

ISSUED FOR BID

**CONTRACT DOCUMENTS
and
TECHNICAL SPECIFICATIONS**

**54-Inch Sewer Trunk Line Rehabilitation
SRF# 524-27**

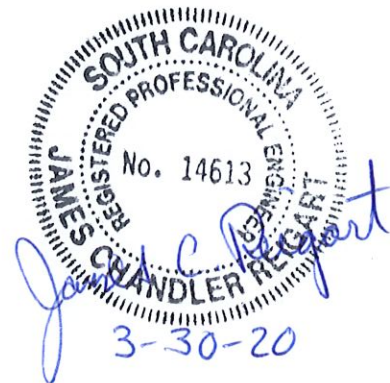
For

East Richland County Public Service District
704 Ross Road
Columbia, SC 29223
(803) 788-1570



Prepared by:
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1320 Main Street, Suite 400
Columbia, SC 29201

WKD# 20190573.00.CH
March 2020



54-INCH SEWER TRUNK LINE RREHABILITATION

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SECTION 01102**INVITATION TO BID**

PROJECT: 54-Inch Sewer Trunk Line Rehabilitation
Columbia, SC

OWNER: East Richland County Public Service District
704 Ross Road
Columbia, SC 29223

RECEIPT OF BIDS:

East Richland County Public Service District seeks separate sealed bids from qualified Contractors licensed in the State of South Carolina that are fully insured and bondable for CIPP Services. Bids will be received until **2:00 p.m., May 5th, 2020**, at the office of East Richland County Public Service District at 704 Ross Road in Columbia, SC 29223, and publicly opened and read aloud immediately thereafter.

This project is being funded by a loan from the State Revolving Fund (SRF) and bidders must comply with all applicable state and federal requirements identified in the bid documents, including Davis-Bacon and “American Iron and Steel” provisions.

PROJECT DESCRIPTION:

The services will include sewer rehabilitation by constructing new cured-in-place pipe (CIPP) within approximately 8,981 linear feet of 54-inch gravity sewer. Thirty-six (36) manholes and a force main receiving junction box at will be rehabilitated with reconstructive concrete and epoxy lining. The manholes will be fitted with new rings and covers. The project will include bypass pumping and other appurtenant activities.

DOCUMENT EXAMINATION:

Bidding documents will be on file for inspection in the office of the engineer, W.K. Dickson & Co., Inc., at 1320 Main Street, Suite 400, Columbia, SC 29201.

DOCUMENTS AVAILABLE:

Plans, Specifications, and Contract Documents are available for purchase after **April 3rd, 2020**, by going to Plan Room at www.wkdickson.com. Please note that only registered plan holders may bid as a General Contractor. The cost to purchase bid documents is published on the Plan Room site.

ELIGIBILITY:

To be eligible for consideration, bids must comply with the laws of South Carolina, all conditions of the specifications, and must be made on the form provided, enclosed in an opaque sealed envelope bearing the name and license number of the bidder and marked: **54-Inch Sewer Trunk Line Rehabilitation**. The “Statement of Bidder’s Qualifications”, as described in the Information for Bidders must be included in the sealed bid.

To qualify to submit, all bidders must attend a mandatory pre-bid conference on **April 23rd, 2020**, at 10:00 a.m. beginning at the District Headquarters, 704 Ross Road, Columbia, SC 29223.

SECURITY:

Each bid must be accompanied by a bid guarantee of five Percent (5 %) of the base bid, which may be a bid bond, issued by a bonding company licensed to do business in South Carolina that is on the approved list of the Treasury of the United States or a certified check made payable to the Owner. The successful bidder will be required to furnish Performance, and Payment Bonds each in the full amount of the contract sum, issued by a bonding company licensed to do business in South Carolina, and on the approved list of the Treasury of the United States.

OWNER'S RIGHTS:

The Owner, **East Richland County Public Service District**, reserves the right to reject any and all bids and award the job in the best interest of the Owner. No bid shall be withdrawn for a period of ninety (90) days from the opening of the bid.

SECTION 01110

INFORMATION FOR BIDDERS

RECEIPT AND OPENING OF BIDS : Bids will be received at the time and place as specified in the Advertisement for Bids, and then at said office publicly opened and read aloud.

LICENSES : The attention of Bidders is directed to the provisions of the acts for licensing of General Contractors for the State of South Carolina and all requirements of such acts which have bearing upon this work shall be deemed as part of the Specifications as if written therein in full. The showing by the Contractor of his license number shall be deemed as the Contractor's representation that he is legally qualified to enter into the prescribed Contract for any or all portions of the work included in his Bid.

All Bidders submitting a Bid shall have a currently valid "Contractor's License" for the State of South Carolina. The license number shall be shown on the bid form immediately below the signature identification and on the face of the sealed envelope containing the submitted Bid. Subcontractors who will be engaged by the General Contractor shall also hold the required license.

The successful Bidder and all subcontractors will be required to obtain any business license required prior to beginning work, if said Bidder does not have the required license.

BID SECURITY : Each Bid must be accompanied by a certified check of the Bidder, of a Bid bond duly executed by the Bidder as principal and having as surety thereon a surety company qualified to do business under the laws of the State of South Carolina and satisfactory to the Owner, in an amount not less than five percent (5%) of the Bid.

Such check or Bid Bond will be returned to all except the three (3) lowest Bidders within three (3) days after the opening of Bids, and the remaining checks or Bid Bonds will be returned promptly after the Owner and the accepted Bidder have executed the Agreement. If no award has been made within ninety (90) calendar days after the date of the opening of Bids, such check or Bid Bond will be returned upon demand of the Bidder at any time thereafter, so long as he has not been notified of the acceptance of his Bid.

GUARANTY BONDS : The Bidder to whom the contract is awarded will be required to execute the Agreement and obtain the Performance Bond and Payment Bond, each in the sum of the full amount of the Contract Price, within ten (10) calendar days from the date when Notice of Award is delivered to the Bidder.

The Bonds must be duly executed and acknowledged by the Bidder as principal and by a corporate surety company qualified to do business under the laws of the State of South Carolina

and satisfactory to the Owner as surety, for the faithful performance of the Contract and payment for labor and materials. The premiums for such bonds shall be paid by the Contractor.

Each Bond must be irrevocable, and valid for one year beyond the date of final acceptance of the project, or for two years for any building in the project.

EXECUTION OF CONTRACT: The Owner, within ten (10) calendar days of receipt of acceptable Performance Bond, Payment Bond, and Agreement signed by the party to whom the Agreement was awarded, shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the Owner not execute the Agreement within such period, the Bidder may by written notice withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the Owner.

POWER OF ATTORNEY FOR BONDS : Attorneys-in-fact who sign Bid or Performance or Payment Bonds must file with each Bond a certified and dated copy of their power of attorney.

LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT : The successful Bidder, upon his failure or refusal to execute and deliver the Contract and Bonds required within ten (10) calendar days after he has received notice of the acceptance of Bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his bid.

LAWS AND REGULATIONS : All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they will be deemed to be included as though herein written out in full.

NON-RESIDENT CONTRACTORS : A Bidder, who is a non-resident contractor, shall be aware of Section 12-9-310, Article 3, of the South Carolina Income Tax Act of 1926, as amended. This article requires the Owner entering into a contract with a non-resident taxpayer, where such contract exceeds ten thousand dollars (\$10,000), to withhold two percent (2%) of each and every payment made to the non-resident.

The funds deducted from the payment made to the non-resident taxpayer are funds deemed to be held in trust for the State of South Carolina and will be reported by the Owner to the South Carolina Tax Commission. This Deduction is in addition to the retainage deductions specified in the General Conditions. Modifications to the South Carolina Income Tax Act made January 1, 1993, allow a non-resident contractor to apply for an exemption or partial exemption from the two percent (2%) withholding rule. The non-resident contractor must complete a "Nonresident Taxpayer Request for Exemption Affidavit" (Form WH 303), "Nonresident Taxpayer Affidavit" (Form WH 302) and a subcontractors list. The South Carolina Tax Commission will make the determination and notify both contracting parties of the qualified exempt or partially exempt contracts.

All contracts for \$10,000 or more with non-residents which do not qualify for exemption will require the withholding of two percent (2%) from each payment as described above. The non-resident contractor may elect to post a surety bond with the South Carolina Tax Commission to eliminate this withholding requirement. The non-resident must complete and submit the Bond

(Form L-2074) and a “Nonresident Taxpayer Affidavit” (Form WH 302) to the South Carolina Tax Commission for review and approval. The Owner must receive verification from the South Carolina Tax Commission if this deduction is to be waived.

The above referenced forms may be obtained from the South Carolina Tax Commission located at 301 Gervais Street, Columbia, South Carolina (mailing address – P O Box 125, Columbia, South Carolina 29214).

EXAMINATION OF DRAWINGS AND SPECIFICATIONS : Each Bidder shall carefully examine Drawings and Specifications and all Addenda or other revisions thereto and thoroughly familiarize himself with the detailed requirements thereof prior to submitting a Bid. If any Bidder is in doubt as to the true meaning of any part of the Drawings, Specifications, or other Documents, or if any error, discrepancy, conflict, or omission is noted, the Bidder shall immediately contact the Owner in writing and request clarification. The Owner will clarify the intent of the Documents and/or correct such error, discrepancy, conflict, or omission, and will notify all Bidders by Addendum in cases where the extent of work or cost thereof will be appreciably affected. No allowance will be made after Bids are received for oversight by Bidder.

EXAMINATION OF SITE : Each Bidder must visit the site of proposed work and fully acquaint himself with conditions relating to construction and labor so he may fully understand facilities, difficulties, and restrictions attending execution of work under contract. By executing the Agreement, the Contractor represents that he has visited the site, familiarized himself with the local conditions under which the work is to be performed, and correlated his observations with the requirements of the Contract Documents.

INFORMATION NOT GUARANTEED : All information given on the Drawings or in the Contact Documents relating to subsurface conditions, existing structures, location of utilities, sewer inverts, or other information on existing facilities is from the best sources at present available to the Owner. All such information is furnished only for the information and convenience of the Bidders.

It is agreed and understood that the Owner does not warrant or guarantee that the conditions, pipes, or other structures encountered during construction will be the same as those indicated on the Drawings or in the Contract Documents. The Bidder must satisfy himself regarding the character, quantities, and conditions of the various materials and the work to be done.

It further is agreed and understood that the Bidder or the Contractor will not use any of the information made available to him or obtained in any examination made by in any manner as a basis or ground of claim or demand of any nature against the Owner or Engineer, arising from or by reason of any variance which may exist between the information offered and the actual materials or structures encountered during the construction work, except as may otherwise be provided for in the Contract Documents.

If any work is performed by the Contractor, or any subcontractor, prior to adequate verification of applicable data, any resultant extra cost for adjustment of work necessary to conform to

existing conditions, or damage to existing facilities, shall be assumed by the Contractor without reimbursement or compensation by the Owner.

COMPLETE WORK REQUIRED : It is the intent of the Drawings and Specifications to provide a complete and usable facility. The Contractor's work shall be based on the Drawings and Specifications, but shall include all materials and appurtenances as shown on the Drawings or described in the Specifications.

The Drawings, Specification, and all supplementary documents are essential parts of the Contract, and requirements occurring in one are as binding as though occurring in all. They are intended to be cooperative, to describe and provide for a complete work. In case of discrepancy on the Drawings, figured dimensions shall govern. In case of omissions from the Specification as to items of equipment and materials or quantities thereof, the Drawing shall govern.

It shall be the responsibility of the Bidder to call to the attention of the Engineer obvious omissions of such magnitude as to affect the strength, adequacy, function, completeness, or cost of any part of the work in ample time for amendment by Addendum prior to bid opening date.

ADDENDA AND INTERPRETATIONS : No interpretation of the meaning of the Drawings, Specifications, or other Bid Documents will be made orally to any Bidder by the Engineer prior to award of the contract.

Every request for such interpretation must be emailed, with the subject of "QUESTIONS: 54-INCH SEWER TRUNK LINE REHABILITATION" to James C. Reigart, PE, at jreigart@wkdickson.com. To be given consideration, such request must be received at least seven (7) days prior to the date fixed for the opening of Bids. Any and all such interpretations and any supplemental instructions will be made in the form of written Addenda to the Specifications which, if issued, will be emailed to the attendees of the mandatory pre-bid meeting (at the respective addresses furnished for such purposes), not later than three (3) days prior to the date fixed for the opening of Bids. Failure of any bidder to receive any such Addendum or interpretation shall not relieve such Bidder from any obligation under his Bid as submitted. All Addenda so issued shall become part of the Contract Documents.

ABILITY AND EXPERIENCE OF BIDDER : It is the purpose of the Owner not to award this Contract to any Bidder who does not furnish satisfactory evidence that he has the experience of successfully completing projects of this type and magnitude and that he has sufficient capital, equipment, plant, and personnel to enable him to prosecute the work successfully and to complete it in the time named.

The Owner may make such investigations as it deems necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the Owner, under oath if so required, all such information and data for this purpose as the Owner may request.

BIDS AND QUALIFICATIONS : Before a Bid is considered for award, the Bidder may be requested by the Engineer to submit a statement of facts in detail as to his previous experience in

performing similar or comparable work, and of his business and technical organization and financial resources and plant available to be used in performing the contemplated work.

TIME FOR COMPLETION : The Bidder must agree to commence work within 15 days of the notice to proceed stipulated in the Agreement. The Bidder also must agree to fully complete the project within **240** consecutive calendar days.

LIQUIDATED DAMAGES : The Bidder must agree to pay as liquidated damages the amount set forth in the Agreement for each consecutive calendar day that the work is incomplete after the agreed upon date of completion.

WITHDRAWAL OF BIDS : Any Bidder may withdraw his Bid, either personally or by written request, at any time prior to the scheduled opening of Bids or authorized postponement thereof. Otherwise, Bidder may not withdraw his Bid for a period of ninety (90) calendar days after the date set for the opening thereof, and all Bids shall be subject to acceptance by the Owner during this period.

IRREGULAR BIDS : A Bid will be considered irregular and may be rejected for any one of the following reasons:

1. If the Bid is on a form other than that furnished by the Owner, or if the form is altered or any part detached.
2. If there are unauthorized additions, conditional or alternate bids, or irregularities of any kind which tend to make the Bid incomplete, indefinite, or ambiguous in its meaning.
3. If the Bidder adds any provisions reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
4. If the Bid does not contain a price for each item listed.
5. If the Bid does not contain the aggregate of the Bid, obtained by adding the extended amounts of the various items, if applicable.
6. If the Bid contains obviously unbalanced bid prices.
7. If there is reason to believe that any Bidder is interested in more than one Bid on the same project or that there has been collusion among the Bidders.

DISQUALIFICATION OF BIDDERS : More than one Bid from an individual, a firm or partnership, a corporation or any association, under the same or different names, will not be considered. Reasonable grounds for believing that any Bidder is interested as a principal in more than one Bid for the work contemplated will cause the rejection of all Bids in which such Bidder is believed to be interested. Any or all Bids will be rejected if there is reason to believe that collusion exists among the Bidders. Contracts will be awarded only to responsible Bidders

capable of performing the class of work contemplated within the time specified, and having sufficient resources and finances to carry on the work properly.

ACCEPTANCE OR REJECTION OF BIDS : The Owner reserves the right to reject any and all Bids when such rejection is in the interest of the Owner; to reject the Bid of a Bidder who has previously failed to perform properly or complete on time contracts of a similar nature; and to reject the Bid of a Bidder who is not, in the opinion of the Engineer, in a position to perform the Contract. The Owner reserves the right to waive any informalities and technicalities in bidding. The Owner may also accept or reject any of the alternates that may be set forth on the Bid.

METHOD OF AWARD : The Contract will be awarded to the responsive, responsible Bidder submitting the lowest Bid complying with the conditions of the Contract Documents. Award will be made on the basis of the prices given in the Base Bid or a combination of the Base Bid and Alternate, at the Owners opinion. The Bidder to whom the award is made will be notified. The Owner reserves the right to reject any and all Bids and to waive any minor irregularities in Bids received whenever such rejection or waiver is in the Owner's interest.

A responsive Bidder shall be one who submits a Bid in the proper form without qualifications or intent other than as called for in the Contract Documents and who binds himself or herself on behalf of the Bid to the Owner with the proper Bid Bond completed and attached, and who properly completes all forms required to be completed and submitted at the time of the Bidding. The Bidder shall furnish all data required by these Contract Documents. Failure to do so may result in the Bid being declared non-responsive.

A responsible Bidder shall be one who can fulfill the following requirements:

- a. The Bidder shall maintain a permanent place of business. This requirement applies to the Bidder where the Bidder is a division of a corporation, or where the Bidder is 50 percent or more owned by a person, corporation or firm.
- b. The Bidder shall demonstrate adequate construction experience and sufficient equipment resources to properly perform the work under and in conformance with the Contract Documents. This evaluation will be based upon a list of completed or active projects and a list of construction equipment available to the Bidder to perform the work. The Owner may make such investigations as deemed necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may reasonably request. The Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the Project contemplated therein.
- c. The Bidder shall demonstrate financial resources of sufficient strength to meet the obligations incident to the performance of the work covered by these Contract Documents. The ability to obtain the required Performance and Payment bonds will not alone demonstrate adequate financial capability.

Acceptance of the Bidder's documentation and substantiation or Contract Award by the Owner does not relieve the Bidder of liability for non-performance covered in the Contract Documents, nor will the Bidder be exempted from any other legal recourse the Owner may elect to pursue.

PRE-CONSTRUCTION CONFERENCE : After the Contractor signs the AGREEMENT, and submits all required documents therefore, and prior to issuance of the NOTICE TO PROCEED, a pre-construction conference will be held with representatives of the Owner, Contractor, and the Engineer. At this conference, the construction schedule and inspection schedule will be approved. Any problems with the Plans & Specifications will be resolved, and the Project Staff of the Owner and the Contractor will receive approval.

NOTICE TO PROCEED : The Notice to Proceed will be issued within ten (10) calendar 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 ten (10) calendar day period or within the period mutually agreed upon, the Contractor may terminate the Agreement without further liability on the part of either party.

ESTIMATED QUANTITIES : Bidders must satisfy themselves of the accuracy of the estimated quantities in the Bid Schedule by examining the site and reviewing the Specifications, Drawings, and Addenda. After Bids have been submitted, the Bidder shall not assert that there was a misunderstanding concerning the quantities of work or of the nature of the work to be done.

COMPARISON OF BIDS : Bids will be compared on the basis of the prices stated in the Bid. If there is a discrepancy between the unit price and/or the computed total amount, the unit price shall govern.

EASEMENTS : The Owner has obtained, or will obtain, permanent easements and temporary construction easements through private property. The temporary construction easements entitle the Contractor to the occupancy and use of the designated area near or adjacent to the work for purposes related to the work. The Contractor will not encroach on any property unless it has been established that easements have been obtained. On all other land, the Contractor has no rights unless he obtains permission from the proper parties.

WORK IN STATE AND COUNTY RIGHT-OF-WAYS : The Owner will obtain the necessary easements and permits for construction across both City and State Highway rights-of-way. The Contractor shall abide by all rules, regulations, and requirements of these agencies in regard to construction under this contract, including the giving of notices, provisions for inspections, and employment of such methods of construction as may be required. Wherever these rules, regulations and requirements govern, these Specifications shall be modified to such extent as necessary to conform with the said rules, regulations, and requirements. Wherever additional costs are incurred due to requirements of these agencies, such additional periods of maintenance, special features of construction, etc., all such cost shall be included in the prices bid. No additional compensation will be allowed for such costs after award of the Contract.

ITEMS AND INDETERMINATE ITEMS : The work to be done under this Contract has been divided into items so that the actual quantity of work executed under each item may be paid for at the unit price bid for the particular item even though such quantity is greater or less than the estimated quantity stated in the Bid.

RIGHT TO INCREASE OR DECREASE THE AMOUNT OF WORK : The work comprises approximately the quantities shown in the bid form which will be used as a basis for comparison of Bids and not for final estimate. The Owner does not, by expression or by implication, agree that the actual amount of work shall correspond with the estimated quantities.

The Owner reserves the right to alter the quantities of work to be performed or to extend or shorten the improvements at any time when and as found necessary, and the Contractor shall perform the work as altered, increased or decreased. Payment for such increased or decreased quantity will be in accordance with General Conditions subsection 7.12 entitled Payment for Extra Work. No allowance will be made for any change in anticipated profits nor shall such changes be considered as waiving or invalidating any conditions or provisions of the Contract and Bond.

FORM OF BID : All Bids must be submitted on the blank bid form provided therefore and must state the total price for which the Bidder will complete the work in accordance with the terms of the Contract Documents. All blank spaces must be filled in and there shall be no interpretations, alterations, or erasures.

The Bid must be signed manually by a principal or an officer duly authorized to make contracts. The Bidder's legal name must be fully stated and the name and title of the person signing must be typed below his signature.

SUBMITTING BIDS : Each Bid must be submitted on the prescribed bid form. All blank spaces for bid prices must be filled in, in ink or typewritten, and the Bid must be fully completed and executed when submitted. Only one copy of the bid form is required.

Bidders are cautioned that it is the responsibility of each individual Bidder to assure that his Bid is in the possession of the responsible official or his designated alternate prior to the stated time and at the stated place of the bid opening. Owner is not responsible for Bids delayed by mail or delivery services of any nature.

CONFLICT OR INCONSISTENCIES : Bidders are also cautioned that if more than one set of conditions are included in the contract, then in case of a conflict between any of the conditions the most strict will apply. See section 1.3.

BID SUBMISSION REQUIREMENTS : Bids shall be submitted at the time and place indicated in the Advertisement of Invitation to Bid and shall be enclosed in an opaque sealed envelope, marked with the project title (and if applicable, the designated portion of the Project for which the Bid is submitted) and name, address of the Bidder and accompanied by the bid bond and other required documents. If the bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with notation "**Bid Enclosed**" on the face of it.

STATEMENT OF BIDDER'S QUALIFICATIONS: To be filled in by Contractor and submitted with bid. 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 desired. Attach all additional sheets to these Contract Documents. Failure to completely answer and satisfy the requirements of the **Statement of Bidder's Qualifications** shall result in the disqualification of the Bidder.

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 of work performed by your company:
8. Have you ever failed to complete any work awarded to you?
If so, where and why?

9. Have you ever defaulted on a contract?
If so, where and why?

10. List the most important projects recently completed by your company, stating the approximate cost for each, and the month and year completed:

11. Experience in construction work similar in importance to this project:

12. Background and experience of the principal members of your organization, including officers:

13. The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the local public agency in verification of the recitals comprising this Statement of Bidder's Qualifications.

14. Experience-related Submittals
 - A. In order to establish minimum product quality and Installer capability, the following minimum requirements shall be met. The purpose for these submittals is to allow ERCPSD the opportunity to conduct a complete, thorough and objective evaluation of proposed CIPP products and the Installing Contractor to determine if the submitted products and Installer meet all experience, quality and utility standards required by the specification.

