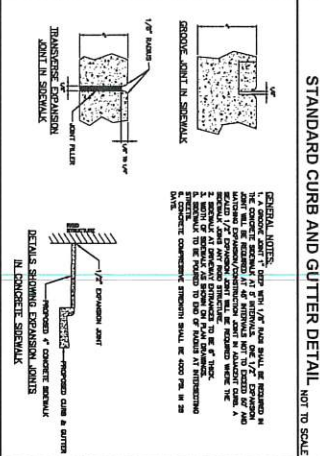
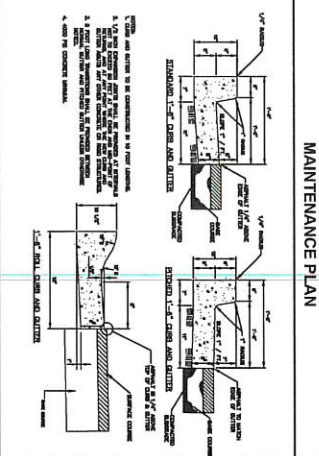
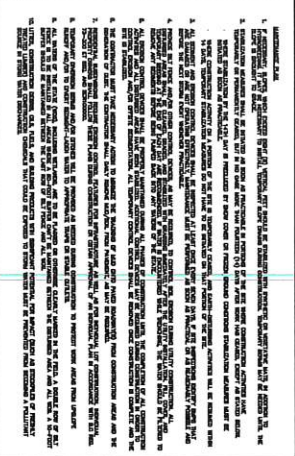


PROJECT DESCRIPTION:
 THIS PROJECT IS LOCATED EAST OF THE CITY OF SPARTANBURG, SOUTH CAROLINA ON OAKWOOD AVENUE NEAR THE INTERSECTION OF WEST MAIN STREET. THE PROJECT CONSISTS OF IMPROVING THE EXISTING STORM PIPING, JUNCTION BOXES, CATCH BASINS, ROAD SURFACE RESTORATION AND OTHER RELATED WORK REQUIRED FOR A COMPLETE INSTALLATION.

INDEX TO DRAWINGS	
TS	TITLE SHEET
1.0	STORM DRAINAGE - PLAN & PROFILE
2.0	STORM DRAINAGE DETAILS
3.0	EROSION CONTROL & SEDIMENTATION DETAILS



TS	TITLE SHEET	Hulsey McCormick & Wallace ENGINEERS • ENVIRONMENT • SCIENCE 104 Clair Drive Piedmont, SC 29673-7771 Phone: (864) 254-6876 gmw@hmcwa.com	City of SPARTANBURG south carolina	NO.	DATE	ISSUE SEQUENCE DESCRIPTION
	PROJECT NO. SPA 001 DESIGNED: CAH CHECKED: I PRINTED: I			1	15-18-19	ISSUE FOR BIDS



ISSUE SEQUENCE	
NO.	DESCRIPTION
1	15-18-19
2	
3	
4	
5	
6	
7	
8	
9	
10	

City of SPARTANBURG
south carolina

Hulsey McCormick & Wallace
ENGINEERING • ENVIRONMENT • SCIENCE

100 Clair Drive
Spartanburg, SC 29303-7771
Phone: (803) 254-4890
gmc@hulseywallace.com

STORM DRAINAGE - DETAILS

Oakwood Avenue
Stormwater Improvements
City of Spartanburg
Spartanburg, South Carolina

811
Know what's below.
Call before you dig.

PROJECT NO.: C2.0
DESIGNED: CWH
CHECKED: []
APPROVED: []



EXHIBIT A-3

Procurement & Property Division



Request for Proposal
Construction Services for Oakwood Drive Drainage Project.

Proposal No. 1920-11-19-01

(Show this number on envelope and all correspondence)

_____ submits herewith our proposal in response to the bid request
(Company Name)

number shown above in compliance with the description(s) and specifications (s) for the following:
Bidder will supply materials and labor for the following fixed price:

In compliance with the proposal invitation and subject to all conditions thereof, the undersigned agrees:

- A. This proposals is stated, is open for acceptance for a period of 60 calendar days from day of pending.
- B. To furnish any and all material and labor at the prices set forth the items unless otherwise specified, within contract and/or notice proceed.