 - B. CIPP System Manufacturer: The cured-in-place (CIPP) system must have a minimum proven performance record of 500,000 linear feet installed of the exact name-brand product bid in the United States, with a minimum of 40,000 linear feet in diameters 24-inch or larger. In addition, a minimum of 10,000 linear feet of 48-inch diameter or larger, of the exact name brand product must have been installed in the United States. Documentation shall be submitted with the bid. Failure to submit proper certification shall result in the disqualification of the Bidder.

 - C. Contractor/Installer Experience: The installing Contractor for the cured-in-place reconstruction of sewers must have a minimum of three (3) years experience using the **exact named product proposed** and, have installed at least 300,000 linear feet of the exact named proposed product including at least 20,000 feet of 24-inch diameter (or larger) cured-in-place product, and a minimum of 10,000 linear feet of 48-inch diameter or larger of the exact name brand product must have been installed in the United States. In addition, the Contractor must have installed a minimum of three over-the-hole wet-out installations within the last three years. Documentation along with contact names and telephone numbers shall be submitted as part of the bid package. Failure to submit proper certification shall result in the disqualification of the Bidder.

- D. The resin impregnation (Wet-out) facility utilized by the Installing Contractor must have been operated and maintained for a minimum of three (3) years prior to the Bid date of this contract. No out-sourcing of the wet-out phase of CIPP installed under this contract will be allowed. The use of contract employees for the purposes of resin wet-out or installation of CIPP shall not be acceptable under this contract.
- E. On-Site Qualifying Superintendent: The Qualifying Superintendent must have a minimum of ten (10) years experience with cured-in-place pipe products. In addition, the Qualifying Superintendent must have supervised jobs in which at least 50,000 feet of pipe has been reconstructed using the exact named product proposed including a minimum of 10,000 feet of 48-inch diameter (or larger) CIPP product. Additionally, as the use of an "Over-the-Hole" (OTH) wet-out and installation will be required, the Qualifying Superintendent shall document at least 3 successful OTH installations in diameters 48-inches and larger.
- F. The Contractor shall submit information to document the Superintendent's experience as part of the bid package. The Superintendent for this contract shall be on-site during all phases of the work involving any pre and post-installation video inspection, sewer cleaning or insertion and processing of the CIPP as well as any associated excavation services unless otherwise authorized by the Sanitation District.
- G. The Contractor is encouraged to qualify more than one Superintendent under this requirement.
- H. ERCPSD reserves the right to assure himself that the Contractor possesses the experience, ability and capacity to perform work under this contract. ERCPSD may request other pertinent information from the Contractor such as customer references, wet-out logs, production sheets and other materials deemed necessary. Failure to comply with such requests in a timely manner may result in disqualification.
- I. Manhole Rehabilitation Specialty Subcontractor and Qualifying Superintendent Experience:
 - 1. The Specialty Subcontractor performing the work shall be fully qualified, experienced and equipped to complete this work expeditiously and in a satisfactory manner. The Specialty Subcontractor shall be an approved installer as certified and licensed by the manufacturer. The Contractor must certify that the proposed product/process to be used is the exact system for which any and all submittals and certifications were made. No substitutions will be allowed, and misrepresentations or omissions may be grounds for Contract termination with the Contractor waiving any and all claims against the Owner for work performed or costs incurred.
 - 2. The proposed Qualifying superintendent of the Specialty Subcontractor for the work under this Contract shall have successfully installed a cementitious manhole lining product in a minimum of 500 manholes/structures as documented by verifiable Owner references. The Owner must approve both the Specialty

Subcontractor and the Qualifying Superintendent to perform this work. The approved superintendent shall be on-site during the execution of all lining operations including prep work and subsurface manhole rehabilitation. The lining installation and/or subsurface manhole rehabilitation shall cease whenever the superintendent is not on-site.

STATEMENT OF EQUIPMENT : Show machinery and other equipment available to Contractor for prosecuting the work included in Contract. (To be filled in by Contractor and submitted with bid.)

<i>Available Machinery and Other Equipment Kind-Size-Capacity</i>	<i>Location</i>	<i>Ownership</i>	<i>Date Proposed To Be Placed On Work</i>
---------------------------------------------------------------------------	-----------------	------------------	---------------------------------------------------

The above is a true statement of the equipment available to the undersigned Bidder for prosecuting the Work included in the Contract. Where it is shown that the equipment is not owned by the Bidder, arrangements have been made with the owners to furnish the equipment.

Signed: _____

Title: _____

Dated this _____ day of _____ 20____

Name of Bidder

By: _____

Title: _____

STATE OF SOUTH CAROLINA
COUNTY OF RICHLAND

_____ being duly sworn deposes and says that he is _____
_____ of _____ and that the answers to the
foregoing questions and all statements therein contained are true and correct. Subscribed and
sworn to before me this _____ day of _____, 20____.

Notary Public

My Commission Expires: _____ (SEAL)

(End Section 01110)

SECTION 01140

BID FORM (UNIT PRICE)

TO: East Richland County Public Service District
704 Ross Road
Columbia, SC 29223

FROM: _____

of the City of _____, County of _____, and
State of _____, hereinafter called "Bidder".

PROJECT : **54-Inch Sewer Trunk Line Rehabilitation**
WKD Project No. 20190573.00.CH / SRF#524-27

Gentlemen:

The Bidder, in compliance with your Advertisement for Bids for the construction of above-referenced project, having examined the Specifications with related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project, including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the project in accordance with the Contract Documents, within the time set forth therein, and the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part.

The Bidder declares that he has carefully examined the site of the proposed Work and fully informed and satisfied himself as to the conditions there existing, the character and requirements of the proposed Work, and the difficulties attendant upon its execution, and that he has carefully read and examined the Drawings, and the Specifications and other Contract Documents therein referred to, and knows and understands the terms and provisions thereof.

Bidder understands that information relative to existing structures, apparent and latent conditions, and natural phenomena, as furnished to him on the Drawings, in the Contract Documents, or by the Owner or Engineer, carries no guarantee expressed or implied as to its completeness or accuracy, and he has made due allowance therefore.

TIME FOR COMPLETION AND LIQUIDATED DAMAGES : Bidder hereby agrees to commence work under this contract within 15 days of receipt of the Notice to Proceed and to fully complete the project within 240 consecutive calendar days thereafter.

Bidder also agrees to pay \$1,200/day as liquidated damages for each consecutive calendar day thereafter as hereinafter provided in the General Conditions.

ADDENDA : Bidder acknowledges receipt of the following Addenda:

Addendum No. _____ Date _____
 Addendum No. _____ Date _____

Bid Schedule

Item	Description	Qty	Unit	Unit Price	Extended Price
	Sanitary Sewer Rehabilitation				
1.	Normal Cleaning of 54-inch Sewers	8,981	LF	\$	\$
2.	"Heavy Cleaning" of 54-inch Sewers, if needed	900	LF	\$	\$
3.	Pre-Installation CCTV	8,981	LF	\$	\$
4.	Install 54-inch Cured-in-Place Pipe (8,981 LF)				
	a. 27.0 mm Minimum Thickness (Finished & Installed)	1,100	LF	\$	\$
	b. 28.5 mm Minimum Thickness (Finished & Installed)	811	LF	\$	\$
	c. 31.5 mm Minimum Thickness (Finished & Installed)	2,942	LF	\$	\$
	d. 36.0 mm Minimum Thickness (Finished & Installed)	2,430	LF	\$	\$
	e. 39.0 mm Minimum Thickness (Finished & Installed)	1,698	LF	\$	\$
5.	Post Installation CCTV	8,981	LF	\$	\$
6.	Manhole Rehabilitation (Level C)				
	a. 4' diameter	370	VF	\$	\$
	b. 7' diameter	63	VF	\$	\$
	c. 8' diameter	40	VF	\$	\$
	d. 10' diameter	40	VF	\$	\$
	e. Junction Box @ STA 0+00 (Approximately 568 SF)	1	LS	\$	\$
7.	Reinstate Sewer Laterals				
	a. 6-inch SS @ STA 5+94	1	LS	\$	\$
	b. 6-inch SS @ STA 6+34	1	LS	\$	\$
	c. 6-inch SS @ STA 8+00	1	LS	\$	\$
	d. 6-inch SS @ STA 9+60	1	LS	\$	\$
	e. 6-inch SS @ STA 10+61	1	LS	\$	\$
	f. 6-inch SS @ STA 11+76	1	LS	\$	\$
	g. 6-inch SS @ STA 13+44	1	LS	\$	\$
	h. 6-inch SS @ STA 14+05	1	LS	\$	\$

	i. 6-inch SS @ STA 18+79	1	LS	\$	\$
	j. 6-inch SS @ STA 19+40	1	LS	\$	\$
	k. 6-inch SS @ STA 20+41	1	LS	\$	\$
	l. 6-inch SS @ STA 22+62	1	LS	\$	\$
	m. 6-inch SS @ STA 23+62	1	LS	\$	\$

Additional Items					
8.	Bypass Pumping	1	LS	\$	\$
9.	Construction Limit Fence*	1,000	LF	\$	\$
10.	Construction Entrances	1	EA	\$	\$
11.	Saw-cut pavement, temporary asphalt for bypass piping and permanent replacement	95	LF	\$	\$
12.	Turf Protection Matting*	2,500	SF	\$	\$
13.	Traffic Control	1	LS	\$	\$
14.	Sediment and Erosion Control	1	LS	\$	\$
15.	Grassing	1	LS	\$	\$
16.	Replacement/Repairs to Construction Easement Areas by Forest Lake Club	CASH ALLOWANCE			\$15,000.00
17.	CIPP Acceptance Testing	CASH ALLOWANCE			\$10,000.00

*Extra Work if Ordered by the Engineer

TOTAL BASE BID, ITEMS 1 THROUGH 17 INCLUSIVE, THE AMOUNT OF
 _____ (\$ _____)

The Bid Form contains certain unit price items entitled “Extra Work if Ordered by the Engineer”. In each such item the estimated quantity is based upon the typical amount of extra work encountered on this type project. The stated quantities are not guaranteed but are included in order to determine in advance of construction the actual low bidder. No work included in such items will be authorized for without advance authorization by the Engineer.

Additions to work and deletions from work shall be paid in accordance with these unit prices.

The above unit prices shall include all labor, materials, dewatering, shoring, removal, overhead, profit, insurance, taxes, fees, etc., to cover the finished work of the several kinds called for.

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

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

Upon receipt of written notice of the acceptance of this Bid, Bidder will execute the formal Agreement attached within 10 days, and deliver Surety bonds as required by the General Conditions. The bid security attached in the sum of _____ (\$_____) is to become the property of the Owner in the event the Agreement and Bond are not executed within the time above set forth as liquidated damages for the delay and additional expense to the Owner caused thereby.

The undersigned declares that the person or persons signing this proposal is fully authorized to sign the proposal on behalf of the firm listed and to fully bind the firm listed to all the conditions and provisions thereof.

It is agreed that no person or persons or company other than the firm listed below or as otherwise indicated hereinafter has any interest whatsoever in this proposal or the contract that may be entered into as a result thereof, and that in all respects the proposal is legal and fair, submitted in good faith, without collusion or fraud.

Respectfully Submitted:

Contractor

(SEAL)
(Corporations)

By: _____

Title

Address

SC General Contractor's License No. _____

(End Section 01140)

SECTION 01160

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____
_____ as Principal, and _____ as Surety, are hereby held
and firmly bound unto the East Richland County Public Service District as OWNER in the penal
sum of 5% (five percent) of BID for the payment of which, well and truly to be made, we hereby
jointly and severally bind ourselves, successors and assigns. Signed, this _____ day of
_____, 2020.

The Condition of the above obligation is such that whereas the Principal has submitted to
the East Richland County Public Service District a certain BID, attached hereto made a part
hereof to enter into a contract in writing, for the:

54-Inch Sewer Trunk Line Rehabilitation
SRF# 524-27

Documents dated March 2020, by the Owner.

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

The Surety, for value received, hereby stipulated and agrees that the obligations of said
Surety and its BOND shall be in no way impaired or affected by an extension of the time within
which the OWNER may accept such BID; and said Surety does hereby waive notice of any such
extension.

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

_____(LS)
(Principal)

Surety

By:_____

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

SECTION 01210

AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 20____, by and between

**East Richland County Public Service District
704 Ross Road
Columbia, SC 29223**

acting herein through its _____
(Title of Authorized Official)

hereinafter called "OWNER", and _____
(Name of Contractor)

doing business as an _____
(an Individual), (a Partnership) (an LLC) or (a Corporation)

of the City of _____ County of _____

and State of _____ hereinafter called "Contractor."

WITNESSETH : That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR hereby agrees with the OWNER to commence and complete the construction described as follows: **54-Inch Sewer Trunk Line Rehabilitation** hereinafter called the PROJECT – **SRF# 524-27**.
2. The CONTRACTOR will furnish all of the materials, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the PROJECT described herein.
3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within 15 calendar days after the date of the NOTICE TO PROCEED and will fully complete the PROJECT within **240** consecutive calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS. The CONTRACTOR further agrees to pay, as liquidated damages, the sum of **\$1,200** for each consecutive calendar day thereafter as hereinafter provided in the GENERAL CONDITIONS.

4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of: _____
 _____ (\$ _____) shown in the Bid Schedule.

5. The term "CONTRACT DOCUMENTS" means and includes the following:
 - A. Advertisement for Bids
 - B. Information for Bidders Including
 - C. Bid
 - D. Bid Bond
 - E. Agreement
 - F. General Conditions
 - G. Supplemental Conditions
 - H. Performance Bond
 - I. Payment Bond
 - J. Notice of Award
 - K. Notice to Proceed
 - L. Change Orders
 - M. Specifications prepared by East Richland Public Service District

 - N. Addenda
 - No. _____ Dated _____
 - No. _____ Dated _____
 - No. _____ Dated _____
 - No. _____ Dated _____

6. The OWNER agrees to pay the CONTRACTOR in the manner and at such time as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.

7. The Agreement shall be binding on all parties hereto and their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized officials, this Agreement in three (3) counterparts, each of which shall be deemed an original, in the year and day first above written.

East Richland County Public Service District
(owner)

(SEAL)

By: _____
Larry Brazell

Executive Director
(Title of Authorized Official)

ATTEST:

(Witness)

(Witness)

(Contractor)

By: _____
(Name)

(Title)

ATTEST:

(Address)

(Witness)

(Witness)

(End of Section 01210)

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SECTION 01211

**CERTIFICATE OF ACKNOWLEDGMENT OF CONTRACTOR IF A CORPORATION
FOR AGREEMENT**

STATE OF _____)
) SS:
COUNTY OF _____)

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

that he resides at _____
and is the _____ of _____
(Title of Officer) (Name of Corporation)

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

By: _____
(Name)

(Title)

Notary Public (Seal)

My Commission expires: _____

(End of Section 01211)

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SECTION 01212

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____,

hereinafter called Principal (Corporation, Partnership, LLC or Individual) and

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

East Richland County Public Service District

(Name of Owner)

704 Ross Road, Columbia, SC 29223

(Address of Owner)

hereinafter called OWNER, in the penal sum of: _____

_____ (\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents. THE CONDITION OF THIS OBLIGATION is such that whereas the Principal entered into a certain contract with the OWNER for, **54-Inch Sewer Trunk Line Rehabilitation**, SRF# 524-27, dated the ____ day of _____, 2020 which is hereby incorporated by reference.

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements, of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation of time, alteration, or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS. PROVIDED, FURTHER, that no final settlement between the

OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder whose claim may be unsatisfied.

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

ATTEST: _____
Principal

(Principal) Secretary (SEAL)

By: _____

Address

Witness as to Principal

Address

WITNESS: _____

Surety

(SEAL)

By: _____

Attorney-in-Fact

Address

Witness as to Surety

Address

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is a Partnership, all partners should execute BOND.

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

CERTIFICATE OF ACKNOWLEDGEMENT OF CONTRACTOR
IF A CORPORATION

FOR CONTRACT BONDS

STATE OF _____)

COUNTY OF _____)

ON THIS ____ day of _____, 20____, before me

personally came _____, to me known, who

being by me duly sworn, did depose and say as follows:

That he resides at _____

and is the _____ of _____
(Title of Officer) (Name of Corporation)

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

By: _____

(Name) (Title)

Notary Public (Seal)

My commission expires: _____

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SECTION 01214

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

_____, hereinafter called
(an Individual, (a Partnership), or (a Corporation)

Principal, and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

East Richland County Public Service District
(Name of Owner)

704 Ross Road, Columbia, SC 29223
(Address of Owner)

Hereinafter called OWNER, in the penal sum of: _____
(\$ _____)

in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner for, **54-Inch Sewer Trunk Line Rehabilitation**, SRF# 524-27, dated the _____ day of _____, 2020, which is hereby incorporated by reference.

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials and/or equipment for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

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

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

ATTEST:

Principal

(Principal) Secretary (SEAL)

By: _____

Address

Witness as to Principal

Address

WITNESS:

Surety

(SEAL)

By: _____
Attorney-in-Fact

Address

Witness as to Surety

Address

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

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

CERTIFICATE OF ACKNOWLEDGEMENT OF CONTRACTOR
IF A CORPORATION

FOR CONTRACT BONDS

STATE OF _____)

COUNTY OF _____)

ON THIS _____ day of _____, 20____, before me

personally came _____, to me known, who
being by me duly sworn, did depose and say as follows:

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

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

_____ By: _____

(Name and Title)

Notary Public (Seal)

My commission expires: _____

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SECTION 01215

CERTIFICATE OF ACKNOWLEDGMENT OF CONTRACTOR
IF A CORPORATION

FOR CONTRACT BONDS

STATE OF _____)
) SS:
COUNTY OF _____)

ON THIS ____ day of _____, 20____, before me personally came
_____, to me known, who being by me duly sworn,

did depose and say as follows:

That he resides at _____

and is the _____ of _____
(Title of Officer) (Name of Corporation)

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

By: _____
(Name)

(Title)

Notary Public (SEAL)

My Commission expires: _____

CERTIFICATION

Any person signing documents under section 01215 shall also make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Date of Signature_____

Signature_____

Title_____

Name of Firm _____

Address_____

Telephone No._____

SECTION 01216

NOTICE OF AWARD

TO: (Contractor)

**PROJECT DESCRIPTION: East Richland County Public Service District
54-Inch Sewer Trunk Line Rehabilitation
SRF# 524-27**

The OWNER has considered the BID submitted by you for the above described WORK in response to its Advertisement for Bids dated _____, and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of: _____
_____.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment Bond and certificates of insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____ day of _____ 20 ____

Owner: East Richland County Public Service District

By: _____
Larry Brazell

Title: Executive Director

ACCEPTANCE OF NOTICE

Receipt of the NOTICE OF AWARD is hereby acknowledged by _____
_____ this the _____ day of _____, 20____.

By: _____

Title: _____

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SECTION 01217

NOTICE TO PROCEED

TO:

Date:

Project: **East Richland County Public Service District
54-Inch Sewer Trunk Line Rehabilitation
SRF#: 524-27**

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 20__, on or before _____, 20__, and you are to complete the WORK within _____ consecutive calendar days thereafter. The date of completion of all WORK is therefore _____, 20__.

East Richland County Public Service District
Owner

By: _____
Larry Brazell

Title: Executive Director

ACCEPTANCE OF NOTICE

Receipt of the NOTICE TO PROCEED is hereby acknowledged by:

This the _____ day of _____, 20__.

By: _____

Title: _____

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SECTION 01220

CHANGE ORDER

Order No.: _____ Date: _____

Agreement Date: _____ SRF#: 524-27

NAME OF PROJECT: **54-Inch Sewer Line Trunk Rehabilitation**

OWNER: East Richland County Public Service District

CONTRACTOR: _____

The following changes are hereby made to the CONTRACT DOCUMENTS:

Justification:

Change to CONTRACT PRICE: \$.
Original CONTRACT PRICE: \$.
Current CONTRACTOR PRICE adjusted by previous CHANGE ORDER: \$
The CONTRACT PRICE due to this CHANGE ORDER will be (increased)(decreased) by: \$
New Contract Price: \$
Change to CONTRACT TIME:

The CONTRACT TIME will be (increased)(decreased) by _____ calendar days.

The date for completion of all work will be _____
(Date)

Approvals Required:

To be effective this Order must be approved by the State agency if it changes the scope or objective of the PROJECT.

ENGINEER: W.K. Dickson & Co., Inc.

OWNER: East Richland County Public Service District:

CONTRACTOR: _____

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SECTION 01222

REQUEST FOR PAYMENT

CONTRACTOR: _____

ENGINEER: W.K. Dickson & Co., Inc.
1320 Main Street, Suite 400
Columbia, SC 29201

REQUEST FOR PAYMENT

TO: East Richland County Public Service District
704 Ross Road
Columbia, SC29223

DATE: _____
MONTHLY PAYMENT NO. _____
PROJECT: **54-Inch Sewer Trunk Line Rehabilitation**
WKD#20190573.00.CH /SRF#524-27
LOCATION: Columbia, SC

FOR PERIOD: _____

TO: _____

TOTAL VALUE OF WORK COMPLETED TO DATE \$ _____
(SEE ATTACHED SHEETS)

TOTAL VALUE MATERIALS STORED FOR PROJECT \$ _____
(SEE ATTACHED SHEETS)

SUB-TOTAL \$ _____

DEDUCTIONS: LESS % RETAINED \$ _____

LESS PREVIOUS PAYMENTS \$ _____

TOTAL AMOUNT THIS PAYMENT \$ _____

PREVIOUS PAYMENTS

- | | | | |
|----------|----------|----------|-----------|
| 1. _____ | 4. _____ | 7. _____ | 10. _____ |
| 2. _____ | 5. _____ | 8. _____ | 11. _____ |
| 3. _____ | 6. _____ | 9. _____ | 12. _____ |

CONTRACTOR'S CERTIFICATION:

I HEREBY CERTIFY THE ABOVE WORK PERFORMED AND MATERIALS STORED ON PROJECT ARE AS PER THE PROVISIONS OF THE CONTRACT AGREEMENT.

CONTRACTOR

BY: _____

DATE: _____

APPROVED FOR OWNER

BY: _____

DATE: _____

APPROVED FOR ENGINEER

BY: _____

DATE: _____

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SECTION 01230

GENERAL CONDITIONS

1.0 GENERAL

1.1 THE CONTRACT DOCUMENTS: The Contract Documents consists of the Advertisement of Bids, Information for Bidders, Bid, Bid Bond, Agreement, Payment Bond, Performance Bond, Conditions of the Contract (General, Supplemental and Other Conditions), Drawings, Specifications, Addenda, Notice of Award, Notice to Proceed, and Change Orders.

1.2 CORRELATION AND INTENT OF DOCUMENTS: The Contract Documents are complementary, and what is required by anyone shall be as binding as if required by all.

The intent of the Drawings and Specifications is to provide a complete and usable facility. The Contractor's work shall be based on the Drawings and Specifications, but the Contractor shall furnish all labor, supplies, materials, tools, machinery, equipment, transportation, supervision, temporary construction of any nature, and all other services, facilities and means necessary to produce a complete and workable facility whether or not such material and appurtenances are shown on the Drawings or described in the Specifications.

Any mention in the Specifications or indication on the Drawings of articles, materials, methods or operations shall require the Contractor to furnish such item or services as if it were fully specified unless it is noted or specified as not in the Contract. It is intended that all materials shall be new and best quality in every respect unless otherwise noted or specified. All workmanship, methods of assembly, and erection shall be first class in every respect.

1.3 CONFLICT OR INCONSISTENCY: If there is any conflict or inconsistency between the provisions of the Supplemental Conditions and the provisions of the other Contract Documents, the provisions of the Supplemental Conditions shall prevail. If there is any conflict or inconsistency between the provisions of the General Conditions and the provisions of any of the Contract Documents, other than the Supplemental Conditions, the provisions of the General Conditions shall prevail.

In case of conflict the Drawings and Specifications, the Specifications shall govern. Figure dimensions on Drawings shall govern over scale dimensions, and detailed Drawings shall govern over general Drawings.

In case of difference between small-scale and large-scale drawings, the large-scale drawings shall govern. Schedules on any contract drawing shall take precedence over conflicting information on that or any other contract drawing.

On any of the drawings where a portion of the work is detailed or drawn out and the remainder is shown in outline, the parts detailed or drawn out shall apply also to all other like portions of the work. Where the word “similar” occurs on the drawings, it shall have a general meaning and not be interpreted as being identical, and all details shall be worked out in relation to their location and their connection with other parts of the work.

Any discrepancies found between the Drawings and Specifications and site conditions or any inconsistencies or ambiguities in the Drawings or Specifications shall be immediately reported to the Engineer, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. Work done by the Contractor after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the Contractor’s risk.

Should a conflict be discovered within the Contract Documents, the Contractor shall be deemed to have estimated the higher quality way of doing the Work unless he shall have asked for and obtained a decision in writing from the Engineer before entering into this Contract.

1.4 **ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS:** The contractor may be furnished additional instructions and detail drawings, by the Engineer, as necessary to carry out the Work required by the Contract Documents. The additional drawings and instructions thus supplied will become a part of the Contract Documents. The Contractor shall carry out the Work in accordance with the additional detail drawings and instructions.

1.5 **SPECIFICATION HEADINGS:** For convenience of reference, these Specifications are divided into various divisions, Sections, subsections and Paragraphs. The titles of these headings shall not be taken as a correct or complete segregation of the various types of material and labor or as an attempt to outline jurisdictional procedures. The headings shall not be deemed to limit or restrict the content, meaning or effect of such section, subsection, paragraph, provision or part.

The organization of the Specifications into the various headings, and the arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade. Each subcontract shall be dependent upon its own definite confines, regardless of Divisions of these Specifications. No responsibility, neither direct nor implied, is assumed by the Owner for omissions or duplications by the Contractor or by any of his subcontractors due to real or alleged errors in arrangement of matter in Contract Documents.

1.6 **DRAWINGS AND SPECIFICATIONS FOR CONSTRUCTION PURPOSES:** The Contractor will be furnished by the Engineer, one (1) complete hard copy set of Drawings and Specifications, and one (1) electronic version to be to be used during the course of construction. If more than one (1) set is needed, the Contractor will pay the actual cost of printing and handling.

- 1.7 **CONTRACT MODIFICATION:** All changes that affect the cost of the construction of the Project must be authorized by means of a contract change order. All change orders and contract modifications must be approved by the Owner prior to becoming effective. The contract change order will include extra work, work for which quantities have been altered from those shown in the bidding schedule as well as decreases or increases in the quantities of installed units which are different from those shown in the bidding schedule because of final measurements. All changes should be recorded on a contract change order as they occur so that they may be included in the partial payment estimate.
- 1.8 **COMPUTATION OF QUANTITIES:** For estimating quantities in which the computation of areas by geometric methods would be comparatively laborious, it is agreed that the planimeter shall be considered an instrument of precision adapted to the measurement of such areas. It is further agreed that the computation of the volume of prisms shall be by the method of average end areas.
- 1.9 **SIGNS:** The Owner reserves the right to all advertising privileges about the job and no signs shall be posted by the Contractor anywhere on the premises without approval by the Owner except those signs, posters, or bulletins required by Federal, State, or local authorities. Directional signs identifying offices and/or storage areas of the Contractor may be erected as required to facilitate work, provided:
1. The Contractor shall submit to the Owner for approval a scale drawing or sketch of the proposed sign showing size, type of material, painting, and proposed location. All submittal data shall be in triplicate.
 2. The size of the individual sign shall be not greater than 24 inches wide by 12 inches high.
 3. Signs shall be neatly painted on weather-resistant materials.
 4. The signs will be removed upon completion of the job.
 5. No sign shall be erected prior to approval by the Owner.
 6. **PLEASE SEE APPENDIX B – SRF REQUIREMENTS ON SIGNAGE.**
- 1.10 **PUBLICITY:** All prime contractors and their subcontractors shall submit to the Owner for approval all publicity items, including photographs, relating to the work of this project. Owner shall approve any and all material prior to release for publication.
- 1.11 **DEFINITIONS:** Wherever the words hereinafter defined or pronouns used in their stead occur in the Contract Documents, they shall have the following meanings:

ADDENDA: Written or graphic instruments issued prior to the execution of the Agreement, which modify or interpret the Contract Document, Drawings and Specifications by additions, deletions, clarifications or corrections. Such addendum or

addenda will take precedent over the position of the general drawings and specifications concerned and will be considered as part of the Contract Documents.

AGREEMENT : The Agreement represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations or agreements, either written or oral, including the bidding documents. The Agreement may be amended or modified by a Change Order.

BID: The written offer or proposal of the Bidder, submitted on the prescribed form, properly signed and guaranteed, to perform the work at the prices quoted by the Bidder.

BID BOND: The security furnished by the Bidder with his proposal for the Project is guaranty he will enter into a contract for the work if his proposal is accepted.

BIDDER: Any individual, firm or corporation or combination of same submitting a bid for work contemplated, acting directly or through a duly authorized representative.

BONDS: Bid, Performance and Payment Bonds and other instruments of security furnished by the Contractor and his Surety in accordance with the Contract Documents.

CALENDAR DAY: Every day shown on the calendar, Sundays and holidays included.

CHANGE ORDER: A written order to the Contractor authorizing an addition, deletion or revision in the Work within the general scope of the Contract Documents, or authorizing an adjustment in the Contract Price or Contract Time.

CONTRACT: The Contract Documents form the Contract. The Contract represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations or agreements, either written or oral, including the bidding documents. The Contract may be amended or modified by a Change Order.

CONTRACT DOCUMENTS: The Contract Documents consist of the Advertisement for Bids, Information for Bidders, Bid, bid Bond, Agreement, Payment Bond, Performance Bond, the Conditions of the Contract (General, Supplemental, and other Conditions), the Drawings, the Specifications, Addenda issued prior to execution of the Contract, Notice of Award, Notice to Proceed, Change Orders and Supplemental Conditions.

CONTRACT PRICE: The total moneys payable to the Contractor under the terms and conditions of the Contract Documents.

CONTRACTOR: The individual, firm or corporation with whom the Owner has executed the Agreement by which the Contractor is obligated directly, or through Subcontractors, to perform work in connection with the Project.

The Contractor is the person or organization identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Contractor means the Contractor or his authorized representative.

CONTRACT TIME: The number of calendar days stated in the Contract Documents for the completion of the Work.

DRAWINGS: The part of the Contract Documents that show the characteristics and scope of the Work to be performed and which have been prepared or approved by the Engineer.

EARTH: An excavated material or material to be excavated; all kinds of material other than rock.

ELEVATION: The figures given on the Drawings or in the other Contract Documents after the work “elevation” or abbreviation of it shall mean the distance in feet above the datum adopted by the Engineer.

ENGINEER: The person, firm or corporation named as such in the Contract Documents and duly appointed by the Owner to undertake the duties and powers herein assigned to the Engineer, acting either directly or through duly authorized representatives.

EQUIPMENT: All machinery, together with the necessary supplies for upkeep and maintenance, and all tools and apparatus necessary for the proper construction and acceptable completion of the work.

FIELD ORDER: A written order effecting a change in the Work not involving an adjustment in the Contract Price or an extension of the Contract Time, issued by the Engineer to the Contractor during construction.

FURNISH: Furnish and install complete, in place, and ready for use.

INFORMATION FOR BIDDERS: The Notice to Contractors containing all necessary information as to provisions, requirements, date, place, and time of submitting bids.

INCLEMENT WEATHER: Weather affecting the work area severe enough to warrant cessation of all work activities. This includes heavy rain, hail, hurricane, earthquake, freezing rain, heavy fog, tornado, or any other weather condition for which a weather alert, warning or watch is issued, and which affects the project area. Additional time may be afforded for inclement weather.

LATEST EDITION: The current printed document issued eight weeks or more prior to date of receipt of bids.

MATERIALS: Any substance specified for use in the construction of the Project and its appurtenances.

NET COST: The cost to the Contractor after application of all credits and discounts (excepting only cash discounts) and without the addition of any factor for burden, overhead or indirect cost or profit.

NOTICE OF AWARD: The written notice of the acceptance of the Bid from the Owner to the successful Bidder.

NOTICE TO PROCEED: Written communication issued by the Owner to the Contractor authorizing him to proceed with the Work and establishing the date of commencement of the Work.

OPTIMUM MOISTURE CONTENT FOR COMPACTION: The moisture content of a soil calculated on the basis of dry weight of soil at which the soil can be compacted to the approximate density under a specified standard method of compaction.

OWNER: A public or quasi-public body or authority, corporation, association, partnership, or individual for whom the Work is to be performed.

PAYMENT BOND: The approved of security furnished by the Contractor to guarantee payment to all persons supplying labor and materials in the prosecution of the work in accordance with the terms of the Contract.

PERFORMANCE BOND: The approved form of security furnished by the Contractor to guarantee the completion of the work in accordance with the terms of the Contract.

PRECONSTRUCTION CONFERENCE: A conference following award and prior to start of construction to be attended by a duly authorized representative of the Engineer and by the responsible officials of the Contractor and other affected parties.

PROJECT: The understanding to be performed as provided in the Contract Documents.

PROPOSAL: The written offer of the Bidder, submitted on the prescribed form, properly signed and guaranteed to perform the work at the prices quoted by the Bidder.

PROPOSAL FORM: The approved form on which the Owner requires formal bids to be prepared and submitted for the work.

PROPOSAL GUARANTY: The security furnished by the Bidder with his proposal for a Project, as guaranty he will enter into a contract for the work if his proposal is accepted.

PROVIDE: Furnish and install complete, in place, and ready for use.

RESIDENT PROJECT REPRESENTATIVE: The authorized representative of the Owner who is assigned to the Project site or any part thereof.

ROCK: An excavated material or material to be excavated; only boulders and pieces of concrete or masonry exceeding ½ cu. yd. in volume, or solid ledge rock which, in the opinion of the Engineer, requires, for its removal, drilling and blasting, wedging, sledging, barring, or breaking up with a power-operated tool. No soft or disintegrate rock which can be removed with hand pick or power-operated excavator or shovel, no loose shaken, or previously blasted rock or broken stone in rock fillings or elsewhere, and no rock exterior to the maximum limits of measurement allowed, which may fall into the excavation will be classified as rock.

SHOP DRAWINGS: All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a Subcontractor, manufacturer, Supplier or distributor, which illustrate how specific portions of the Work shall be fabricated or installed.

SPECIALIST: An individual or firm of established reputation which is regularly engaged in, and which maintains a regular force of workmen skilled in either manufacturing or fabricating items required items required by the Contract, installing items required by the Contract, or otherwise performing work required by the Contract. Where the contract specifications require installation by a specialist, that term shall also be deemed to mean either the manufacturer of the item, an individual or firm licensed by the manufacturer, or an individual or firm who will perform the work under the manufacturer's direct supervision.

STRUCTURES: Bridges, culverts, catch basis, drop inlets, manholes, retaining walls, cribbing, endwalls, buildings, sewers, service pipes, under drains, foundation drains, and other miscellaneous items which may be encountered in the work, and which are not otherwise classified herein.

SUBBASE: The layer or layers of specified or selected material of designated thickness or rate of application placed on a sub grate to comprise a component of the pavement structure to support the base course, pavement or subsequent layer of the construction.

SUBCONTRACTOR: An individual, firm or corporation having a direct contract with the Contractor or with any other Subcontractor for the performance of a apart of the Work at the site. The term subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Subcontractor or his authorized representative.

SUB-SUBCONTRACTOR: An individual, firm or corporation having a direct or indirect contract with Subcontractor to perform any of the Work at the site. The term Sub-subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Sub-subcontractor or an authorized representative thereof.

SUBGRADE: The top surface of a roadbed upon which the pavement structure and shoulders are constructed.

SUBSTANTIAL COMPLETION: That date as certified by the Engineer when the construction of the Project or a specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Project or specified part can be utilized for the purposes for which it is intended.

SUPPLEMENTAL CONDITIONS: Conditions of that Contract other than the General Conditions.

SUPERINTENDENT: The Contractor's authorized representative in responsible charge of the Work.

SUPPLIER: Any person or organization who supplies materials or equipment for the Work, including that fabricated to a special design, but who does not perform labor at the site.

SURETY: The corporation, partnership or individual bound with and for the Contractor for the full and complete performance of the Contract, and for the payment of all debts pertaining to the Work.

TITLES (OR HEADINGS): The titles or headings of the sections and subsections herein are intended for convenience of reference and shall not be considered as having any bearing on their interpretation.

WORK: All labor necessary to produce the construction required by the Contract Documents, and all materials and equipment incorporated or to be incorporated in the Project.

WRITTEN NOTICE: Any notice to any part of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party or his authorized representative on the Work.

1.12 ADDITIONAL DEFINITIONS: Wherever in the Specifications or on the Drawings, the words, "as designated", "as detailed", "as detailed", "as directed", "as ordered", "as permitted", "as prescribed", "as provided", "as requested", "as required", or words of like import are used, it

shall be understood that the designation, detail, direction, order, permission, prescription, provision, request or requirement of the Engineer is intended.

Similarly, the words “approved”, “acceptable”, “satisfactory”, and words of like import shall mean approved by, acceptable to, or satisfactory to the Engineer.

1.13 ABBREVIATIONS: Where any of the following abbreviations are used in the Specifications, they shall have the meaning set forth opposite each.

AA	Aluminum Association	AWWA	American Water Works Association
AAMA	Architectural Aluminum Manufacturers Association	BHMA	Builders Hardware Manufacturers Association
AAN	American Association of Nurserymen	CABRA	Copper and Brass Research Association
AAR	Association of American Railroads	CDA	Copper Development Association
AASHTO	American Association of State Highway and Transportation Officials	CEMA	Conveyor Equipment Manufacturers Association
AATC	American Association of Textile Chemists And Colorists	CGA	Compressed Gas Association
ACI	American Concrete Institute	CRSI	Concrete Reinforcing Steel Institute
ACPA	American Concrete Pipe Association	CS	Commercial Standards, U.S. Department of Commerce
AED	American Equipment Dealers	CSI	Construction Specification Institute
AFBMA	Anti-Friction Bearing Manufacturers Association, Inc.	DCDMA	Diamond Core Drill Manufacturers Association
AFI Association	American Filter Institute	EIA	Electronic Industries
AGA	American Gas Association	FCI	Fluid Controls Institute
AGC	Associated General Contractors of	FGJA	Flat Glass Jobbers Association
AGMA	American Gear Manufacturers Association	FIA	Factory Insurance Association
AHAM	Association of Home Appliance Manufacturers	FM	Factory Manual
AHDGA	American Hot Dip Galvanizers Association	FMEC	Factory Mutual Engineering Corporation
AIA	American Institute of Architects	FS	Federal Specification
AIEE	American Institute of Electrical Engineers	FSPT	Federation of Societies for Paint Technology
AISC	American Institute of Steel Construction	FSS	Federal Specifications, General Services Administration
AISI	American Iron and Steel Institute		
ALS	American Lumber Standards	FHWA	Federal Highway Administration
AMA	Acoustical Materials Association	GA	Gypsum Association
AMCA	Air Moving and Conditioning Association	IBI	Insulation Board Institute
ANS	American Nuclear Society	IBR	Institute of Boiler and Radiator Manufacturers

ANSI	American National Standards Institute		
APA	American Plywood Association	IEEE	Institute of Electric and Electronics Engineers
API	American Petroleum Institute		
ARA	American Railway Association	IES	Illuminating Engineering Society
AREA	American Railway Engineering Association	ILIA	Indiana Limestone Institute of America
ARI	Air Conditioning and Refrigeration Institute	IME	Institute of Makers of Explosives
ASA	Acoustical Society of America	IP	Institute of Petroleum (London)
ASCE	American Society of Civil Engineers	IPC	Institute of Printed Circuits
ASHRAE	American Society of Heating, Refrigerating Air Conditioning Engineers	IPCEA	Insulated Power Cable And Engineers Association
ASLA	American Society of Landscape Architects	ISA	Instrument Society of America
ASLE	American Society of Lubricating Engineers	ISO	International Organization for Standardization
ASME	American Society of Mechanical Engineers		
ASQC	American Society for Quality Control	ITE	Institute of Traffic Engineers
ASSE	American Society of Sanitary Engineers	LIA	Lead Industries Association
ASTM	American Society for Testing and Materials	MBMA	Metal Building Manufacturers Association
AVATI	Asphalt and Vinyl Asbestos Tile Institute	MIA	Marble Institute of America
AWI	Architectural Woodwork Institute	MLA	Metal Lath Association
AWPA	American Wood Preservers' Association	MLMA	Metal Lath Manufacturers Association
AWPI	American Wood Preservers' Institute	MPTA	Mechanical Power Transmission Association
AWS	American Welding Society		
MRIS	Maritime Research Information Service	PDCA	Painting and Decorating Council of America
MS	Military Specification		
MSTD	Military Standard	PEI	Porcelain Enamel Institute
NAAMM	National Association of Architectural Metal Manufacturers	PI	Perlite Institute
NAFM	National Association of Fan Manufacturers	RIS	Redwood Inspection Service
NBFU	National Board of Fire Underwriters	RMA	Rubber Manufacturers Association
NBS	National Bureau of Standards	RTI	Resilient Tile Institute
NCCLS	National Committee for Clinical Laboratory Standards	RWMA	Resistance Welder Manufacturers Association
NCMA	National Concrete Masonry Association	SAE	Society of Automotive Engineers
Association		SAMA	Scientific Apparatus Makers
NEC	National Electrical Code	SBI	Steel Boiler Institute
NECA	National Electrical Contractors Association	SCDOT	South Carolina Department of Transportation
NEMA	National Electrical Manufacturers Association		
NFC	National Fire Code	SCPI	Structural Clay Products Institute
NFPA	National Fire Protection Association	SCSH	South Carolina State Highway Department
NHLA	National Hardware Lumber Association	SDI	Steel Deck Institute
NLA	National Lime Association	SIS	Swedish Standards Association
		SJI	Steel Joist Institute

NLGI	National Lubricating Grease Institute	SMA	Screen Manufacturers Association
NLMA	National Lumber Manufacturers Association	SMACCNA	Sheet Metal and Air Conditioning Contractors National Association
NMA	National Microfilm Association	SPIB	Southern Pine Inspection Bureau
NMWIA	National Mineral Wool Insulation Association	SPR	Simplified Practice Recommendation, U.S. Department of Commerce
NPC Code	National Plumbing Code	SSBC	Southern Standard Building
NRCA	National Roofing Contractors Association	SSGC	Southern Standard Gas Code
NRMCA	National Ready Mixed Concrete Association	SSPC	Steel Structures Painting Council
NSF	National Sanitation Foundation	TAPPI	Technical Association of the Pulp and Paper
NTMA	The National Terrazzo and Mosaic Association	TCA	Tile Council of America
NWMA	National Woodwork Manufacturers Association	TRB	Transportation Research Board
OSHA	Occupational Safety and Health Act	UL	Underwriters' Laboratories, Inc.
PCA	Portland Cement Association	WWPA	Western Wood Products Association
PCI	Prestressed Concrete Institute		

2.0 OWNERS RIGHTS AND RESPONSIBILITIES

2.1 CHANGES IN THE WORK : The Owner, without invalidating the Contract, may make changes in the Work and in the Drawings and Specifications therefore by making alterations therein, additions thereto, or omissions therefrom. All work resulting from such changes shall be performed and furnished under and pursuant to the terms and conditions of the Contract. If such changes result in an increase or decrease in the work to be done hereunder, or increase or decrease the quantities thereof, adjustment in compensation shall be made therefore as provided in Subsection 7.11 PAYMENT FOR EXTRA WORK.

Except in an emergency endangering life or property, no change shall be made unless in pursuance of a written order from the Engineer authorizing the change, and no claim for additional compensation shall be valid unless the change is so ordered.

The Contractor agrees that he shall neither have nor assert any claim for, or be entitled to, any additional compensation for damages or for loss of anticipated profits on work that is eliminated.

2.2 PROJECT ENGINEER: W.K. Dickson & Co., Inc.
 1320 Main Street, Suite 400
 Columbia, SC 29201

2.3 ENGINEER'S AUTHORITY: The Engineer will be the Owner's representative during the construction period and he will observe the work in progress on behalf of the Owner. The Engineer will have the authority to act on behalf of the Owner in the following matters consistent with Owner's right and obligations as set forth in these Contract Documents.

1. Interpretation of Contract Documents.
2. Approval of samples and shop drawings.
3. Preparation of supplementary details and instructions.
4. Inspection and approval of construction work.
5. Preliminary approval of progress payment applications.

Any instructions that the Engineer may issue the contractor shall be adjudged an interpretation of the Contract requirements and not an act of supervision. The Engineer has no authority, nor accepts any responsibility, direct or implied, to direct and superintend the construction operations.

The Contractor shall proceed without delay to perform the work as directed, instructed, determined, or decided by the Engineer and shall comply promptly with such directions, instructions, determinations, or decisions. If the Contractor has any objection thereto, he may require that any such direction, instruction, determination, or decision be put in writing and within 10 days after receipt of any such writing, he may file a written protest with the Owner stating clearly and in detail his objections, the reasons therefore, and the nature and amount of additional compensation, if any, to which he claims he will be entitled thereby. A copy of such protest shall be filed with the Engineer at the same time it is filed with the Owner. Unless the Contractor files such written protest with the Owner and Engineer within such 10 day period, he shall be deemed to have waived all grounds for protest of such direction, instruction, decision or determination and all claims for additional compensation or damages occasioned thereby, and shall further be deemed to have accepted such direction, instruction, determination, or decision as being fair, reasonable, and finally determinative of his obligations and rights under the Contract.

2.4 LIABILITY OF OWNER: No person, firm or corporation, other than the Contractor, who signed this Contract as such, shall have any interest herein or right hereunder. No claim shall be made or be valid either against the Owner or any agent of the Owner and neither the Owner nor any agent of the Owner shall be liable for or be held to pay any money, except as herein provided. The acceptance by the Contractor of the payment as fixed in the final estimate shall operate as and shall be a full and complete release of the Owner and of every agent of the Owner of and from any and all claims, demands, damages and liabilities of, by or to the Contractor for anything done or furnished for or arising out of or relating to or by reason of the work or for or on account of any act or neglect of the Owner or of any agent of the Owner or of any other person, arising out of, relating to or by reason of the work, except the claim against the Owner for the unpaid balance, if any there be, of the amounts retained as herein provided.