Total Price _____

Company Name:	
Street Address:	
City, State, Zip:	
Telephone #:	
Fax #:	
Federal ID or SS #:	

SIGNATURE OF PROPOSALER'S REPRESENTATIVE

Name & Title: _____

Date: _____

BID FORM
Oakwood Avenue Storm Drainage Improvement
Spartanburg, South Carolina
23-Oct-19

Item Number	Item Description	Quantity	Units	Unit Cost	Total Cost
	Lump Sum Items				
1	Traffic control and testing	1	L.S.		
2	Mobilization	1	L.S.		
	18" Open cut				
a.	0-6 feet depth	168	L.S.		
b.	6-8 feet depth	288	L.S.		
c.	8-10 feet depth	104	L.S.		
d.	10-12 feet depth	88	L.S.		
e.	12-14 feet depth	100	L.S.		
f.	14 feet and above	85	L.S.		
3	Junction Box Manhole	4	Each		
4	Curb Inlet Catch Basin (Type) 9	2	Each		
5	Catch Basin	1	Each		
6	Additional Manhole/ Catch Basin Depth	23	L.S.		
7	Connect to existing storm sewer line	2	Each		
8	Silt Fencing	350	L.F.		
9	Type "E" Inlet Protection	4	Each		
10	Sediment tubes	2	Each		
11	Remove and Replace Pavement (including concrete patch)	1	L.S.		
12	Concrete Curb and Gutter	50	L.F.		
13	Supplemental Flowable Fill	15	C.Y.		
14	Utility conflicts	1	L.S.		
	Unit Price Items				
	Improved Trench Bedding (Washed Stone) (Allowance)	60	Ton		
	Unsuitable Soil Excavation (Allowance)	40	C.Y.		

TOTAL

Total Bid Price in Words _____

Contractor _____

Quantities under the Lump Sum Items are shown for comparison and reference purposes only. Contractor is to determine the exact quantities required for the proper construction of the project prior to bidding. Lump Sum Items will therefore not be individually measured for payment. The quantities listed under the Unit Price Items are considered an allowance if those items are required. Any quantities not used will not be paid and any excess quantities required must be approved by the City prior to the work. Unit Costs for either Lump Sum or Unit Price Items may be used in the addition or deletion of work at the Owner's discretion if site conditions vary from those expected.

EXHIBIT B INSURANCE REQUIREMENTS

CONTRACTOR INSURANCE REQUIREMENTS

Contractor shall provide, pay for and maintain in full force and effect, all insurance outlined herein with limits of liability not less than the limits of liability shown covering Contractor's activities, those of any subcontractors or anyone directly or employed by any of them, or by anyone for whose acts any of them might be liable.

Insurer Qualifications

All insurance should be provided through insurance companies authorized to do business in South Carolina with an A M Best's Rating of no less than A and shall be approved by and acceptable to Owner.

Certificates of Insurance

Prior to execution of Contract and commencing Work, Contractor's insurer shall provide to Owner a Certificate of Insurance issued by an authorized representative of its insurer certifying that the insurance as required in this Exhibit is in full force and effect. Certificates should be sent via fax or mail to the following:

Risk Coordinator
City of Spartanburg
P. O. Box 1749
Spartanburg, SC 29304
Fax:# 864-596-2365
Email: cwright@cityofspartanburg.org

The original of the Certificate is to be sent as well. The Certificate shall include a statement that the policies will not be canceled or non-renewed without 30 days advance written notice to Owner.

Primary Insurance

All insurance coverage required of the Contractor shall be primary over any in-surance or self insurance carried by City of Spartanburg.

Duration of Coverage

All required insurance coverage shall be maintained without interruption during the entire term of the Contract plus an additional 3 years for Products and Completed Operations Coverage following final acceptance of the Work by Owner.

Subcontractor's Insurance

The Contractor shall require any Subcontractor to purchase and maintain insurance of same types and limits required herein.

Waiver of Subrogation

The Contractor shall require all policies of insurance as required herein to be en-dorsed to provide that the insurance company shall waive all of its right of recovery or subrogation against Owner. The Contractor shall require similar waivers from any Sub-contractors.

Additional Insured

The Contractor's insurance policies as required herein with the exception of Workers Compensation shall be endorsed to name Owner as an additional insured.

Insurance Coverage and Limits

Workers' Compensation: The Contractor shall provide and maintain Workers Compensation insurance in each jurisdiction in which the Work is located.

Limits:

Coverage A – State Statutory Benefits	
Coverage B - Employers Liability	\$1,000,000

Specific Coverage:

- United States Longshoremen and Harbor Workers Act
- Coverage endorsement must be provided if any work is to be performed on or around navigable water.

Automobile Liability: Contractor shall provide and maintain Business Auto

Liability insurance covering bodily injury and/or property damage liability arising out of the use of any auto (including owned, hired, and non-owned autos).

Limits:

Combined Single Limit Each Accident: \$1,000,000

Commercial General Liability: Contractor shall provide and maintain in full force and effect Commercial General Liability Insurance covering all operations by or on behalf of Contractor on an occurrence basis against claims for bodily injury, personal injury, and/or property damage (including loss of use).

Limits:

Each Occurrence	\$1,000,000
General Aggregate	\$2,000,000
Products/Completed Operations	\$2,000,000

Specific Coverage:

Occurrence Form
Blanket Contractual Liability
Underground Explosion and Collapse

Umbrella/Excess Liability: Contractor shall provide and maintain Umbrella/Excess Liability Insurance on an occurrence basis with coverage as broad as underlying policies.