2.5 RIGHTS-OF-WAY AND SUSPENSION OF WORK: The Owner shall furnish all land and rights-of-way necessary for carrying out this Contract and the completion of the Work herein contemplated; and will use due diligence in acquiring said land and rights-of-way as speedily as possible. It is possible that all lands and rights-of-way may not be obtained as contemplated herein before construction begins. In this event the Contractor shall begin his work upon such land and rights-of-way as the Owner may have previously acquired. No claim for damages will be allowed whatsoever by reason of delay in obtaining the remaining lands and rights-of-way.

Should the Owner be prevented or enjoined from proceeding with the work, or from authorizing its prosecution, either before or after the commencement, by reason of any litigation, or by reason of its inability to procure any lands or rights-of-way for the said work, the Contractor shall not be entitled to make or assert claim for damage by reason of said delay or to withdraw from the contract except by consent of the Owner; but time for completion of the work will be extended to such time as the Owner determines will compensate for the time lost by such delay, such determination to be set forth in writing.

2.6 SURVEYS, PERMITS AND REGULATIONS: The Owner will furnish all boundary surveys and establish all base lines for location the principal component parts of the Work together with a suitable number of bench marks adjacent to the Work as shown in the Contact Documents.

Encroachment permits, easements for permanent structures and permits for permanent changes in existing facilities shall be secured and paid for by the Owner, unless otherwise specified.

2.7 LINES, GRADES AND MEASUREMENTS: The Owner's Engineer will set sufficient base lines and elevations as shown on the Drawings for location of the Work. The Contractor shall employ a registered civil engineer, or land surveyor and shall require said Engineer to establish all lines, elevations, reference marks, batter boards, etc., needed by the Contractor during the progress of the work, and from time to time to verify such marks by instrument or other appropriate means.

The datum adopted by the Engineer is NAVD 83. All elevations shown on the Drawings or referred to in these specifications refer to this datum.

The Owner's Engineer shall be permitted at all times to check the lines, elevations, reference marks, batter boards, etc., set by the contractor, who shall correct any errors in lines, elevation, reference marks, batter boards, etc., disclosed by such check. Such check shall not be construed to be an approval of the Contractor's work and shall not relieve or diminish in any way the responsibility of the Contractor for the accurate and satisfactory construction and completion of the entire work.

The Owner's Engineer shall have access to all field notes. Field notes will be recorded in bound field books, and carbon copies given the Owner's Inspector at the close of each shift.

2.8 OWNER'S RIGHT OF AUDIT: The Owner is to have a full and complete right to audit and make copies of Contractor's or Subcontractor's records with respect to any payment that the Owner may be requested to make, or may make, for any work done on the project. Further, the contractor will furnish all documents necessary for the Owner to obtain a Certified Audit of the entire project.

2.9 OWNER'S RIGHT TO SEPARATE CONTRACTS: The Owner reserves the right to let other contracts in connection with the Work under similar General Conditions. The Contractor shall afford other contractors reasonable opportunity for introduction and storage of their

materials and the execution of their work, and shall properly connect and coordinate his work with theirs.

The Owner may perform additional Work related to the Project by himself, or he may let other contracts containing provisions similar to these. The Contractor will afford the other contractors who are parties to such contracts (or the Owner, if he is performing the additional Work himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of Work and shall properly connect and coordinate his Work with theirs.

2.10 OWNER'S RIGHT TO DO WORK: If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the Owner, after three (3) days' written notice to the Contractor may, without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor. If such expense shall exceed the unpaid balance, the Contractor shall pay the difference to the Owner on demand.

The Engineer's certificate setting forth the fair and reasonable cost of repairing, replacing, rebuilding or restoring any damaged or defective work or equipment when performed by one other than the Contractor shall be binding and conclusive as to the amount thereof upon the Contractor.

2.11 OWNER'S RIGHT TO TERMINATE CONTRACT: The Owner may, without prejudice to any other right or remedy, and after giving the Contractor and his surety, if any, seven days' written notice, terminate the employment of the Contractor and take possession of the premises and of such materials as it may deem expedient if:

1. the Contractor should be adjudged a bankrupt,
2. the Contractor should make a general assignment for the benefit of his creditors,
3. a receiver or trustee should be appointed on account of the Contractors insolvency,
4. the Contractor should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials,
5. the Contractor should fail to make prompt payment to Subcontractors or suppliers of material or labor,
6. the Contractor should persistently disregard laws, ordinances or the instructions of the Owner and his representatives, or otherwise be guilty of substantial violation of any provision of the Contract

In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the contract price shall exceed the expense of finishing the work including compensation for additional engineering, managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner.

2.12 SUSPENSION OF WORK, TERMINATION AND DELAY: The Owner may suspend the Work or any portion thereof for a period of not more than ninety days or such further time as agreed upon by the Contractor, by written notice to the Contractor and the Engineer, which notice shall fix the date on which Work shall be resumed. The Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension.

2.13 INSPECTIONS AND TESTING :If the Contract Documents, Owner's instructions, laws, ordinances or any public authority having jurisdiction require any work to be specially tested or approved, the Contractor shall give the Owner timely notice of its readiness for observation by the Owner or inspection by another authority and, if the inspection is by another authority rather than the Owner, of the date fixed for such inspection.

The Contractor shall secure the required certificates of such inspection. Observations by the Owner shall be promptly made and, where practicable, at the source of supply. If any work should be covered up without approval or consent of the Owner, it must, if required by the Owner, be uncovered for examination at the Contractor's expense.

2.14 INSPECTION OF WORK AWAY FROM THE SITE: If the work to be done away from the construction site is to be inspected on behalf of the Owner during its fabrication, manufacture, or testing or before shipment, the Contractor shall give notice to the Engineer of the place and time where such fabrication, manufacture, testing, or shipping is to be done. Such notice shall be in writing and delivered to the Engineer in ample time so that the necessary arrangements for the inspection can be made.

2.15 PIPE LOCATION: Exterior pipelines will be located as indicated on the Drawings, but the Owner reserves the right, acting through the Engineer, to make such modifications in location as may be found desirable to avoid interference with structures or for other reasons. Where fittings, etc., are noted on the Drawings such notation is for the Contractor's convenience and does not relieve him from laying and jointing different or additional items where required.

2.16 PRIOR USE OR OCCUPANCY: The Owner reserves the right to use or occupy the Work or portion thereof, and to use equipment installed under the Contract, prior to final acceptance. Such use or occupancy will not constitute acceptance of the Work or any part thereof. Despite such use or occupancy, guarantee periods will not begin until the completion of all work under the Contract, unless agreement to the contrary is made in writing between the parties.

2.17 WEATHER CONDITIONS: In the event of temporary suspension of work, or during inclement weather, or whenever the Engineer shall direct, the Contractor will, and will cause his subcontractors to, protect carefully his and their work and materials against damage or injury from the weather. If, in the opinion of the Engineer, any work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of his subcontractors so to protect its work, such materials shall be removed and replaced at the expense of the Contractor.

2.18 OWNER'S RIGHT TO CLEAN UP: If a dispute arises between the separate contractors as to their responsibility for cleaning up, the Owner may clean up, the Owner may clean up and charge the cost thereof to the Contractor as the Engineer shall determine to be just.

3.0 CONTRACTOR'S RIGHTS AND RESPONSIBILITIES

3.1 ACCESS TO WORK: The Owner, the Engineer, and their officers, agents, servants, and employees plus representatives of the various participating Federal or State agencies may, at any and all times and for any and all purposes, enter upon the work and site thereof and the premises used by the Contractor, and the Contractor shall at all times provide safe and proper facilities therefore.

3.2 ACCIDENT PREVENTION: In the performance of the Contract the Contractor shall comply with the applicable provisions of the regulations issued by the Secretary of Labor pursuant to section 107 of the Contract Work Hours and Safety Standards Act entitled "Safety and Health Regulations for Construction" (29 CFR 1518, renumbered as Part 1926). Occupational Safety and Health Standards (29 CFR Part 1910) issued by the Secretary of Labor pursuant to the Williams-Steiger Occupational Safety and Health Act of 1970 are applicable to work performed by the Contractor subject to the provisions of the Act.

3.3 STATED ALLOWANCES: The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. These allowances shall cover the net cost of the materials and equipment delivered and unloaded at the site and all applicable taxes. The Contractor's handling costs on the site, labor, installation costs, overhead, profit and other expenses contemplated for the original allowance shall be included in the Contract Sum and not in the allowance. If the cost, when determined, is more than or less than the allowance, the Contract Sum shall be adjusted accordingly by Change Order which will include additional handling costs on the site, labor, installation costs, overhead, profit and other expenses resulting to the Contractor from any increase over the original allowance.

3.4 ARCHAEOLOGICAL RIGHTS: There is a possibility that items of archaeological significance may be found during the excavation of the site. In such event, the Contractor shall stop excavation in the vicinity of the find and notify the Engineer immediately; subsequent excavation work shall proceed as directed by the Engineer. All items found which are considered to have archaeological significance are the property of the Owner.

~~3.5 AS-BUILT DRAWINGS: The Contractor shall designate one set of Drawings for "As-Built Drawings". The Contractor shall indicate on these drawings all field changes affecting various mechanical, electrical, piping and other items as well as locations as actually installed. The Contractor will keep the "As-Built Drawings" current. The "As-Built Drawings" shall be delivered to the Engineer upon completion and acceptance of the Work. Final payment for the Work will not be made until the "As-Built Drawings" have been completed and delivered as indicated above.~~

3.6 SURVEYS, PERMITS AND REGULATIONS: From the information provided by the Owner, unless otherwise specified in the Contract Documents, the Contractor shall develop and

make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines, elevations and cut sheets. The Contractor shall carefully preserve bench marks, reference points and stakes and, in case of willful or careless destruction, he shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

The Contractor shall obtain any required state and local permits, licenses, inspections, and certificates necessary for the prosecution of the work. The Contractor shall obtain these documents, and pay the fees assessed, for each division of work for which such permits, licenses, and inspections are required. The Contractor shall also obtain and pay the fees for general permits such as Building Permits and Certificates of Occupancy.

The Contractor shall give all notices and comply with all applicable Federal, State and municipal laws, codes, ordinances, rules and regulations bearing on the conduct of the Work as drawn and specified. If the Contractor observes that the Contract Documents are at variance therewith, he shall promptly notify the Engineer in writing, and any necessary changes shall be adjusted as provided in Subsection 2.1 entitled CHANGES IN THE WORK.

3.7 LINES, GRADES AND MEASUREMENTS: The Contractor shall employ, at his own expense, a competent land surveyor who shall be registered in South Carolina and who shall be thoroughly experienced in field layout work. Said Surveyor shall establish all lines, elevations, reference marks, etc., needed by the Contractor during the progress of the Work, and from time to time he shall verify such marks by instrument or by other appropriate means.

Alignment and grade of all pipe, tunnels, and borings shall be continuously controlled by use of lasers established through the pipe or casing, not transferred from another medium. The Contractor shall furnish lasers and accessories as required and approved by the Engineer. The Contractor's Surveyor will set and check each laser each day that work is in progress or more often as required to assure continuous accurate control.

The Contractor shall make all measurements and check all dimensions necessary for the proper construction of the work called for by the Drawings and Specifications. During the prosecution of the Work, he shall make all necessary measurements to prevent mis-fitting in said work, and he shall be responsible therefore, and for the accurate construction of the entire work.

The Contractor's Surveyor responsible for lines and grades shall verify to the Owner in writing that work has been constructed to lines and grades as shown on the Drawings. This certification shall accompany each request for payment.

3.8 OBLIGATIONS OF CONTRACTOR: The Contractor shall and will, in good workmanlike manner, do and perform all work and furnish all supplies and materials, tools, machinery, equipment, transportation, supervision, temporary construction of any nature, and all other services, means and facilities except as herein otherwise expressly specified, necessary or proper to perform and complete all work required by this Contract, within the time herein specified, in accordance with the provisions of this Contract and in accordance with the Drawings and Specifications and in accordance with the direction of the Engineer as given from time to time

during the progress of the work. He shall furnish, erect, maintain and remove such construction plant and such temporary works as may be required.

The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements, and limitations of the Contract and Specifications, and shall do, carry on, and complete the entire work to the satisfaction of the Engineer and the Owner.

The Contractor shall check all dimensions, elevations, quantities and instructions shown on the Drawings or given in the Specifications and shall notify the Engineer should any discrepancy of any kind be found in the Drawings, Specifications or conditions at the site. He will not be allowed to take advantage of any discrepancy, error or omission in the Contract Documents. If any discrepancy is discovered, the Engineer will issue full instructions pertaining thereto and the Contractor shall carry out these instructions as if originally specified.

3.9 CLAIMS FOR ADDITIONAL COST: If the Contractor wishes to make a claim for an increase in the Contract Sum, he shall give written notice thereof within twenty days after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor before proceeding to execute the Work, except in an emergency endangering life or property, in which case the Contractor shall proceed in accordance with Subsection 3.31 entitled PROTECTION OF WORK, PROPERTY AND PERSONS IN AN EMERGENCY. No such claim shall be valid unless so made. If the Owner and the Contractor cannot agree on the amount of the adjustment in the contract Sum, it shall be determined by the Engineer. Any change in the Contract sum resulting from such claim shall be authorized by Change Order.

3.10 CLAIMS FOR DAMAGE: If the Contractor makes claim for any damages alleged to have been sustained by breach of contract or otherwise, he shall, within ten (10) days after occurrence of the alleged breach or within ten (10) days after such damages are alleged to have been sustained, whichever date is the earlier, file with the Engineer a written, itemized statement in triplicate of the details of the alleged breach and the details and amount of the alleged damages. The Contractor agrees that unless such statement is made and filed as so required, his claim for damages shall be deemed waived, invalid and unenforceable, and that he shall not be entitled to any compensation for any such alleged damages. Within ten (10) days after the timely filing of such statement, the Engineer shall file with the Owner one copy of the statement together with his recommendations for action by the Owner.

The Contractor shall not be entitled to claim any additional compensation for damages by reason of any direction, instruction, determination or decision of the Engineer, nor shall any such claims be considered, unless the Contractor shall have complied in all respects with the last paragraph of Subsection 2.3 entitled ENGINEER'S AUTHORITY, including, but not limited to, the filing of written protest in the manner and within the time therein provided.

3.11 CUTTING AND PATCHING: The Contractor shall leave all chases or openings for the installation of his own or any other contractor's subcontractor's work, or shall cut the same in existing work, and shall see that all sleeves or forms are at the work and properly set in ample time to prevent delays. He shall see that all such chases, openings, and sleeves are located

accurately and are of proper size and shape and shall consult with the Engineer and the contractors and subcontractors concerned in the reference to this work.

In case of his failure to leave or cut all such openings or have all such sleeves provided and set in proper time, he shall cut them or set them afterwards at his own expense, but in so doing he shall confine the cutting to the smallest extent possible consistent with the work to be done. In no case shall piers or structural members be cut without the written consent and approval of the Engineer.

The Contractor shall carefully fit around, close-up, repair, patch, and point around the work specified herein to the satisfaction of the Engineer.

All of his work shall be done by careful workmen competent to do such work and with the proper small hand tools. Power tools shall not be used except where, in the opinion of the Engineer, the type of tool proposed can be used without damage to any work or structure and without inconvenience or interference with the operation of any facility. The Engineer's approval of the type of tool shall not in any way relieve or diminish the responsibility of the Contractor for such damage, inconvenience or interference resulting from the use of such tools.

The Contractor shall not cut or alter the work of any subcontractor or any other contractor, nor permit any of his subcontractors to cut or alter the work of any other contractor or subcontractor except with the written consent of the contractor or subcontractor whose work is to be cut or altered or with the written consent of the Engineer. All cutting and patching or repairing made necessary by the negligence, carelessness, or incompetence of the Contractor or any of his subcontractors shall be done by or at the expense of the Contractor and shall be the responsibility of the Contractor.

3.12 CLEANING UP: The Contractor at all times shall keep the site of the work free from rubbish and debris caused by his operation under the Contract. When the work has been completed, the Contractor shall remove from the site of the work all of his plant, machinery, tools, construction equipment, temporary work and surplus materials so as to leave the work and the site clean and ready for use.

All public streets adjacent to the site and all private ways at the site shall be kept clean of debris, spilled materials, and wet and dry earth at all times and shall be cleaned at the end of each working day. When wet earth is encountered, it shall be cleaned from the vehicles before they leave the site and enter streets and private ways.

3.13 NON-COMPLIANCE WITH CONTRACT REQUIREMENTS: In the event the Contractor, after receiving written notice from the Owner of non-compliance with any requirement of this Contract, fails to initiate promptly such action as may be appropriate to comply with the specified requirement within a reasonable period of time, the Owner shall have right to order the Contractor to stop any or all work under the Contract until the Contractor has complied or has initiated such action as may be appropriate to comply within a reasonable period of time. The Contractor will not be entitled to any extension of contract time or payment for any costs incurred as a result of being ordered to stop work for such cause.

3.14 OVERALL PROJECT COORDINATION: The Contractor shall coordinate all Work of his Contract to produce the required finished Project in accordance with the Contract Documents. Special attention shall be given to the submission of shop drawings, samples, color charts, and requests for substitution within the specified time; furnishing the proper shop drawings to Subcontractors and material suppliers, whose work and equipment is affected by and related thereto; and the furnishing of all information concerning location, type, and size of built-in equipment and materials and equipment utilities. This coordination is in addition to all other coordination requirements called for in the technical sections of the Specifications.

3.15 COMMUNICATIONS: The Contractor shall forward all communications to the Owner through the Engineer.

3.16 NO DISCRIMINATION IN EMPLOYMENT: In connection with the performance of work under this Contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, religion, color, or national origin. The aforesaid provision shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

3.17 DRAWINGS AND SPECIFICATIONS AT THE SITE: The Contractor shall maintain at the site one complete set of all Drawings, Specifications, Addenda, approved Shop Drawings, Change Orders and other Modifications, in good and readable condition and marked to record all changes made during construction. These shall be available to the Engineer. The Drawings, marked to record all changes made during construction, shall be delivered to the Engineer for the Owner upon completion of the work.

3.18 EMPLOY COMPETENT PERSONS: The Contractor shall endeavor to employ only competent persons on the Work. Whenever the Engineer notifies the Contractor in writing that in his opinion any person on the Work is incompetent, unfaithful, disorderly, or otherwise unsatisfactory, or not employed in accordance with the provisions of the Contract, such person shall be discharged from the Work and shall not again be employed on it, except with the written consent of the Engineer. Provided, however, that the failure of the Owner or Engineer to object to an employee is not to be considered acknowledgment or approval of the employee's competence by the Engineer or Owner.

3.19 EMPLOY SUFFICIENT LABOR AND EQUIPMENT: If, in the judgment of the Engineer, the Contractor is not employing sufficient labor, plant, equipment or other means to complete the Work within the time specified, the Engineer may, after giving written notice, require the Contractor to employ such additional labor, plant, equipment and other means as the Engineer may deem necessary to enable the Work to progress properly.

3.20 EXISTING STRUCTURES: Where the dimensions and locations of existing structures are of importance in the installation or connection of any part of the Work, the Contractor shall verify such dimensions and locations in the field before the fabrication of any material or equipment that is dependent on the corrections of such information.

3.21 BENCH MARKS, PROPERTY CORNERS AND MONUMENTS: The Contractor shall maintain, carefully, all benchmarks, property corners, monuments and other reference points encountered. If disturbed or destroyed, the Contractor shall obtain the services of a Registered Land Surveyor to replace them, or pay for the replacement by appropriate authorities, at the Contractor's own expense.

3.22 INDEMNIFICATION: The Contractor shall indemnify and hold harmless the Owner and the Engineer and their agents and employees from and against all claims, damages, losses and expenses, including attorneys' fees, arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom; and is caused in whole or in part by any negligent or willful act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable.

In any and all claims against the Owner or the Engineer, or any of their agents or employees, by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under worker's compensation acts, disability benefit acts or other employee benefits acts.

3.23 INTOXICATING LIQUORS: The Contractor shall not sell and shall neither permit nor suffer the introduction or use of intoxicating liquors upon or about the Work.

3.24 LEGAL ADDRESS OF CONTRACTOR: The Contractor's business address and his office at or near the site of the Work are both hereby designated as places to which communications may be delivered. The depositing of any letter, notice, or other communication in a postpaid wrapper directed to the Contractor's business address in a post office box regularly maintained by the U. S. Postal Service or the delivery at either designated address of any letter, notice, or other communication by mail or otherwise shall be deemed sufficient service thereof upon the Contractor, and the date of such service shall be the date of deposit. The first-named address may be changed at any time by an instrument in writing, executed and acknowledged by the Contractor and delivered to the Engineer. Service of any notice, letter or other communication upon the Contractor personally shall likewise be deemed sufficient service.

3.25 MUTUAL RESPONSIBILITY OF CONTRACTORS: The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials/equipment and the execution of their work, and shall properly connect and coordinate his Work with theirs.

If any part of the Contractor's Work depends on proper execution or results upon the work of any other separate contractor, the Contractor shall inspect and promptly report to the Owner, any apparent discrepancies or defects in such work that render it unsuitable for such proper execution and results. Failure of the Contractor so to inspect and report shall constitute an acceptance of the other contractor's work as fit and proper to receive his Work, except as to defects which may

develop in the other separate contractor's work after the execution of the contractor's Work. To ensure proper execution of the subsequent work, the Contractor shall measure work already in place and shall at once report to the owner any discrepancy between the executed work and the Contract Documents.

Should the Contractor cause damage to any separate contractor on the Work, the Contractor agrees, upon due notice, to settle with such contractor by agreement or arbitration, if he will so settle. If such separate contractor sues the Owner on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor, who shall defend such proceedings at the Contractor's expense, and if any judgment against the Owner arises therefrom, the Contractor shall pay or satisfy it and pay all costs incurred by the Owner.

3.26 WORK HOURS: The Contractor shall submit a normal work schedule, to the Engineer for approval. Night, Weekend, and Holiday work will not be permitted unless it meets the requirements of the following section AND has written approval of the Owner.

Work performed by the Contractor at his own volition outside such customary working hours shall be at no additional expense to the Owner.

Any requests received by the Contractor from occupants of existing buildings to change the hours of work shall be referred to the Owner for determination.

3.27 NIGHT AND SUNDAY WORK: No work shall be done at night or on Sunday except:

1. Usual protective work, such as pumping and the tending of lights and fires;
2. Work done in case of emergency threatening injury to persons or property;
3. When provided for under Supplemental Conditions as herein specified;

If all of the conditions set forth in the next paragraph below are met, no work other than that included in (1), (2), and (3) above, shall be done at night except when:

- a. In the judgment of the Engineer, the work will be of advantage to the Owner and can be performed satisfactorily at night;
- b. The work will be done by a crew organized for regular and continuous night work;
- c. The Engineer has given written permission for such night work.

Any work necessary to be performed after regular hours, on Sundays, or on Legal Holidays shall be performed without additional expense to the Owner.

3.28 OCCUPYING PRIVATE LAND: The Contractor shall not (except after written consent from the proper parties) enter or occupy with men, tools, materials, or equipment, any land outside the rights-of-way or property of the Owner. A copy of the written consent shall be given to the Engineer prior to occupation of private land.

3.29 DEWATERING EXCAVATIONS: The Contractor shall remove and dispose of water in all excavations for pipelines, structures, and appurtenances so that construction can be carried out under relatively dry conditions. The dewatering shall be accomplished by the use of pumps,

ditches, well points, or other approved methods, as required. Excavations shall be de-watered and brought to the specified grade prior to installation of any permanent structure, and shall be maintained in this relatively dry condition throughout project construction.

3.30 PRECAUTIONS DURING ADVERSE WEATHER: During adverse weather and against the possibility thereof, the Contractor shall take all necessary precautions so that the Work may be properly done and satisfactory in all respects. When required, protection shall be provided by use of tarpaulins, wood and building-paper shelters, or other approved means.

During cold weather, materials shall be preheated, if required, and the materials and adjacent structure into which they are to be incorporated shall be made and kept sufficiently warm so that a proper bond will take place and a proper curing, aging, or drying will result. Protected spaces shall be artificially heated by approved means, which will result in a moist or a dry atmosphere according to the particular requirements of the work being protected. Ingredients for concrete and mortar shall be sufficiently heated so that the mixture will warm throughout when used.

The Engineer may suspend construction operations at any time when, in his judgment, the conditions are unsuitable or the proper precautions are not being taken, whatever the weather may be, in any season. The Contractor agrees that he shall not have or assert any claim for or be entitled to any additional compensation or damages on account of any such suspension.

3.31 PROTECTION OF WORK, PROPERTY AND PERSONS: The Contractor will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the Work and other persons who may be affected thereby, all the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

The Contractor will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He will erect and maintain, as required by the conditions and progress of the Work, all necessary safeguards for safety and protection. He will notify owners of adjacent utilities when prosecution of the Work may affect them. The Contractor will remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the Contractor, any subcontractor, or anyone directly or indirectly employed by any of them or anyone for which acts any of them maybe liable, except damage or loss attributable to the acts or omissions of the Owner or the Engineer or anyone employed by either of them or anyone for whose acts either of them may be liable and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the Contractor.

3.32 PROTECTION OF WORK, PROPERTY AND PERSONS IN AN EMERGENCY: In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the Engineer or Owner, shall act to prevent threatened damage, injury or loss. He will give the Engineer prompt Written

Notice of any significant changes in the Work or deviations from the Contract Documents caused thereby, and a Change Order shall thereupon be issued covering the changes and deviations involved.

3.33 PROTECTION AGAINST WATER AND STORM: The Contractor shall take all precautions necessary to prevent damage to the Work by storms or by water entering the site of the Work directly or through the ground. In case of damage by storm or water, the Contractor shall at his own cost and expense make such repairs or replacements or rebuild such parts of the Work as the Engineer may require in order that the finished work may be completed as required by the Contractor.

3.34 PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES AND IMPROVEMENTS: The Contractor will preserve and protect all existing vegetation such as trees, shrubs, and grass on or adjacent to the site of the work which is not to be removed and which does not unreasonably interfere with the construction work. Care shall be taken in removing trees authorized for removal to avoid damage to vegetation to remain in place. Any limbs or branches of trees broken during such operations or by the careless operation of equipment or by workmen shall be trimmed with a clean cut and painted with a tree pruning compound as approved by the Engineer.

The Contractor will protect from damage all existing improvements or utilities at or near the site of the work, the location of which is made known to him, and will repair or restore any damage to such facilities resulting from failure to comply with the requirements of this Contract or the failure to exercise reasonable care in the performance of the Work. If the Contractor fails or refuses to repair any such damage promptly, the Owner may have the necessary work performed and charge the cost thereof to the Contractor.

The Contractor shall enclose the trunks of trees adjacent to his work with substantial wooden boxes of such height as may be necessary to protect them from injury from piled material, from equipment, from his operation, or otherwise due to his work unless the tree is to be removed. Excavating machinery and cranes shall be of suitable type and shall be operated with care to prevent injury to trees not to be removed, particularly to overhanging branches and limbs.

On paved surfaces, the Contractor shall not use or operate tractors, bulldozers or other power operated equipment, the treads or wheels of which are so shaped as to cut or otherwise injure such surfaces.

3.35 RESTORATION OF PROPERTY: All existing surfaces, including lawns, grassed and planted areas, which have been injured by the Contractor's operations, shall be restored to a condition at least equal to that in which they were found immediately before work was begun. Suitable materials and methods shall be used for such restoration. All restored plantings shall be maintained by cutting, trimming, fertilizing, etc., until acceptance. The restoration of existing property or structures shall be done as promptly as practicable and shall not be left until the end of the construction period.

3.36 INTERFERENCE WITH AND PROTECTION OF STREETS: The Contractor shall not close or obstruct any portion of a street, road, or private way without obtaining permits therefore from the proper authorities. If any street, road or private way shall be rendered unsafe by the Contractor's operations, he shall make such repairs or provide such temporary ways or guards as shall be acceptable to the proper authorities.

The Contractor, who shall assume and have full responsibility for the adequacy and safety of provisions made therefore, shall maintain streets, roads, private ways, and walks not closed passable and safe.

The Contractor shall, at least 24 hours in advance, notify the highway, police and fire departments in writing, with a copy to the engineer, if the closure of a street or road is necessary. He shall cooperate with the police department in the establishment of alternate routes and shall provide adequate detour signs, plainly marked and well lighted, in order to minimize confusion.

3.37 WORK IN STATE, CITY AND COUNTY RIGHTS-OF-WAY: Attention is directed to the fact that work will be going on in County, City and/or State rights-of-way. The Owner has obtained permission for the Contractor to encroach on these rights-of-way for work.

The Contractor will be required to conform to the requirements of the South Carolina Department of Transportation, the Richland County Public Works Department, and the Forest Acres Public Works Department, as appropriate for each particular right-of-way, while working within the rights-of-way.

Attention is directed to the fact that existing drainage pipes and ditches will be disturbed during the course of work. Any pipe that is damaged during construction shall be replaced with new pipe of the same size and material. Drainage ditches disturbed by the construction are to be graded to drain and grassed upon completion of the construction.

3.38 SCDHEC DISTRICT ENGINEER INSPECTION: All of the work constructed on this project, related to water and sewer lines and appurtenances, is subject to the inspection and approval by the South Carolina Department of Health and Environmental Control District Engineer. This inspection and acceptance is in addition to inspection and acceptance of the Engineer.

3.39 NOT USED

3.40 TRAFFIC CONTROL: The Contractor will comply with the United States Department of Transportation manual entitled Manual on Uniform Traffic Control Devices-Millennium Edition and provide traffic control as required and approved by the South Carolina Department of Transportation and the North Charleston Public Works Department, as appropriate for each particular road.

Upon completion and acceptance of the work or as the need for temporary traffic control devices ceases, the Contractor shall remove them. Signs shall be used where warranted to maintain

traffic or to call attention to conditions on, or adjacent to, the construction work. Such signs shall be removed when they are no longer required.

All traffic control and marking devices shall be in accordance with the provisions of the Manual on Uniform Traffic Control Devices-Millennium Edition. Upon completion and acceptance of the work or as the need for temporary traffic control devices ceases, they shall be removed by the Contractor and shall remain the property of the Contractor.

3.41 DANGER SIGNALS AND SAFETY DEVICES: The Contractor shall make all necessary precautions to guard against damages to property and injury to persons. He shall put up and maintain in good condition, sufficient red or warning lights at night, suitable barricades and other devices necessary to protect the public.

In case the Contractor fails or neglects to take such precautions, the Owner may have such lights and barricades installed and charge the cost of this work to the Contractor. Such action by the Owner does not relieve the Contractor of any liability incurred under this Specification or contract.

3.42 CONSTRUCTION DRAINAGE: The Contractor shall furnish all labor, materials and necessary equipment for the temporary control of surface water and seepage water during construction and keep all excavations, pits and trenches free from water at all times.

The Contractor shall furnish and operate pumps and other equipment required. Dikes and ditches shall be constructed around excavations and elsewhere as necessary to prevent surface water from flooding the excavations or standing in areas adjacent to excavations, in work areas or in material storage areas. The Contractor shall take all necessary precautions to protect adjacent areas and properties at points other than that which would be considered the natural flow, prior to construction, without the expressed consent of the Owner in writing with a copy to the Engineer. He shall take steps to prevent the erosion of soil, earth and other material and the conduction of the eroded materials onto adjacent properties and shall be responsible for the removal of such materials and the restoration of adjacent areas to their original condition.

3.43 RETURNS OF DRAWINGS: All copies of Drawings, Specifications and other Documents furnished by the Owner or the Engineer to the Contractor may be used only in connection with prosecution of the Work and shall be returned by the Contractor upon completion of the Work.

3.44 SITE INVESTIGATION: The Contractor acknowledges that he has investigated and satisfied himself as to the conditions affecting the Work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, river stages, water table, tides or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the Work.

The Contractor further acknowledges that he has satisfied himself as to character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory

work done by the Owner, as well as from information presented by the Drawings and Specifications made a part of this Contract.

Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work. The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Owner.

3.45 SOIL EROSION AND SEDIMENT CONTROL: The Contractor's attention is directed to the fact that unless exposed earth areas are properly cared for during construction, they may result in substantial sedimentation damage downstream from the construction area.

The Contractor shall be responsible for conducting his site grading and drainage operations in such manner as to prevent soil erosion of the construction site work areas. He shall at all times provide satisfactory means to prevent the movement and washing of soil onto pavements or into adjacent ditches, swales, inlets, and drainage pipes, to avoid the possibility of these structures becoming clogged with soil. He shall promptly repair all areas that may become eroded and shall clear drainage ditches, swales, and structures of siltation.

The Contractor shall indemnify and save harmless the Owner and Engineer from and against any and all claims, demands, fines, or assessments, including attorneys' fees and cost of defense arising out of or caused by the Contractor's failure to provide soil erosion and sediment control.

3.46 SUBSURFACE CONDITIONS: The Contractor shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the Owner by Written Notice of:

1. Subsurface or latent physical conditions of the site differing materially from those indicated in the Contract Documents.

2. Unknown physical conditions at the site of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents.

The Owner shall promptly investigate the conditions, and if he finds that such conditions do so materially differ and cause and increase or decrease in the cost of, or in the time required for, performance of the Work, and equitable adjustment shall be made and the Contract Documents shall be modified by the Change Order. Any claim of the Contractor for adjustment hereunder shall not be allowed unless he has given the required Written Notice: provided that the Owner may, if he determines that the facts so justify, consider and adjust any such claims asserted before the date of final payment.

3.47 SUBCONTRACTING: The Contractor may utilize the services of specialty Subcontractors on those parts of the Work that, under normal contracting practices, are performed by specialty Subcontractors. The Contractor will, without additional expense to the Owner, utilize the

services of specialty Subcontractors on those parts of the Work that are specified to be performed by specialty Subcontractors.

The Contractor shall not award any work to a subcontractor without prior written approval of the Owner, which approval will not be given until the Contractor submits to the Owner a written statement concerning the proposed award to the subcontractor, which statement shall contain such information as the Owner may require. No request for payment will be approved before this list has been received and reviewed by the Owner.

The Contractor shall not award Work to Subcontractor(s) in excess of fifty (50%) percent of the Contract Price without prior written approval of the Owner.

The Contractor will be fully responsible to the Owner for the acts and omissions of his Subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts or omissions of persons directly employed by him.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind Subcontractors to the Contractor by the terms of the Contract Documents insofar as applicable to the Work of Subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provisions of the Contract Documents.

If any other contractor or any subcontractor of such other contractor shall suffer or claim to have suffered loss, damage or delay by reason of the acts or omissions of the Contractor or of any of his subcontractors, the Contractor agrees to assume the defense against any such claim and to reimburse such other contractor or subcontractor for such loss, damage or delay and from and against any and all claims, demands, costs and expenses, including attorney's fees, arising out of, relating to or resulting from such claims.

The Contractor shall be responsible for the coordination of the trades, subcontractors, and material men engaged upon his Work. The Owner or Engineer will not undertake to settle any differences between the Contractor and his subcontractors or between subcontractors. If any Subcontractor on the project, in the opinion of the Engineer, proves to be incompetent or otherwise unsatisfactory, he shall be replaced if and when directed in writing.

3.48 SUPERVISION: The Contractor shall keep on his Work, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Owner. The superintendent shall not be changed except with the consent of the Owner, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ. The superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor. Important directions shall be confirmed in writing to the Contractor. Other directions shall be so confirmed on written request in each case. The Owner shall not be responsible for the acts or omissions of the superintendent or his assistants.

The Contractor shall give efficient supervision to the Work, using his best skill and attention. He shall carefully study and compare all Drawings, Specifications and other instructions and shall at once report to the Owner any error, inconsistency or omission which he may discover.

3.49 TAXES: The Contractor shall promptly pay all federal, state and local taxes which may be assessed against him in connection with the Work or his operations under the agreement and/or the other Contract Documents, including, but not limited to, taxes attributable to the purchase of materials and equipment, to the performance of services, and the employment of persons in the prosecution of the Work.

3.50 TEMPORARY HEAT: The Contractor shall provide temporary heat whenever necessary to protect all Work and materials against injury from dampness and cold and to dry out moisture from the building. Fuel, equipment and method of heating shall be satisfactory to the Owner's Insurer and the Engineer.

3.51 TEMPORARY UTILITIES: The Contractor shall make arrangements for and furnish as a part of the Contract, all electricity, water, lighting and other utilities needed to do the Work called for by the Contract. Any separate contractors having a contract with the Owner shall make arrangements for and share the cost with the Contractor for the use of the required utilities on a prorated schedule based on an agreed basis. All Electrical Work shall comply with the National Electric Code.

The Contractor shall provide and pay for all temporary wiring, switches, connections and meters. The Contractor shall provide sufficient electric lighting so that all work may be done in a workmanlike manner when there is not sufficient daylight.

3.52 UNCOVERING AND CORRECTION OF WORK: The Engineer shall be furnished by the Contractor with every reasonable facility for examining and inspecting the Work and for ascertaining that the Work is being performed in accordance with the requirements and intent of the Contract, even to the extent of requiring the uncovering or taking down of portions of finished Work by the Contractor.

Should the Work thus uncovered or taken down prove satisfactory, the cost of uncovering or taking down and the replacement thereof shall be considered as extra Work unless the original Work was done in violation of the Contract in point of time or in the absence of the Engineer of his inspector and without his written authorization, in which case said cost shall be borne by the Contractor. Should the Work uncovered or taken down prove unsatisfactory, said cost shall likewise be borne by the Contractor.

The inspection of the Work shall not relieve the Contractor of any of his obligations to perform and complete the Work as required by the Contract. Defective Work shall be corrected and unsuitable materials, equipment, apparatus and other items shall be replaced by the Contractor, notwithstanding that such Work, materials, equipment, apparatus and other items may have been previously overlooked or accepted or estimated for payment.

If the Work or any part thereof shall be found defective at any time before the final acceptance of the Work, the Contractor shall forthwith make good such defect in any manner satisfactory to the Engineer. If any materials, equipment, apparatus or other items brought upon the site for use or incorporation in the Work, or selected from the same, are condemned by the Engineer as unsuitable or not in conformity with the Specifications or any of the other Contract Documents, the Contractor shall forthwith remove such materials, equipment, apparatus and other items from the site of the Work and shall at his own cost and expense make good and replace the same. This applies also to any material furnished by the Owner that shall be damaged or rendered defective by the handling of improper installation by the Contractor, his agents, servants, employees or subcontractors.

If the Owner deems it inexpedient to correct Work injured or done not in accordance with the Contract, an equitable deduction from the Contract Price shall be made therefore.

3.53 COOPERATION WITH UTILITIES: The Owner will notify all utility companies, all pipe line owners, or other parties affected, and endeavor to have all necessary adjustments of the public or private utility fixtures, pipe lines, and other appurtenances within or adjacent to the limits of construction, made as soon as practicable.

During the course of construction, the Contractor shall maintain in operating condition all active utilities such as gas, electric, telephone, water, sewer, gutters and other drains encountered in the new utility installation: and shall repair to the satisfaction of the Owner any surface, aerial or subsurface utility damage unless such utility is shown to be abandoned or removed.

Water lines, gas lines, wire line, sewer lines, water and gas meter boxes, water and gas valve boxes, manholes, light standards, cableways, signals, and all other utility appurtenances within the limits of the proposed construction which are to be relocated or adjusted are to be moved by the Owners under separate agreement, except as otherwise noted on the Drawings.

The Drawings will show all known utilities located within the limits of the contract according to information obtained. The Owner does not guarantee the accuracy of the Drawings in this respect. The Contractor shall have considered in his bid all of the permanent and temporary utility appurtenances in their present or relocated position. No additional compensation will be allowed for any delays, inconveniences, or damages sustained by him due to any interference from the said utility appurtenances or the operation of moving them.

Unless otherwise provided, the cost of temporary rearrangement of utilities made only in order to facilitate the construction of the Work will be borne by the Contractor.

3.54 NOT USED

3.55 WORK ADJACENT TO TELEPHONE, POWER AND GAS COMPANY STRUCTURES: Where work is being performed within the telephone company or electric and gas company rights-of-way, the Owner has acquired, or will acquire, permission from these agencies to construct facilities within their rights-of-way or easements. In all cases where work is being

performed near telephone company or electric or gas company facilities, the Contractor will notify the respective companies of areas in which work is being performed.

3.56 WORK BEING PERFORMED NEAR WATER LINES: The Contractor will inform the Columbia Water Department as to the areas where work is being performed. It is required of a Contractor to obtain permission from the Columbia Water Department where alterations to their system are required.

3.57 NOT USED

3.58 UTILITY LOCATIONS: Prior to beginning any excavation, the Contractor shall notify all public utility companies and have their lines located and marked. The following is a list of utility companies and persons to be contacted for utility locations.

	PERSON TO CONTACT (NAME, TITLE, & PHONE NO.)
UTILITY SERVICE OR FACILITY Telephone, Electric, Gas, Cable TV	1-800-922-0983 Palmetto Utility Location Service (call 3 days prior to digging)
Water	City of Columbia (803) 545-3400
Sewer	East Richland County Public Service District (803) 788-1570 (will send field technician to locate)

3.59 VERIFICATION OF DIMENSIONS AND ELEVATIONS: Dimensions and elevations indicated on the Drawings in reference to existing structures, location of utilities, sewer inverts, or other information on existing facilities, are the best available data obtainable but are not guaranteed by the Engineer. The Engineer will not be responsible for their accuracy. Before proceeding with any work dependent upon the data involved, the Contractor shall field check and verify all dimensions, grades, inverts, lines, elevations, or other conditions or limitations at the site of the work to avoid construction errors or damage to existing facilities. If the Contractor or a subcontractor(s) prior to adequate verification of applicable data performs any work, the Contractor without reimbursement or compensation by the Owner shall assume any resultant extra cost for adjustment of work necessary to conform to existing facilities.

If the Contractor, in the course of the work, finds any discrepancy between the Drawings and the physical conditions of the locality, or any errors or omissions in the Drawings or in the layout as given by survey points and instructions, he shall immediately inform the Engineer, in writing. The Engineer will promptly investigate the reported conditions and issue such instructions as may be necessary for the proper execution of the work. Any work done after such discrepancy and prior to receipt of such instructions shall be at the risk of the Contractor.

4. MATERIALS, EQUIPMENT AND WORKMANSHIP

4.1 CONTRACTOR'S TITLE TO MATERIALS: No materials or supplies for the Work shall be purchased by the Contractor or by any subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants that he has good title to all materials and supplies used by him in the Work, free from all liens, claims or encumbrances.

4.3 CORRECTION OF WORK BEFORE COMPLETION: The Contractor shall promptly remove from the premises all work condemned by the Owner as failing to conform to the Contract Documents, whether incorporated or not and the Contractor shall promptly replace and re-execute his own work in accordance with the Contract and without expense to the Owner and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement. The fact that the Engineer may have previously overlooked such defective work shall not constitute an acceptance of any part of it.

If the Contractor does not remove such condemned work within a reasonable time, fixed by written notice, the Owner may remove it, and after storing it at the job site for 30 days, due written notice thereof being given the Contractor, the Owner may offer the material for sale and removal from the premises. Net proceeds from such sale shall be for the Contractor's credit against the "Owner's Right To Do Work". If the material has no sale value, the Owner may remove it from the premises and/or otherwise dispose of it. The cost of such disposition shall be deducted for payments to the Contractor as provided in Subsection 2.10 entitled OWNER'S RIGHT TO DO WORK.

4.4 CORRECTION OF WORK AFTER COMPLETION: The Contractor shall remedy any defects due to faulty materials or workmanship and pay for any damage to other work resulting therefrom which shall appear within a period of one year from the date of final acceptance of the work except where longer periods are specified and in accordance with the terms of any special guarantees provided in the Contract.

4.5 CORRECTIONS OF WORK AFTER GUARANTEE PERIOD: It shall be the responsibility of the Contractor to permanently correct all defective items called to his attention within the guarantee period, whether such correction is made within the guarantee period or not. The Contract shall not be fully performed until such permanent corrections are made.

4.6 GENERAL GUARANTY: The Contractor warrants to the Owner that all materials and equipment furnished under this Contract will be new unless otherwise specified, and that all Work will be of good quality, free from faults and defects and in conformance with the Contract Documents. All Work not so conforming to these standards may be considered defective. If required by the Owner, the Contractor shall furnish all satisfactory evidence as to the kind and quality of materials and equipment.

Neither the final certificate of payment nor any provision in the Contract Documents nor partial or entire occupancy of the premises by the Owner shall constitute an acceptance of work not

done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship.

The Contractor shall further guarantee for a period of 24 months that any building or buildings, constructed under this Project, shall be watertight and leak proof at every point in every area, except where leaks can be attributed to damage to the building by external forces other than storm or foundation settlement. He shall, immediately upon notification by the Owner of water penetration, determine the source of water penetration and, at his own expense, repair or replace any other damaged material to return the building or buildings to the original accepted condition.

In addition to the foregoing stipulations, the Contractor shall comply with all other guarantees and warranties referred to in any portions of the Contract Documents, the more stringent requirement governing. Unless otherwise specifically stated elsewhere in the Specifications, the date of beginning of all guarantee or warranty periods shall be the date of acceptance of the project.

If for any reason the Contractor cannot guarantee any part of his work using material or construction methods which have been specified or shown, he shall notify the Engineer in writing before Contracts are signed, giving reasons together with the name of the product and data on substitutions he can guarantee. Should the Contractor fail to so notify the Engineer prior to the signing of the Contracts, he will be held to have agreed to guarantee all Work specified of shown.

4.7 WARRANTY REPAIR WORK: The Contractor shall fully and unconditionally warrant the materials and workmanship of the project for a period of two years (except where other warranty periods are specified in other sections of these specifications), beginning on the date of project completion.

The Contractor shall maintain both the Performance Bond and the Payment Bond in force throughout the one-year warranty period (or two year, if a building).