Limits:

Each occurrence:	\$2,000,000
Annual Aggregate:	\$2,000,000

Specific Coverage:

Blanket Contractual Liability
Follow Form Primary

Builder's Risk Insurance: If Owner provides Builder's Risk Insurance, Contractor is responsible for its pro-rata share of the \$_____ dollar deductible.

Other Insurance: Any other insurance as specified by Owner in the Contract Documents.

Changes: Exceptions to specified insurance requirements shall be submitted at time of any bid.

EXHIBIT C

South Carolina's Immigration Reform Act

Contractor agrees to verify the hiring eligibility of its employees as required under South Carolina's Eligible Immigration Reform Act, S.C. Code Ann., § 41-8-10, et seq. by either registering and participating in the Federal Work Authorization Program (E-Verify) pursuant to the Statute or employ only workers who at the time of their employment possess a valid South Carolina Driver's License or Identification Card or are eligible to obtain same or possess a valid Driver's License or Identification Card from another state deemed by the Director of the Department of Motor Vehicles to have requirements at least as strict as those in South Carolina. Contractor certifies that it will comply with the Statute in its entirety and agrees to provide the Owner with documentation to establish applicability of the Statute to the Contractor and compliance by same.

Furthermore, The City of Spartanburg will have the right to request and receive legal status verification within five working days of any person working under Contract with Contractor or Sub Contractor. Failure to comply can result in the immediate cancellation of the contract.

_____ Contractor

_____ Subcontractor

certifies that it is compliant with the South Carolina Eligible Immigration Reform Act by either registering and participating in the Federal Work Authorization Program (E-Verify) pursuant to the Statute or employing only workers who at the time of their employment possess a valid South Carolina Driver's License or Identification Card or are eligible to obtain same or possess a valid Driver's License or Identification Card from another state which has been deemed by the Director of the Department of Motor Vehicles to have requirements at least as strict as South Carolina. By the signature below, the Contractor (Subcontractor, etc.) agrees to provide the City with documentation to establish the applicability of the Statute to the Contractor and by the signature below, certifies that it is compliant with the Statute with all regards. This certification and the requirements of this Statute require that the Contractor verify the hiring eligibility of its employees before and during the Project.

Name of Contractor (Subcontractor, etc.)

By _____

Its _____

Date _____

EXHIBIT D

CERTIFICATION OF NONSEGREGATED FACILITIES

The Bidder certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control where segregated facilities are maintained. The bidder certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The Bidder agrees that a breach of this certification will be a violation of the Equal Opportunity clause in any contract resulting from acceptance of this Bid. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants, and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. The Bidder agrees that (except where he has obtained identical certification from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000.00 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certification in his files.

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

By: _____

Title: _____

Date _____, 20__

Official Address (including Zip Code).

INTENT TO PERFORM CONTRACT WITH OWN WORKFORCE

I HERBY CERTIFY THAT IT IS OUR INTENT TO PERFORM 100% OF THE WORK REQUIRED FOR THE ABOVE PROJECT. IN MAKING THIS CERTIFICATION, THE BIDDER STATES THAT THE BIDDER DOES NOT CUSTOMARILY SUBCONTRACT ELEMENTS OF THIS TYPE OF PROJECT, AND NORMALLY PERFORMS AND HAS THE CAPACITY TO PERFORM AND WILL PERFORM **ALL ELEMENTS OF THE WORK** PROJECT WITH HIS/HER OWN CURRENT WORK FORCES; AND IF THE BIDDER DOES NOT PERFORM 100% OF THE WORK REQUIRED, THE BIDDER WILL PROVIDE A LIST OF SUBCONTRACTORS

THE BIDDER AGREES TO PROVIDE ANY INFORMATION OR DOCUMENTATION TO THE CITY OF SPARTANBURG IN SUPPORT OF THE ABOVE STATEMENT.

THE UNDERSIGNED HEREBY CERTIFIES THAT HE OR SHE HAS READ THIS DOCUMENTATION AND IS AUTHORIZED TO BIND THE BIDDER TO THE COMMITMENTS HEREIN SET FORTH.

The listing of an MWBE shall constitute a representation by the bidder/responder to City of Spartanburg that such MWBE has been contacted and properly apprised of the upcoming City of Spartanburg project. Bidders/Responders are advised that the information contained herein is subject to verification by the Minority & Women Business Enterprise Program Coordinator and that submission of said information is an assertion of its accuracy. These documents are a part of this solicitation and contract. You are required to fill out this information.

I certify that the above information is true to the best of my knowledge:

Signature: _____

Title: _____

Date: _____

Subscribed and sworn to before me this _____ day of _____, 20____

Notary Signature _____

Notary Seal

THIS DOCUMENT MUST BE PROVIDED WITH THE SUBMITTAL AND SIGNED BY THE PERSON SIGNING THE SUBMITTAL