The Contractor warrants that he shall investigate, in a sincere, thorough and workmanlike manner, all claims for warranty work within 48 hours of receipt of notice from the Owner of the need for same of existence of deficient parts or portions of the Project. Workmen responding to such notices shall be skilled craftsmen prepared to perform best quality work. Deficiencies shall be corrected immediately.

The Contractor or his representative, immediately upon investigation of a notice of deficiency, shall deliver a report of his findings in writing within 72 hours of receipt of a warranty work at the Contractors expense therefore.

The Contractor warrants that he shall pay all invoices for warranty work performed by the Owner due to the Contractor's default under this clause. Should the Contractor fail or refuse to pay such invoice rendered by the Owner within 15 days of receipt, the Owner may enter claim with any court of competent jurisdiction for collection of same with interest at the maximum

legal rate, together with all associated legal costs and attorney's fees, as a breach of this Contract.

4.8 HANDLING AND DISTRIBUTION: The Contractor shall handle, haul and distribute all materials and all surplus materials in the different portions of the work as necessary or required; shall provide suitable and adequate storage room for materials and equipment during the progress of the work; and shall be responsible for the protection, loss of, or damage to materials and equipment furnished by him, until the final completion and acceptance of the Work.

Storage and demurrage charges by transportation companies and vendors shall be borne by the Contractor.

4.9 RIGHT TO MATERIALS: Nothing in the Contract shall be construed as vesting in the Contractor any right of property in the materials, equipment, apparatus and other items furnished after they have been installed or incorporated in or attached or affixed to the work or the site, but incorporated, attached or affixed, become the property of the Owner.

4.10 STORAGE OF MATERIAL AND EQUIPMENT: All excavated materials, construction equipment, and materials and equipment to incorporate in the Work shall be placed so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the Work. Materials and equipment shall be kept neatly piled and compactly stored in such locations as will cause a minimum of inconvenience to public travel and adjoining owners, tenants and occupants.\

4.11 MANUFACTURER'S DIRECTIONS: All manufactured articles, material and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer, unless herein specified to the contrary.

If the specifications or plans are contrary to the manufacturer's directions, the Contractor shall contact the manufacturer before proceeding with the Work and the Engineer advised if the manufacturer has any objections to the specified application.

4.12 MATERIALS, SERVICES AND FACILITIES: It is understood that, except otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all labor, supplies and materials, tools, machinery, equipment, transportation, supervision, temporary construction of any nature, and all other services, means and facilities of any nature whatsoever necessary to execute, complete, and deliver the Work within the specified time.

Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the Work. Stored materials and equipment to be incorporated in the Work shall be located so as to facilitate prompt inspection.

Materials, supplies and equipment shall be in accordance with samples submitted by the Contractor and approved by the Engineer.

4.13 MISCELLANEOUS ITEMS: The work to be done by the Contractor, specified and enumerated under this Contract, shall include any minor details of the Work not specifically mentioned in the Specifications or shown on the Drawings, but obviously necessary for the proper completion of the Work, which shall be considered incidental and as being a part of and included with the Work for which prices are given in the Bid. The Contractor will not be entitled to any additional compensation therefor.

Miscellaneous items and accessories which are not specifically mentioned, but which are essential to produce a complete and properly operating installation or usable structure or plant, providing the indicated function, shall be furnished and installed without change in the contract price. Such miscellaneous items and accessories shall be of the same quality standards, including material, style, finish, strength, class, weight and other applicable characteristics as specified for the major component of which the miscellaneous item or accessory is an essential part, and shall be approved by the Engineer before installation. The above requirement is not intended to include major components not covered by or inferable from the Drawings and Specifications.

4.14 MISTAKES OF CONTRACTOR: The Contractor shall promptly correct and make good any and all defects, damages, omissions, or mistakes, for which he and/or his agents, servants, employees or subcontractors are responsible, and he shall pay the Owner all costs, expenses, losses, and damages resulting therefrom or by reason thereof as determined by the Engineer.

4.15 PROTECTION AGAINST ELECTROLYSIS: Where dissimilar metals are used in conjunction with each other, or against concrete surfaces, suitable insulation shall be provided between adjoining surfaces so as to eliminate direct contact and any resultant electrolysis. The insulation shall be bituminous impregnated felt, heavy bituminous coatings, nonmetallic separators or washers, or other approved materials.

4.16 ROYALTIES AND PATENTS: The Contractor shall pay all applicable royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such loss when a particular process or the product of a particular manufacturer or manufacturers is specified, but if the Contractor has information that the process of article specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Owner in writing.

4.17 CONSTRUCTION SCHEDULE: A construction schedule shall be submitted by the Contractor at the PRE-CONSTRUCTION conference for approval by the Engineer.

The construction schedule shall consist of a bar chart incorporating the bid items. Further breakdown of each bid item may be required for clarity. A cost curve shall be plotted on the bar chart. An update of the schedule will be furnished at the Engineer's request, normally with each monthly submittal of Partial Pay Estimate.

The schedule shall be supported by copies of the proposed equipment, quotations showing the item identification, stated delivery time, and the date of expiration of the quotation. Current and

valid quotations are required. These quotations shall be presented to the Engineer with the construction schedule.

4.18 SUBMITTAL SCHEDULE: Within twenty (20) days after execution and delivery of the Contract, the Contractor shall prepare and deliver to the Engineer a Submittal Schedule. This includes a list of all submittals required under the Contract. This list shall identify each major group of shop drawings, coordination drawings and schedules and each sample and the planned submission date for each.

After the Engineer's review of the list of submittals, the Engineer will meet with the Contractor for a joint review and correction and adjustment, as necessary, for agreement on the submittal. In addition, at the meeting the duration of the review period for each submittal will be established. The Contractor's planned submission date for each submittal shall allow no less than fifteen (15) working days for review and appropriate action before approval of the submittal becomes critical to the progress of the Contractor's work. Within five (5) calendar days after the joint review, the Contractor shall make any necessary revisions to the list of submittals, including durations of the review periods, in accordance with the agreements reached during the joint review and submit two (2) revised copies to the Engineer. No application for partial payment will be approved until the submittal schedule is approved. The Engineer shall not review more than two sets of submittal data (original submittal and one re-submittal) for each item or material without compensation by the Contractor. In the event that additional reviews are required, The Contractor shall compensate the Engineer at a rate of \$195.00 per hour for such review.

4.19 SHOP DRAWINGS: Shop Drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are prepared by the Contractor or any Subcontractor, manufacturer, supplier or distributor, and which will illustrate some portion of the Work. It shall be the Contractor's responsibility to furnish Shop Drawings as required by the technical specifications or as requested by the Engineer. These submittals must be made no later than is required by the submittal schedule.

Shop Drawings shall show the principal dimensions, weight, structural and operating features, space required, clearance, type and/or brand of finish or shop coat, grease fittings, etc., depending on the subject of the drawing. When it is customary to do so, when the dimensions are of particular importance, or when so specified, the manufacturer or fabricator as correct shall certify the drawings for the Contract.

When so specified or if considered by the Engineer to be acceptable, manufacturer's specifications, catalog data, descriptive manner, illustrations, etc., may be submitted for approval in place of shop and working drawings. In such case, the requirements shall be as specified for shop and working drawings, insofar as applicable except that the submission shall be in quadruplicate.

The Contractor shall be responsible for the prompt and timely submittal for all shop and working drawings so that there shall be no delay to the work due to the absence of such drawings.

The Contractor shall check the Shop Drawings, shall coordinate them (by means of coordination drawings wherever required) with the work of all trades involved before submission and shall indicate thereon his approval. Drawings and schedules submitted without evidence of the Contractor's approval may be returned for re-submission.

By approving and submitting Shop Drawings, the Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, catalog numbers and similar data, or will do so, and that he has checked and coordinated Shop Drawings with the requirements of the Work and of the Contract Documents.

If drawings or schedules show variations from the contract requirements because of standard shop practice or for other reasons, the Contractor shall describe such variations in his letter of transmittal. If acceptable, the Engineer may approve any or all such variations and issue an appropriate change order. If the Contractor fails to describe such variations he shall not be relieved of the responsibility for executing the work in accordance with the Contract, even though such drawings or schedules may have been approved.

Each Shop Drawing or Coordination Drawing shall have a blank area 5 by 5 inches located adjacent to the title block. The title block shall display the following:

Number and Title of Drawing
Date of Drawing
Revision number and date (if applicable)
Project Title
Name of project building or facility
Name of Contractor
Name of Subcontractor (if applicable)
Clear identity of contents and location of work

Prior to submitting drawings to the Engineer, the Contractor shall check thoroughly all such drawings to satisfy him that the subject matter thereof conforms to the Drawings and Specifications in all respects. All drawings that are correct shall be marked with the date, checker's name, and indication of the Contractor's approval, and then shall be submitted to the Engineer; other drawings shall be returned for correction.

The Contractor shall stamp all drawings that are to be submitted to the Engineer for approval. The rubber stamp shall incorporate the following items:

PROJECT TITLE _____
CONTRACTOR'S NAME _____
APPROVED BY _____ DATE _____
SPECIFICATION SECTION _____ TRANSMITTAL NO. _____

The review of the Shop Drawings will be general only and shall not relieve or in any respect diminish the responsibility of the Contractor for details of design, dimensions, etc., necessary for

the proper fitting and construction of the work as required by the Contract and for achieving the result and performance specified thereunder.

Should the Contractor submit for approval equipment that required modifications to the structures, piping, layout, etc., detailed on the Drawings, he should also submit for approval details of the proposed modifications. If such equipment and modifications are approved, the Contractor, at no additional cost to the Owner, shall do all work necessary to make such modifications. Required structural changes shall be designed and detailed by an Engineer registered in the state in which the project will be constructed. Drawings shall be signed and show registration number or may have seal affixed.

A copy of a transmittal letter containing Project name, Contractor's name, number of drawings, titles, specifications section, and other pertinent data shall accompany submission of Shop Drawings. The submittal shall include the following:

Four (4) legible copies (hard or electronic) of Shop Drawings.

The Engineer will perform the review of Shop Drawings as follows:

1. When the submittal conforms fully to the Contract Drawings and Specifications, the Engineer will approve it. The reproducible of each drawing or page of approved submittals will be stamped approved, signed, dated and returned to the Contractor. The Contractor shall make no changes on approved drawings. If the Contractor desires to make any changes from approved drawings, or pages of approved submittals, he shall notify the Engineer in writing that the approved material has been withdrawn and shall submit the substitution set in accordance with the above procedure.
2. When the submittal clearly does not conform to the Contract Drawings and Specifications, the Engineer will disapprove it by stamping "Rejected". Rejected submittals shall be corrected and resubmitted within fourteen (14) calendar days from the date of rejection. Submittals that are rejected shall not be released for any work.
3. When the submittal has only minor deviations from the Contract Drawings and Specifications, the Engineer will note the deviations and omissions as may be appropriate and approve the submittal subject to the notations by stamping it "Approved as Noted". Approved as Noted submittals may be released for fabrication of work at the Contractor's risk; in any event the submittal shall be corrected and resubmitted for approval within fourteen (14) calendar days from the date of approval as noted.

The Contractor shall be responsible for delays resulting from the rejection or approval as noted of incomplete, inadequate, incorrect or otherwise unacceptable submittals.

The Contractor shall assure that only drawings and pages of printed materials bearing the Engineer's "Approved" stamp are allowed on the job site.

The Contractor shall submit, at the completion of the Project, one set of all reviewed and correct shop drawings, catalog cuts, and descriptive literature for all Work previously submitted. These sets shall be sent to the Engineer for the Owner before the final Certificate of Payment is issued.

4.20 OPERATING AND MAINTENANCE MANUALS: One copy of each is required. Operating and Maintenance (O&M) Manual must be submitted to the Engineer with the first submittal of shop drawings. Five additional copies of each required Operating and Maintenance Manual must be submitted to the Engineer within fourteen (14) calendar days of the return of the approved shop drawings to the Contractor. No payment will be approved on any equipment for which Operating and Maintenance Manuals are required until the Engineer receives the Operating and Maintenance Manuals. These O&M manuals must be addressed specifically to the piece of equipment supplied and shall not be general in nature; each item must be clearly identified and located. Each page must be printed on 8 ½” x 11” paper or folded to that size in a manner which will be suitable for insertion in a 3-ring binder.

4.21 SAMPLES: Samples are physical examples furnished by the Contractor to illustrate materials, equipment or workmanship, and to establish standards by which the Work will be judged. It shall be the Contractor’s responsibility to furnish samples as required by the technical specifications or as required by the Engineer. These samples must be submitted no later than is required by the Submittal Schedule.

Each sample shall have a label indication:

- Project Title
- Name of project building or facility
- Name of Contractor
- Name of Subcontractor (if applicable)
- Identification of material with specification section
- Name of producer and brand (if any)

Samples shall be submitted in duplicate unless otherwise noted in the technical specifications and shall be accompanied by a copy of a transmittal letter containing Project Name, Contractor’s Name, number of samples, specification section and other pertinent data.

If the Engineer so requires, either prior to or after commencement of the work, the Contractor shall submit samples of materials for such special tests, as the Engineer deems necessary to demonstrate that they conform to the Specifications. Such samples shall be furnished, taken, stored, packed and shipped by the Contractor as directed. Except as otherwise expressly specified, the Contractor shall make arrangements for, and pay for, the tests.

All samples shall be packed so as to reach their destination in good condition. To insure consideration of samples, the Contractor shall notify the Engineer by letter that the samples have been shipped and shall properly describe the samples in the letter. The letter of notification shall be sent separate from and should not be enclosed with the samples.

The Contractor shall submit data samples, or place his orders, sufficiently early to provide ample time for consideration, inspection, testing, and approval before the materials and equipment are needed for incorporation in the work. The consequences of his failure to do so shall be the Contractor's sole responsibility.

In order to demonstrate the proficiency of workmen, or to facilitate the choice among several textures, types, finishes, surfaces, etc., the Contractor shall provide such samples of workmanship of wall, floor finish, etc., as may be required.

When required, the Contractor shall furnish to the Engineer triplicate sworn copies of manufacturer's shop or mill tests (or reports from independent testing laboratories) relative to materials, equipment performance ratings, and concrete data.

4.22 INSPECTION AND TESTING: All materials and equipment used in the construction of the Project shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the Contract Documents.

The Owner shall provide all inspection and testing services not required by the Contract Documents.

The Contractor shall provide at his expense the testing and inspection services required by the Contract Documents.

If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any Work to specifically be inspected, tested, or approved by someone other than the Contractor, the Contractor will give the Engineer timely notice of readiness. The Contractor will then furnish the Engineer the required certificates of inspection, testing or approval.

Inspections, tests, or approvals by the Engineer or others shall not relieve the Contractor from his obligations to perform the Work in accordance with the requirements of the Contract Documents.

The Engineer and his representatives will at all times have access to the Work. In addition, authorized representatives and agents of any participating Federal or State agency shall be permitted to inspect all work, materials, payrolls, records, records of personnel, invoices of materials, and other relevant data and records. The Contractor will provide proper facilities for such access and observation of the Work and also for any inspection or testing thereof.

If any Work is covered contrary to the written instructions of the Engineer, it must, if requested by the Engineer, be uncovered for his observation and replaced at the Contractor's expense.

If the Engineer considers it necessary or advisable that covered Work be inspected or tested by others, the Contractor, at the Engineer's request, will uncover, expose or otherwise make available for observation, inspection or testing as the Engineer may require, that portion of the Work in question, furnishing all necessary labor, materials, tools and equipment. If it is found that such Work is defective, the Contractor will bear all the expenses of such uncovering,

exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such Work is not found to be defective, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate Change Order shall be issued.

4.23 SUBSTITUTIONS: The Contractor may recommend the substitution of a material, article, or piece of equipment of equal function for those referred to in the Contract Documents by reference to brand name or catalogue number, and if, in the opinion of the Engineer, such material, article, or piece of equipment is of equal function to that specified, the Engineer may approve its substitution and use by the Contractor. Any cost differential shall be deductible from the Contract Price and the Contract Documents shall be appropriately modified by Change Order.

The Contractor warrants that if substitutes are approved, no major changes in the function or general design of the Project will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the Contract Price or Contract Time.

4.24 "OR EQUAL" CLAUSE: The phrase "or equal" shall be construed to mean that material or equipment will be acceptable only when in the judgment of the Engineer they are composed of parts of equal quality or equal workmanship and finish and are designed and constructed to perform or accomplish the desired result as efficiently as the indicated brand, pattern, grade, class, make or model.

When a material, article or piece of equipment is identified on the Drawings or in the Specifications by the reference to manufacturers' or vendors' names, trade names, catalogue numbers, etc., it is intended merely to establish a standard of quality and function; and any materials, article, or equipment of other manufactures and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed, is, in the opinion of the Engineer, of equal substance and function. It shall not be purchased or installed by the Contractor without the Engineer's written approval.

4.25 WAGES AND OVERTIME COMPENSATION: The Contractor and each of his subcontractors shall comply with all applicable State and local laws or ordinances with respect to the hours worked by laborers and mechanics engaged in work on the project and with respect to compensation for overtime.

4.26 NO WAIVER: Neither the inspection by the Owner or the Engineer, nor any order, measurement, approval, determination, decision or certificate by the Engineer, nor any order by the Owner for the payment of money, nor any payment for or use, occupancy, possession or acceptance of the whole or any part of the work by the Owner, nor the extension of time, nor any other act or omission of the Owner or the Engineer shall constitute or be deemed to be an acceptance of any defective or improper work, materials, or equipment nor operate as a waiver of any requirement or provision of the Contract, or of any remedy, power or right of or herein

reserved to the Owner, nor of any right and remedy provided for herein or by law, the Owner shall be entitled as of right to a writ of injunction against any breach or threatened breach of the Contract by the Contractor, by his Subcontractors or by any other person or persons.

4.27 WORK TO CONFORM: During its progress and on its completion, the work shall conform truly to the lines, levels, and grades indicated on the Drawings or given by the Engineer and shall be built in a thoroughly substantial and workmanlike manner, in strict accordance with the Drawings, Specifications, and other Contract Documents and the directions given from time to time by the Engineer.

All work done without instruction having been given therefore by the Engineer, without prior lines or levels, or performed during the absence of the Engineer, will not be estimate of paid for except when such work is authorized by the Engineer in writing. Work so done may be ordered uncovered or taken down, removed, and replaced at the Contractor's expense.

5. INSURANCE, LEGAL RESPONSIBILITY AND SAFETY

5.1 COMPLIANCE WITH LAWS: The law of the State of South Carolina shall govern the Contract. The Contractor shall abide by all local and State Laws or ordinances to the extent that such requirements do not conflict with more stringent Federal laws or regulations. The Contractor shall keep himself fully informed of all existing and future Federal, State and local laws, ordinances, rules and regulations affecting those engaged or employed on the work, the materials and equipment used in the work or the conduct of the work, and of all orders, decrees and other requirements of bodies or tribunals having any jurisdiction or authority over the same, including, but not limited to, the US Department of Labor and Bureau of Standards Safety and Health Regulations for Construction and its amendments as set up under the Williams-Steiger Occupational Safety and Health Act of 1970. If any discrepancy or inconsistency is discovered in the Drawings, Specifications or other Contract Documents in relation to any such law, ordinance, rule, regulation, order, decree or other requirement, the Contractor shall forthwith report the same to the Engineer in writing.

The Contractor shall at all times observe and comply with, and cause all his agents, servants, employees, and subcontractors to observe and comply with, all such existing requirements, and he shall protect, indemnify and save harmless the Owner, its officers, agents, servants, and employees from and against any and all claims, demands, suits, proceedings, liabilities, judgments, penalties, losses, damages, costs and expenses, including attorney's fees, arising from or based upon any violation or claimed violation of any such law, ordinance, rule, regulation, order, decree, or other requirement, whether committed by the Contractor or any of his agents, servant employees, or subcontractors.

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

5.3 LIENS: If at any time any notice of lien is filed for labor performed or materials or equipment manufactured, furnished, or delivered to or for the Work, the Contractor shall, at its own cost and expense, promptly discharge, remove or otherwise dispose of the same, and until such discharge, removal or disposition, the Owner shall have the right to retain from any moneys payable hereunder and amount which, in its sole judgment, it deems necessary to satisfy such liens and pay the costs and expenses, including attorney's fees, of defending any actions brought to enforce the same or incurred in connection therewith or by reason thereof.

5.4 CLAIMS: If at any time there is any evidence of any claims for which the Contractor is or may be liable or responsible hereunder, the Contractor shall promptly settle or otherwise dispose of the same, and until such claims are settled or disposed of, the Owner may retain from any moneys which would otherwise be payable hereunder so much thereof as, in its judgment, it may deem necessary to settle or otherwise dispose of such claims and to pay the costs and expenses, including attorney's fees of defending any actions brought to enforce such claims or incurred in connection therewith or by reason thereof.

5.5 PERFORMANCE BOND AND PAYMENT BOND: Unless otherwise noted in the Supplemental Conditions, a Performance Bond and a Payment Bond are required. The Contractor shall obtain a Performance Bond and Payment Bond, (acceptable to the Owner in a surety company authorized to do business in the same state in which the Project is constructed), each for the full amount of the Contract Sum, The bonds shall guarantee the Contractor's faithful performance of the Contract and the payment of all obligations arising thereunder. The bonds shall remain in force until:

1. The Project has been completed and accepted by the Owner;
2. The provisions of all guaranteed required by these Contract Documents have been fulfilled or the time limitation for all guarantees has expired; and
3. The time for the filing of all mechanics' liens has expired after which it shall become void.

The Contractor shall pay all charges in connection with the bonds as a part of the Contract. One executed copy of the bonds shall be attached to each copy of the Contract before they are returned to the Engineer for the Owner's signature.

If the Contractor defaults, the Contractor or his Surety shall reimburse the Owner for any additional Engineering fees for additional services made necessary because of the Contractor's default.

5.6 ADDITIONAL OR SUBSTITUTE BOND: If at time the Owner for justifiable cause, shall be or become dissatisfied with the surety or sureties for the Performance and/or Payment Bonds, the Contractor shall, within 5 days after notice from the Owner to do so, substitute an acceptable bond (or bonds) in such form and sum and signed by such other surety or sureties as may be

satisfactory to the Owner. The Contractor shall pay the premiums on such bond. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished such an acceptable bond to the Owner.

5.7 CHANGES NOT TO AFFECT BONDS: It is distinctly agreed and understood that any changes made in the Work or the Drawings or Specifications therefore (whether such changes increase or decrease the amount thereof or the time required for its performance) or any changes in the manner or time of payments made by the Owner to the Contractor, or any other modifications of the Contract, shall in no way annul, release, diminish or affect the liability of the Surety on the Contract Bonds given by the Contractor, it being the intent hereof that notwithstanding such changes the liability of the Surety on said bonds continue and remain in full force and effect

5.8 OWNER'S INSURANCE AUTHORITY: During all phases of construction, the Contractor will be required to perform his operations so as to comply expeditiously with the recommendations of the Owner's Insurance Authority.

5.9 ASSIGNMENTS: The Contractor shall not assign the whole or any part of this Contract or any moneys due or to become due hereunder without written consent of the Owner. If the Contractor assigns all or any part of the moneys due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that is agreed that the right of the assignee in and to any moneys due or to become due to the Contractor shall be subject to prior claims of all persons, firms, and corporations for services rendered or materials supplied for the performance of the work called for in this Contract.

5.10 INSURANCE: The Contractor shall not commence any work until he obtains, at his own expense, all required insurance (such as Builders Risk for Fire, Theft, Equipment Damage, All Risk, and Flood, Workers Compensation, etc. as required). Such insurance must have the approval of the Owners as to limit, form, and amount. The contractor will not permit any Subcontractor to commence work on this project until the Subcontractor has complied with the same insurance requirements.

The Contractor shall furnish the Owner with the certificates showing the type, amount, class of operations covered, effective dates and dates of expiration of policies. Such certificates shall also contain substantially the following statement: "The insurance covered by this certificate will not be canceled or materially altered, except after ten (10) days notice in writing and delivered by registered mail to the Owner." Should any policy be canceled before final payment by the Owner to the Contractor and the Contractor fail immediately to procure other insurance as specified, the Owner reserved the right to procure such insurance and to deduct the cost thereof from any sum due the Contractor under this Contract.

Any insurance bearing on adequacy of performance shall be maintained after completion of the project for the full guaranty period. Should such insurance be canceled before the end of the guaranty period and the Contractor fails immediately to procure other insurance as specified, the Owner reserves the right to procure such insurance and to charge the cost thereof to the Contractor.

Nothing contained in these insurance requirements is to be construed as limiting the extent of the Contractor's responsibility for payment for damages resulting from his operations under this Contract.

The Contractor is required to obtain and maintain for the full period of the Contract the following types of insurance coverage with limits not less than stated below:

A. **WORKER'S COMPENSATION INSURANCE:** As required by South Carolina law and for all of his employees to be engaged in work at the site of the project under this Contract and, in case of any worker's work sublet, the Contractor shall require the Subcontractor similarly to provide Worker's Compensation Insurance for all of the letter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Worker's Compensation Insurance. In case any class of employees engaged in hazardous work on the project under this Contract is not protected under the Worker's Compensation Statute, the Contractor shall provide and shall cause each subcontractor to provide adequate employer's liability insurance for the protection of such of his employees as are not otherwise protected.

B. **COMPREHENSIVE GENERAL LIABILITY:**

	Bodily Injury Per Person	Bodily Injury Per Accident	Property Damage
Premised and Operations	250,000	500,000	100,000
Elevator Liability	250,000	500,000	100,000
Contractor's Protective Liability	250,000	500,000	100,000
Products Liability, Including Completed Operations Coverage	250,000	500,000	100,000

C. **COMPREHENSIVE AUTOMOBILE LIABILITY:**

All Owner Automobiles	250,000	500,000	100,000
Non-Owned Automobiles	250,000	500,000	100,000
Hired Car Coverage	250,000	500,000	100,000

D. **SUBCONTRACTOR'S LIABILITY INSURANCE:**

Same limits as required by the General Contractor.

5.11 ORAL AGREEMENTS: No oral order, objection, claim of notice by any party to the others shall affect or modify any of the terms or obligations contained in any of the Contract Documents, and none of the provisions of the Contract Documents shall be held to be waived or modified by reason of any act whatsoever, other than by a definitely agreed waiver or

modification thereof in writing, and no evidence shall be introduced in any proceeding of any other waiver or modification.

5.12 SAFETY: In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property affected directly by his operations during the performance of the work. This requirement will apply continuously 24 hours per day until acceptance of the Work by the Owner and shall not be limited to normal working hours.

The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

1. All employees on the Work and all other persons who may be affected thereby;
2. All the Work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor or any of the Subcontractors of Sub-subcontractors; and
3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

The Contractor shall comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. He shall erect and maintain, as required by existing conditions and progress of the Work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.

When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution of the Work, the Contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel.

The Contractor shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated in writing by the Contractor to the Owner and the Engineer.

The Contractor shall not load or permit any part of the Work to be loaded so as to endanger its safety.

6. PROGRESS AND COMPLETION OF WORK

6.1 NOTICE TO PROCEED: Following the execution of the Agreement by the Owner and the Contractor, the Owner shall give written Notice to Proceed with the work to the Contractor. The Contractor shall begin and shall prosecute the work regularly and uninterruptedly thereafter (except as provided for herein) with such force as to secure the completion of the work within the Contract Time.

6.2 CONTRACT TIME: The Contractor shall complete, in as acceptable manner, all of the work contracted for in the time stated in the Agreement. Computation of Contract Time shall commence the day to be specified in the Notice to Proceed and every calendar day following, except as herein provided, shall be counted as Contract Time.

6.3 SCHEDULE OF COMPLETION: The Contractor shall submit, at such times as may reasonably be requested by the Engineer, schedules showing the order in which the Contractor proposes to carry on the Work, with dates at which the Contractor will start the various parts of the Work, and estimated date of completion of each part.

6.4 WORK CHANGES: The Owner may, as the need arises, order changes in the work through additions, deletions, or modification to the extent of 25% of the Contract Amount, without invalidating the Contract. Compensation and time of completion affected by the change shall be adjusted at the time of ordering such change.

6.5 EXTRA WORK: New and unforeseen items of work found to be necessary, and which cannot be covered by an item or combination of items for which there is a Contract Price, shall be classed as Extra Work. The Contractor shall do such Extra Work and furnish such materials as may be required for the proper completion or construction of the whole work contemplated, upon written order from the Owner as approved by the Engineer. In the absence of such written order, no claim for Extra Work shall be considered. Extra Work shall be performed in accordance with these Contract Documents where applicable and work not covered by such shall be done in accordance with the best construction practice and in a workmanlike manner. Extra Work required in an emergency to protect life and property shall be performed by the contractor as required.

6.6 EXTENSION OF CONTRACT TIME: A delay beyond the Contractor's control occasioned by an Act of God, by act or omission on the part of the Owner or by strikes, lockouts, fire, etc., may entitle the Contractor to an extension of time in which to complete the work as agreed by the Owner, provided, however, that the Contractor shall immediately give written notice to the Owner of the cause of such delay.

Act of God shall mean an earthquake, flood, cyclone or other cataclysmic phenomenon of nature. Rain, wind, flood, or other natural phenomenon of normal intensity for the locality shall not be construed as an Act of God and no reparation shall be made to the Contractor for damage to the Work resulting therefrom.

All claims for extension of time shall be made in writing to the engineer no more than twenty days after the occurrence of the delay; otherwise they shall be waived. In the case of continuing cause of delay only one claim is necessary. Any claim should include complete justification for the extent of the delay claimed.

The Subsection does not exclude the recovery of damages for delay for either party under other provisions of the Contract Documents.

6.7 ENGINEER'S CERTIFICATE OF SUBSTANTIAL COMPLETION: When the work to be performed under this Contract is substantially completed in accordance with the Contract Documents, the Engineer shall prepare an Engineer's Certificate of Substantial Completion to be acknowledged and accepted by the Owner and the Contractor. The Certificate may list items to be completed or corrected but such Certificate shall not relieve the Contractor of his obligation to complete all work, whether listed or not, in accordance with the Contract Documents nor will it preclude any right the Owner may have for recourse in accordance with the Contract Documents.

6.8 TERMINATION OF CONTRACTOR'S RESPONSIBILITY: The Contract will be considered complete when all work has been finished, the final review made up by the Engineer, and the project accepted in writing by the Owner. The Contractor's responsibility shall then cease, except as set forth in his Performance Bond, as provided in Subsection 4.6 entitled GENERAL GUARANTY, and as provided in Subsection 6.9 entitled CORRECTION OF FAULTY WORK AFTER FINAL PAYMENT.

6.9 CORRECTION OF FAULTY WORK AFTER FINAL PAYMENT: The making of the final payment by the Owner to the Contractor shall not relieve the Contractor of responsibility for faulty materials or workmanship. The Contractor shall promptly replace any such defects discovered within one year, except where longer periods are specified, from the date of written acceptance of the work.

6.10 PROGRESS SCHEDULE: Within twenty (20) days after execution and delivery of the Agreement and not less than ten (10) days prior to making an application for partial payment, the Contractor shall prepare and deliver to the Engineer a Progress Schedule on forms approved by the Engineer.

The schedule shall be set up in a Critical Path format and shall show the proposed dates of commencement and completion of the various subdivisions of work required under the Contract Documents.

The schedule shall show the dates of commencement and completion of the various subdivisions of work required by the Contract Documents and all activities required to accomplish the Work. No activity included in the schedule shall have duration greater than fifteen (15) days. After approval of the Submit Schedule, the Contractor shall incorporate this schedule into the CPM schedule.

The schedule shall be updated monthly. No progress payments will be made unless application is accompanied by the updated schedule.

6.11 SCHEDULES, REPORTS AND RECORDS: The Contractor shall submit to the Owner such schedules of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable as are required by the Contract Documents for the Work to be performed.

The Contractor shall also submit, in a format as approved by the Engineer, a schedule of payments that he anticipates he will earn during the course of the Work.

6.12 ABANDONMENT OF WORK OR OTHER DEFAULT: The Contractor may be declared in DEFAULT of the contract for the following reasons:

If the CONTRACTOR:

1. abandons the work.
2. sublets any part of the work without previous written permission of the OWNER.
3. assigns the contract or any moneys payable hereunder in any manner other than as specified herein or, if at any time the Engineer shall be of the opinion, and shall so certify in writing, that:
 1. The conditions herein specified as to rate of progress are not being complied with.
 2. The work or any part thereof is being unnecessarily or unreasonably delayed.
 3. The Contractor has violated or is in default under any of the provisions of the Contract.
 4. The Contractor becomes bankrupt or insolvent.
 5. The Contractor goes or is put into liquidation or dissolution, either voluntarily or involuntarily.
 6. The Contractor petitions for an arrangement or reorganization under the Bankruptcy Act.
 7. The Contractor makes a general assignment for the benefit of creditors or otherwise acknowledges insolvency.

Upon a finding of DEFAULT by the Contractor, the Owner may notify the Contractor in writing with a copy of such notice mailed to the Surety, to discontinue such work or any part thereof.

The Contractor shall discontinue such work or such part thereof as the Owner may designate; and the Owner may, upon giving notice, by contract or otherwise as it may determine, complete the work or such part thereof and charge the entire cost and expense of so completing the work or such part thereof to the Contractor as specified under 2.10: OWNERS RIGHT TO DO WORK.

In addition to the said entire cost and expense of completing the work, the Owner shall be entitled to reimbursement from the Contractor and the Contractor agrees to pay the Owner any losses, damages, costs and expenses, including attorneys' fees, sustained or incurred by the Owner by reasons of any of the foregoing causes.

For purposes of such completion the Owner may for itself or for any contractors employed by the Owner take possession of any and use or cause to be used any and all materials, equipment, plant machinery, appliances, tools, supplies and such other items of every description that may be found or located at the site of the Work. No equipment or materials may be removed from the Work without the written consent of the Owner.

All costs, expenses, losses, damages, attorneys' fees and any and all other charges incurred by the Owner under this Subsection shall be charged against the Contractor and deducted and/or paid by the Owner out of any moneys due or payable or to become due or payable to the Contractor under the Contract.

In computing the amounts chargeable to the Contractor, the Owner shall not be held to a basis of the lowest prices for which the completion of the work or any part thereof might have been accomplished; but all sums actually paid or obligated therefore to effect its prompt completion shall be charged to and against the account of the Contractor.

In case the costs, expenses, losses, damages, attorneys' fees and other charges together with all payment there-to-fore made to or for the account of the Contractor are less than the sum which would have been payable under the Contract if the work had been properly performed and completed by the Contractor, the Contractor shall be entitled to receive the difference.

In case such costs, expenses, losses, damages, attorneys' fees and other charges, together with all payments there-to-fore made to or for the account of the Contractor, shall exceed the said sum, the Contractor shall pay the amount of the excess to the Owner.

6.13 FINAL INSPECTION: When the work has been completed and finished in accordance with the Contract, the Contractor shall notify the OWNER in writing, and request a final inspection.

The Owner and Engineer shall jointly review the work, after the Engineer is otherwise satisfied that all work on the project has been substantially completed in accordance with the contract documents and change orders.

A list shall be made of all deviations from the Contract requirements (commonly termed "punch list") and a copy of such list furnished to the Contractor. The Contractor shall with reasonable haste remedy all defects so noted and shall notify the Owner upon the completion of such work.

When inspection by the Owner's authorized representatives shows the work to be complete in accordance with the Contract, application for final payment may be made.

After project completion, funds may be withheld from the Contractor only if they are required to insure specific performance of deficient portions of the contract. The contractor shall be required to provide a representative for all work reviews and regulatory agency inspections. Work noted as requiring the attention of the Contractor, after satisfaction of the "Final Punch List" shall be considered as warranty work.

7. PAYMENTS TO THE CONTRACTOR

7.1 PRICES FOR WORK: The Owner shall pay and the Contractor shall receive the prices stipulated in the Bid made a part hereof as full compensation for everything performed and furnished and for all risks and obligations undertaken by the Contractor under and as required by the Contract.

7.2 SCHEDULE OF VALUES: Except in cases where unit prices form the basis for payment under the Contract, the Contractor shall, within twenty (20) days of the execution of the Contract and not less than ten (10) days prior to making an application for partial payment, submit to the Owner in a form approved by the Owner a schedule of values showing a breakdown of the Contract Sum itemized by trade and/or specification sections or as otherwise directed by the Owner and for each item shall show the total value including the Contractor's overhead and profit. Upon approval by the Owner, this schedule will be used in determining the value of the work done for the purpose of partial payments.

The costs employed in making up any of these schedules will be used only for determining the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the Contract Price.

7.3 APPLICATIONS FOR PARTIAL PAYMENT: Before the first day of each month, or as otherwise directed by the Owner, the Contractor shall make applications for the value of the work done and the materials installed and/or delivered to the site for installation in the project during the previous month.

Such applications shall show the breakdown of the project into the same items as the schedule of values specified in Subsection 7.2 entitled SCHEDULE OF VALUES, and showing for each item the total value, the value previously reported as complete, the value completed during the month, the cumulative value completed and the value remaining to be done.

The application shall also show the value of materials delivered to the site which have not been incorporated into the work and whose value is not included in the amount shown for the work of which they are a part. The value of such materials shall be established by attaching copies of invoices covering the materials to the application,

The application shall include a summary of value of the work performed during the previous month, plus the value of the material delivered to the job site but not incorporated in the work, and minus the amount of the retainage indicated in Subsection 7.4 entitled RETAINAGE.

The Engineer will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing his approval of payment and present the partial payment estimate to the Owner, or return the partial payment estimate to the Contractor indicating in writing his reasons for refusing to approve payment. In the latter case, the Contractor may make the necessary corrections and resubmit the partial payment estimate.

7.4 RETAINAGE: The Owner shall retain ten (10) percent of the amount of each payment until final completion and acceptance of all work covered by the Contract Documents. The Owner at any time, however, after fifty (50) percent of the work has been completed, if he finds that satisfactory progress is being made, may make further partial payments in full on the current and remaining estimates, but amounts previously retained shall not be paid to the Contractor at fifty (50) percent completion.

Any time thereafter, when, in the opinion of the engineer, the progress of the Work is not satisfactory, additional amounts may be retained but in no event shall the total retainage be more than ten (10) percent of the value of the work completed. Upon substantial completion of the work, any amount retained may be paid to the Contractor.

When the Work has been substantially completed except for Work which cannot be completed because of weather conditions, lack of materials or other reasons which in the judgment of the Owner are valid reasons for non-completion, the Owner may make additional payments, retaining at all times an amount sufficient to cover the estimated cost of the Work still to be completed.

7.5 PAYMENTS WITHHELD: The Owner may withhold payment or, on account of subsequently discovered evidence, nullify the whole or part of any application to the extent necessary to protect himself from loss on account of:

1. Defective work not remedied;
2. Claims filed or reasonable evidence indicating the probable filing of claims;
3. Failure of the Contractor to make payments to Subcontractors, material suppliers, or employees;
4. A reasonable doubt that the Contract work can be completed for the balance unpaid;
or
5. Damage to another Contractor.

When the above grounds are removed, payment will be made for the amounts withheld because of them.

7.6 PAYMENT OF APPLICATIONS FOR PARTIAL PAYMENT: Upon verification and approval of the application for partial payment made as specified, the Owner will make payment of the amount found properly due. No payment made to the Contractor nor partial or entire use or occupancy of the Work by the Owner shall be an acceptance of any work or materials not in accordance with this Contract.

7.7 RELEASE OF LIENS: Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall deliver to the Owner a complete and notarized release of all liens arising out of this Contract, or receipts in full in lieu thereof, and if required in either

case, an affidavit that so far as he had knowledge or information the releases and receipts include all the labor and material for which a lien could be filed; but the Contractor may, if any Subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the Owner, to indemnify him against any lien. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all moneys that the latter may be compelled to pay in discharging such a lien, including all costs and reasonable attorneys' fees.

7.8 USE OR PARTIAL PAYMENT NOT ACCEPTANCE: It is agreed that this is an entire contract for one whole and complete work or result and that neither the Owner's entrance upon nor use of the Work or any part thereof nor any partial payments by the Owner shall constitute an acceptance of the Work or any part thereof before its entire completion and final acceptance.

7.9 PAYMENT FOR UNCORRECTED WORK: Should the Owner direct the Contractor not to correct work that has been damaged or that was not performed in accordance with the Contract Documents, an equitable deduction from the Contract Amount shall be made to compensate the Owner for the Uncorrected Work.

7.10 PAYMENT FOR REMOVAL OF REJECTED WORK AND MATERIALS: The removal of work and materials rejected in accordance with Subsection 4.3 entitled CORRECTION OF WORK BEFORE COMPLETION and the re-execution of acceptable work by the Contractor shall be at the expense of the Contractor, and he shall pay the cost of replacing the work of other contractors destroyed or damaged by the removal of the rejected work or materials and the subsequent replacement of acceptable work.

Removal of rejected work or materials and storage of materials by the Owner, in accordance with Subsection 4.3 entitled CORRECTION OF WORK BEFORE COMPLETION, shall be paid by the Contractor within thirty (30) days after written notice to pay is given by the Owner. If the Contractor does not pay the expenses of such removal and after ten (10) days' written notice being given by the Owner of his intent to sell the materials, the Owner may sell the materials at auction or at private sale and will pay the Contractor the net proceeds therefrom after deducting all the costs and expenses that should have been borne by the Contractor.

7.11 PAYMENT FOR EXTRA WORK: Written notice of claims for payment for Extra Work shall be given by the Contractor within ten days after receipt of instructions from the Owner to proceed with the Extra Work and also before any work is commenced, except in emergency endangering life or property. No claim shall be valid unless so made. In all cases, the Contractor's itemized estimate sheets showing all labor and material shall be submitted to the Owner.

Owner's order for Extra Work shall specify any extension of the Contract Time and one of the following methods of payment:

1. Unit price or combinations or unit prices which form the basis of the original Contract.
2. A lump sum based on the Contractor's estimate and accepted by the Owner.

3. Net cost plus a fixed fee. Net costs are defined as follows:

3.1 Labor costs, including time of foreman while engaged directly upon extra work at rates not greater than the scale of rated for each respective classification of labor customary in the area where the work is performed for each respective job classification.

3.2 Labor, insurance, and taxes, including amounts paid on a percent of such labor rates or on a cents per hour basis for Worker's Compensation, Public Liability, Contractor's Contingent Liability and Contractual Liability Insurance and all Federal Old Age and Unemployment Taxes and any other taxes applicable as well as fringe benefits as may be approved by the Engineer.

3.3 Materials and supplies actually used on the work.

3.4 Rental charges for necessary equipment, as agreed upon by the Owner and Contractor. Rental charges shall not exceed those published in Rental Rates for Construction Equipment issued by the American Equipment Distributor. Equipment and tools having a value of \$100.00 or less are considered to be "small tools" and as such, are considered to be part of overhead.

To the cost under (3) there shall be added a fixed fee to be agreed upon but not to exceed fifteen (15) percent of the estimated cost of the work. The fee shall be compensation to cover the cost of supervision, overhead, bond, profit and any other general expenses. On work performed by subcontractors, the fixed fee shall not exceed five (5) percent of the cost of work.

7.12 PAYMENT FOR WORK SUSPENDED BY THE OWNER: If the work or any part thereof shall be suspended by the Owner and abandoned by the Contractor as provided in Subsection 2.12 entitled SUSPENSION OF WORK, TERMINATION AND DELAY, the Contractor will then be entitled to payment for all work done on the portions so abandoned.

7.13 PAYMENT FOR WORK BY THE OWNER: The cost of the work performed by the Owner, in accordance with Subsection 2.10 entitled OWNER'S RIGHT TO DO WORK, shall be paid to the Contractor.

7.14 PAYMENT FOR WORK BY THE OWNER FOLLOWING TERMINATION OF CONTRACT BY OWNER: Upon termination of the Contract by the Owner in accordance with Subsection 2.11 entitled OWNER'S RIGHT TO TERMINATE CONTRACT, no further payment shall be due the Contractor until the work is completed. If the unpaid balance of the Contract Amount shall exceed the cost of completing the work including all overhead costs, the excess shall be paid to the Contractor. If the cost of completing the work shall exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The cost incurred by the Owner,

as herein provided, and the damage incurred through the Contractor's default shall be certified by the Owner.

7.15 PAYMENT FOR SAMPLES AND TESTING OF MATERIALS: Samples furnished in accordance with Subsection 4.21 entitled SAMPLES shall be furnished by the Contractor at his expense.

Testing of samples and materials furnished in accordance with Subsection 4.21 entitled SAMPLES shall be arranged and paid for by the Owner.

7.16 ACCEPTANCE AND FINAL PAYMENT: When the Contractor shall have completed the work in accordance with the terms of the Contract Documents, he shall certify completion of the work to the Owner and submit a final Request for Payment. This request shall be the Contract Amount plus all approved additions, less all approved deductions, less previous payments made.

The Contractor shall furnish evidence that he has fully paid all debts for labor, materials, and equipment incurred in connection with the work. Upon acceptance, the Owner will release the Contractor (except as to the conditions of the Performance Bond and the Payment Bond, and any legal rights of the Owner, required guaranties, and Correction of Faulty Work after Final Payment), and will pay the Contractor's final Request for Payment.

The Contractor will allow enough time for the Engineer to assemble and check all necessary data. The Contractor shall deliver to the Owner a complete release of all liens arising out of this Contract before the retained percentage or before the final Request for Payment is paid.

7.17 ACCEPTANCE OF FINAL PAYMENT AS RELEASE: The acceptance by the Contractor of final payment shall be and shall operate as a release to the Owner of all claims and all liability to the Contractor other than claims in stated amounts as may be specifically excepted by the Contractor for all things done or furnished in connection with this Work and for every act and neglect of the Owner and other relating to or arising out of this Work. Any payment, however, final or otherwise, shall not release the Contractor or his sureties from any obligations under the Contract Documents or the Performance Bond and Payment Bond.

7.18 DELAYS AND DAMAGES: The date of beginning and the time of completion of the Work are essential conditions of the Contract Documents and the Work embraced shall be commenced on a date specified in the Notice to Proceed.

The Contractor will proceed with the Work at such a rate of progress to insure full completion within the Contract Time. It is expressly understood and agreed by and between the Contractor and the Owner that the Contract Time for the completion of the Work described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the Work.

If the Contractor refuses or fails to prosecute the Work, or any separable part thereof, with such diligence as will insure its completion within the time specified in the Contract, or any extension thereof, or fails to complete said Work within such time, the Owner may, by written notice to the

Contractor and his Surety, terminate his right to proceed with the Work or such part of the work as to which there has been delay.

In such event the Owner may take over the Work and prosecute the same to completion, by contract and otherwise, and may take possession of and utilize in completing the work such materials, appliances, and plants as may be on the site of the work and necessary therefore.

Whether or not the Contractor's right to proceed with the Work is terminated, he and his sureties shall be liable for any damage to the Owner resulting from his refusal of failure to complete the Work within the specified time.

If fixed and agreed liquidated damages are provided in the Contract and if the Owner so terminated the Contractor's right to proceed, the resulting damage will consist of such liquidated damages until such reasonable time as may be required for final completion of the Work together with any increased costs occasioned by the Owner in completing the Work.

If fixed and agreed liquidated damages are provided in the Contract, and if the Owner does not so terminate the Contractor's right to proceed, the resulting damage will consist of such liquidated damages until the Work is completed or accepted.

The Contractor's right to proceed shall not be so terminated nor the Contractor charged with resulting damage if:

1. The delay in the completion of the Work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, Acts of God, acts of the public enemy, acts of the Government in either its sovereign or contractual capacity, acts of another contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, or delays of subcontractors or suppliers arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and such subcontractors or suppliers: and
2. The Contractor, within ten (10) days from the beginning of any such delay (unless the Owner grants a further period of time before the date of final payment under the Contract), notifies the Owner in writing of these causes of delay.

As used in subparagraph 1, above, the term "subcontractors or suppliers" means subcontractors or suppliers at any time.

The Engineer shall ascertain the facts and the extent of the delay and extend the time for completing the Work when, in his judgment, the findings of fact justify such an extension, and his findings of fact shall be final and conclusive on the parties, subject only to appeal as provided in these General Conditions.

The rights and remedies of the Owner provided in this clause are in addition to any other rights and remedies provided by law or under this Contract.

(End of Section 01230)

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SECTION 01232

SUPPLEMENTAL CONDITIONS

1. CONFLICT OF INTEREST: No official of the Owner who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept or approve, or to take part in negotiating, making, accepting, or approving any architectural, engineering, inspecting, construction, or material supply contract, or in any subcontract in connection with the construction of the Project, shall become directly or indirectly interested personally in this Contract or in any part thereof. No officer, employee, architect, attorney, engineer, or inspector of or for the Owner who is authorized in such capacity and on behalf of the Owner who is in any legislative, executive, supervisor, or other similar functions in connection with the construction of the Project, shall become directly interested personally in this Contract or in any part thereof, or any material supply contract, subcontract, insurance contract, or any other contract pertaining to the Project.

2. TEN STATES STANDARDS: The horizontal and vertical separation of sewer lines and water mains must be in accordance with the “Ten States Standards”.

Horizontal Separation: Whenever possible, sewers should be laid at least 10 feet, horizontally, from any existing or proposed water main. Should local conditions prevent a lateral separation of 10 feet, a sewer may be laid closer than 10 feet to a water main if:

1. It is laid in a separate trench.
2. It is laid in the same trench with the water mains located at one side on a bench of undisturbed earth.
3. In either case, the elevation of the crown of the sewer is at least 18 inches below the invert of the water main.

Vertical Separation: Whenever sewers must cross under water mains, the sewer shall be laid at such an elevation that the top of the sewer is at least 18 inches below the bottom of the main. When the elevation of the sewer cannot be buried to meet the above requirement, the water main shall be relocated to provide this separation, or reconstructed with slip-on or mechanical joint cast iron pipe, asbestos-cement pressure pipe or pre-stressed concrete cylinder pipe for a distance of 10 feet on each side of the sewer so that both joints will be as far from the sewer as possible.

Special Conditions: When it is impossible to obtain proper horizontal and vertical separation as stipulated above, the water main should be constructed of slip-on or mechanical-joint cast iron pipe, asbestos-cement pressure pipe, or pre-stressed concrete cylinder pipe and the sewer constructed of mechanical joint cast iron pipe, and both services should be pressure tested to assure water tightness.

3. FEDERAL SAFE DRINKING WATER ACT: In accordance with Section 1417 of this Act, any pipe, solder, or flux used in the installation or repair of public water systems and plumbing used for drinking water must be lead free. Lead free is defined as less than 0.2 percent lead in solder and flux and less than 8.0 percent lead in pipes and fittings. Leaded joints for the repair of cast iron pipes are not included. Lead shot and packers in well construction are no longer allowed.

4. CONNECTION MADE TO EXISTING MAINS: No existing main shall be cut, tapped, or otherwise disturbed without first obtaining permission in writing from the Owner to make that connection. At least 48 hours notice is required to obtain written approval.

Connections to mains shall be coordinated with the Office of the County Supervisor so that they are made during a period of low water demand and with a minimum of service interruption.

5. WATER SUPPLY: Water supply for the purposes of flushing, disinfecting and pressure testing of the bypass will be furnished by the Contractor. It shall be the Contractor's responsibility to convey the water to any remote location where it is required on the project.

The Contractor shall install a metering system that complies with AWWA C700 and shall pay the water provider for the water used.

6. NIGHT WORK: Night work will be allowed with prior (24 hr) approval of ERCPSD and the Engineer.

7. NOT USED

8. NOT USED

9. POWDER ACTUATED FASTENERS: Whether or not permitted by local code or ordinance, powder actuated fasteners may not be used except on specific approval of the Owner or the Engineer in writing.

10. NOT USED

11. PAVEMENT GUARANTEE: The Contractor warrants to the Owner that all materials and workmanship furnished on all pavements and roadways are guaranteed in accordance with the terms of the General Conditions, Section 4, General Guaranty, for a period two (2) years. The Contractor will remedy any settlements or deficiencies of the pavement surface within this period.

12. CLEAN-UP FOLLOWING PIPELINE INSTALLATION: Contractor will expedite clean up and restoration work as required by the Contract Drawings and Specifications. To the maximum extent possible, roadways, drives, drainage ditches, and structures will be restored immediately after the pipeline installation. The restoration or replacement of public or private property should be scheduled as a top priority work item in the execution of this project.

13. PROTECTION OF WORK: The Contractor shall at all times, until final acceptance of the Work, provide protection of the Work, either new or previously existing, from all hazards involved in his operations. All damage suffered by any item of work, including, but not limited to, drains, curbs, doors, equipment, and structures, shall be repaired or the items shall be replaced prior to final acceptance.

14. SPECIAL PRECAUTIONS: At all times during the construction of the project and its component parts, the Contractor shall provide, install, and maintain proper temporary supports, shoring, and bracing to prevent any damage to the work due to all causes. When openings are made in the roof and/or exterior walls, suitable temporary weather tight closures shall be installed and maintained at all times when work is not in progress at that location.

(End of Section 01232)

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SECTION 13327
PRECONDITIONING AND CLEANING OF UNDERGROUND SEWER PIPELINES

PART 1 GENERAL

1.1 SCOPE

The work covered by this Section includes furnishing all labor, material, equipment and services required for cleaning all sewer pipelines, prior to inspection of the sewers, by closed circuit television, authorized by the Engineer, as shown on the Drawings and/or specified herein. The objective of preconditioning and cleaning is to prepare sewers for rehabilitation by the cured-in-place pipe (CIPP) method and to maximize sewer and manhole service efficiency and effectiveness. Preconditioning and cleaning involves removal of silt, which is defined as any and all solid or semi-solid materials, including fine and granular material, such as sand, grit, gravel, and rock as well as debris, grease, oil, sludge, slime, or any other loose material or encrustation lodged in the manhole or sewer. Preconditioning and cleaning also involves removal of invading roots, corroded concrete, intruding laterals and any other extraneous debris which might inhibit the proper installation of CIPP and to the satisfaction of the Engineer.

1.2 DEFINITION

The term "clean" as used in this Section, shall mean removing all sand, dirt, roots, grease and all other solid or semi-solid materials from the sewer pipelines, so that a closed circuit television camera can be used in the internal pipeline inspection for the purpose of discerning structural defects, misalignment and infiltration/inflow sources. Sanitary sewer lines requiring "Heavy Cleaning" shall be defined as those pipes that have greater than twenty-five percent (>25%) of their cross-sectional area full of debris, silt, roots, sand, grit, gravel, rock, grease, oil, sludge, slime, or any other loose material or encrustation. "Heavy Cleaning" shall be defined as requiring the use of mechanical apparatuses (i.e. buckets, pigs, rodding machines, grinders, etc.) to remove debris and/or obstructions from a pipe.

PART 2 PRODUCTS

2.1 GENERAL

- A. The Contractor shall certify that sufficient cleaning units can be provided, including standby units in the event of breakdown, in order to complete the work within the contract period. Further, the Contractor shall certify that standby or back-up equipment can be delivered to the site within 24 hours in the event of equipment breakdown.
- B. The Contractor shall locate all hydrants from which water may be obtained.

- C. The Contractor will be responsible for locating and accessing all manholes. A water meter must be obtained from the main office of Columbia Water for recording water usage used for sewer cleaning, and other work items requiring water. The office address is 1136 Washington Street, Columbia, SC, 29209. Contact: Customer Service Department at (803) 545-3300.
- D. All details of the point of water connection, backflow protection, conveyance methods, and all local conditions regarding the use of water shall be approved by the Engineer prior to commencement of work. All equipment, labor, and material required for obtaining water for the work shall be provided by the Contractor.
- E. The Contractor must ensure that a 6-inch minimum air gap is maintained at the water supply point on de-silting/cleaning/jetting equipment or any other receiving apparatus.

PART 3 EXECUTION

3.1 CLEANING

- A. Cleaning will be accomplished by utilizing a high pressure, hydraulic sewer pipeline cleaner. Pressure jetting equipment used shall be sufficient for the purposes of attaining the degree of cleanliness in sewers as specified.
- B. The cleaning unit(s) shall be capable of operating routinely, up to a minimum of 700 feet from the point of access to the sewer; minimal hose diameter shall be one-inch diameter.
- C. The Contractor's rates specified in the bid shall be for jetting in sewers both upstream and downstream.
- D. Successive passes using constantly moving pressure jetting techniques shall be applied to sewers until they are cleaned to the level specified. Nozzle hold-time (stationary time), for any particular location, shall not be more than 60 seconds in order to forestall damage to the pipe being cleaned. Ideally nozzles shall have jet angles of between 30° to 45°. "High efficiency nozzles" (discharging "pencil jets") with jet angles higher than this figure shall not be allowed to be stationary at any time. Successive passes using constantly moving pressure jetting techniques shall be applied to sewers until they are cleaned to the level specified. The Contractor shall exercise care at all times in order to forestall damage to the pipe being cleaned.
- E. Cleaning shall be done immediately prior to the internal inspection to preclude the build-up of debris from infiltration/inflow sources and upstream manhole sections. The full circumference of the pipe being cleaned shall be visible with no standing water obstructing the view of the pipe. If necessary, the Contractor shall use a jet nozzle, foam pig or other device to draw down residual water in the pipe. Should television inspection reveal that a sewer pipeline is not clean; the cleaning operations shall be repeated until the sewer pipeline is clean to the satisfaction of the District/Engineer. This additional cleaning shall be done at the expense of the Contractor, at no additional cost to the Owner unless "Heavy Cleaning" as described in section 3.2, Item A of this Specification is authorized by the Engineer.
- F. During preconditioning and cleaning work and all other associated Contract operations, sewer services shall be maintained at all times. This requirement may be relaxed only with the written

approval of the Engineer.

- G. The manholes and sewers to be preconditioned and cleaned convey sanitary sewage. In many instances such sewers are subject to high flows, either continuously or in a periodically varying cycle, due to rainfall, infiltration, and/or pumping operations. The Contractor shall include in his bid provisions for dealing with such variations, and where necessary, schedule his Work to accommodate such variation in flows.
- H. Cleaning shall include the trapping and removal of all sediments and residual wastes from successive manholes as the cleaning progresses. When hydraulic cleaning equipment is used, a suitable weir or dam shall be constructed in the downstream manhole, in such a manner, that the solids and water are trapped. Under no circumstances shall sewage or solids removed from the pipeline or manhole, be dumped onto streets, in catch basins or in storm drains. Material which could cause pipeline stoppages, accumulations of sand in wet wells, or damage to pumps, shall not be permitted to pass from manhole section to manhole section. The cost of trapping, removing, hauling and disposing of the residual wastes shall be included in the cost of cleaning. Residual wastes shall be removed and transported to the ERCPSD Wastewater Treatment Facility or other pre-approved disposal facility in a manner approved by the Engineer and the Owner.
- I. The Contractor shall provide for the pumping down of any surcharged manhole section and provide all bypass pumping, if required, during the cleaning operation. All costs for setup, operation and removal of bypass pumping systems shall be included in the lump sum item listed on the Bid Form.
- J. The Contractor shall submit a comprehensive equipment list to the Engineer before commencement of the Work. The complete list, which shall include all back-up and stand-by equipment, shall be broken down into the following categories (at a minimum):
 - 1. Safety equipment
 - 2. Manhole preconditioning and cleaning equipment
 - 3. Sewer preconditioning and cleaning equipment
 - 4. Flow diversion and flow control equipment
 - 5. Traffic control equipment
 - 6. All other equipment necessary for the completion of the WORK
- K. Blockages in the system shall be reported to the Engineer immediately.
- L. A responsible representative of the Contractor shall be present on the site of the work, or other location approved by the Engineer, to provide supervision of the work. At all times, and especially when a change of work location is underway, the Contractor's representative shall keep the Engineer continuously aware of the location, progress, planned execution of the work, and problems encountered.

- M. If during the course of cleaning and/or inspection operations, the Contractor believes a pipeline will require “heavy cleaning”, they shall inform the Engineer prior to conducting “heavy cleaning” operations. Visual evidence in the form of a CCTV image or digital image of the pipeline shall be provided by the Contractor to the Engineer to justify heavy cleaning operations. After reviewing the evidence, the Engineer shall make a determination if the evidence provided meets the definition of “heavy cleaning”. If it is determined that “heavy cleaning” is required, the Engineer shall provide written authorization to the Contractor to proceed with “heavy cleaning” operations at the rate set forth in the bid for the pipe or pipes determined to require “heavy cleaning”.
- N. Flows may be attenuated using suitable flow control devices such as plugs designed and manufactured specifically for use in sanitary sewers. Sand bags or other types of devices shall not be used within sanitary sewer pipelines or manhole unless authorized by the Engineer.

3.2 HEAVY CLEANING

- A. If roots are present which require the use of mechanical brushes or dragging devices or, if in the judgment of the Engineer, the pipe is more than 25% full of debris, the pipe shall be cleaned to the satisfaction of the Engineer and additional payment authorized under the appropriate pay item on the Bid Form. Heavy cleaning shall be defined as the pipe being more than 25% full of debris or requiring the use of apparatus other than normal high-pressure jetting equipment. The Contractor shall be paid for heavy cleaning on the basis of the distance loosened debris is moved to the nearest point of extrication from the sewer. Payment shall be calculated on a lineal foot basis and will be paid in addition to the normal cleaning rate shown on the Bid Form. Any heavy cleaning must have pre-approval from the Engineer.
- B. It is recognized that man-entry and hand cleaning is necessary when cleaning large-bore pipe. For work under this Contract, man-entry and hand-cleaning will not automatically constitute “heavy cleaning.”

3.3 PRECAUTIONS

- A. The Contractor shall take all necessary precautions to ensure that water used does not flood property or buildings served by the sewer pipeline being cleaned.
- B. No fire hydrant shall be obstructed, in case of a fire in the area served by the hydrant.
- C. The Contractor shall take all necessary precautions to protect the sewer pipelines from damage that might be inflicted by improper use of cleaning equipment and shall repair, at no cost to the Owner, any damage caused by the cleaning operation.
- D. The Contractor shall furnish, to ERCPSD, certification of the accuracy of the automatic counter before any work shall begin on this Project. If, at any time, the Engineer has reason to believe that the counter is inaccurate, the calibration of the counter will be checked before any more work progresses.
- E. The Contractor shall provide, operate, maintain and subsequently remove on completion, adequate ventilation apparatus in the form of blowers and/or fans. The ventilation apparatus shall

introduce a fresh air supply to support a safe environment for Work in sewers, manholes and all other confined spaces, which shall be kept free from dangerous, toxic and/or explosive gases, whether generated from sewage, soil strata or another source.

- F. The Contractor shall employ the “best practicable means” to minimize and mitigate noise as well as vibration resulting from operations. Mitigation measures shall include the utilization of sound suppression devices on all equipment and machinery particularly in residential areas and in the near vicinity of hospitals and schools, especially at night.
- G. The Contractor shall inform the Engineer before the commencement of any portion of the work of any significant change in the methods of noise attenuation from those previously approved.
- H. All pumps, generators, combination cleaners or other noise emitting equipment be shall be suitably screened to minimize nuisance and noise pollution. This requirement shall not be taken as preventing or prohibiting the execution of work necessary for the saving of life, protection of property, or safety of the personnel and/or facilities. The Contractor shall notify the Engineer of such use of plant or equipment in an emergency situation as soon as practicable.

3.4 DATA COLLECTION

- A. The Contractor shall complete a cleaning report for each sewer segment cleaned. A hard copy of this report shall be furnished on a weekly basis to the Engineer. The information required on the cleaning report shall be as follows:
 - 1. Upstream and downstream manhole number corresponding to the section of sewer cleaned.
 - 2. Degree and nature of deposits prior to cleaning.
 - 3. Length of sewer cleaned.
 - 4. Method and man-hours required for cleaning.
- B. The Contractor shall submit a legibly hand written, tabular inspection sheet that includes the above requested items. Contractor shall submit samples of the inspection sheet they intend to use for approval of the Engineer and ERCPSD prior to beginning inspection activities.

END OF SECTION

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SECTION 13328
CLOSED CIRCUIT TV INSPECTION
OF EXISTING UNDERGROUND SEWER PIPELINES

PART 1 GENERAL

1.1 SCOPE

The work covered by this Section includes furnishing all labor, materials, equipment and services required to perform the closed-circuit television inspection of the specific sewer pipelines authorized by the Engineer.

1.2 DEFINITION

"Internal inspection" shall consist of using a closed-circuit television within a designated sewer pipeline segment to determine the physical condition of the sewer pipeline. "Internal inspection" shall consist of using a closed-circuit television within a designated sewer pipeline segment to detect point sources of infiltration/inflow or exfiltration, restrictions or obstructions within the pipe potentially affecting hydraulic capacity and, to determine the overall physical condition and suitability and/or acceptance for cured-in-place pipe (CIPP) or other methods of non-disruptive rehabilitation of the sewer pipeline.

PART 2 PRODUCTS

2.1 TELEVISION EQUIPMENT

- A. The camera unit shall be a color pan and tilt unit for mainline inspections and may be fixed position for service lateral inspections. The television camera shall have a resolution of 700 lines minimum and shall have a source of illumination attached to it. With the monitor adjusted for correct saturation, the six colors plus black and white shall be clearly resolved with the primary and complementary colors in order of decreasing luminance. The gray scale shall appear in contrasting shades of gray with no tint. To ensure the camera shall provide similar results when used with its own illumination source, the lighting shall be fixed in intensity prior to commencing the inspection. In order to ensure color constancy, no variation in illumination shall take place during the inspection. The televised image shall be displayed on a monitor, located in an enclosed space in the television inspection vehicle.
- B. CCTV FOCUS/IRIS/ILLUMINATION: The adjustment of focus and iris shall allow optimum picture quality to be achieved and shall be remotely operated. The adjustment of focus and iris shall provide a minimum focal range from 6 inches in front of the camera's lens to infinity. The distance along the sewer in focus from the initial point of observation shall be a minimum of twice the vertical height of the sewer. The illumination must allow an even distribution of the light around the sewer perimeter without the loss of contrast picture, flare out or shadowing.
- C. The camera shall be self-propelled or mounted on skids and drawn or pushed through the sewer by winches or jetting hose for pipelines with an equivalent diameter from 6" to 54" inches for mainline inspections. The inspecting equipment shall be capable of inspecting a length of sewer up to at

least 1,000 feet when entry onto the sewer may be obtained at each end and up to 750 feet where a self-propelled unit is used, where entry is possible at one end only. Push camera units for service lateral inspections must be capable of inspecting a length up to 150 linear feet. The Contractor shall maintain this equipment in full working order and shall satisfy the Engineer at the commencement of each working shift that all items of equipment have been provided and are in full working order.

- D. Each inspection unit shall contain a means of transporting the CCTV camera equipment in a stable condition through the sewer under inspection. Such equipment shall ensure the maintained location of the CCTV camera on or near to the central axis of a circular shaped sewer when required in the prime position.
- E. Where the CCTV camera head is towed by winch and bond through the sewer, all winches shall be stable with either lockable or ratcheted drums. All bonds shall be steel or of an equally non-elastic material to ensure the smooth and steady progress of the CCTV camera and/or Sonar equipment. All winches shall be inherently stable under loaded conditions.
- F. Each unit shall carry sufficient numbers of guides and rollers such that, when inspecting, all bonds are supported away from pipe and manhole structures and all CCTV cables and/or lines used to measure the CCTV camera's head location within the sewer are maintained in a taut manner and set at right angles where possible, to run through or over the measuring equipment.
- G. The Contractor shall use a suitable metering device, which enables the cable length to be accurately measured; this shall be accurate to within +/- 2-inches. When requested by the Engineer in writing at any time during a survey or inspection, the Contractor shall demonstrate compliance with the above tolerance. The device used by the Contractor to measure the footage along the sewer will be compared with a standard tape measure. The results will be noted. If the Contractor fails to meet the required standard of accuracy, the designated Engineer shall instruct the Contractor to provide a new device to measure the footage.
- H. The in-sewer photographic/video camera system and suitable illumination shall be capable of providing an accurate, uniform and clear record of the sewer's internal condition. In-sewer lighting standards shall meet the requirements of the designated Engineer and applicable codes regarding safety and power.
- I. A reserve television camera shall be available on-site to replace the regular television camera in the event of a breakdown. Should the reserve equipment malfunction, another camera shall be provided within 24 hours.
- J. Suitable flow control devices shall be plugs designed and manufactured for use in sanitary sewers. Sand bags or other types of devices shall not be used within sanitary sewer pipelines or manholes unless authorized by the Engineer.

2.2 TELEVISION EQUIPMENT OPERATION

Operation of the television inspection equipment shall be controlled from above ground, with a skilled technician at the control panel in the television inspection van controlling the movement of the television camera. The technician shall have the capability to: adjust the brilliance of the built-in

lighting system; change the focus of the television camera by remote control; control the forward and reverse motion of the camera; and determine the camera's position, at any time. All post-CIPP installation videos shall be continuous with no evidence of "blink outs" or editing. In the event that the video is not continuous, the contractor shall re-inspect the sewer segment and provide a new video to the satisfaction of the Engineer.

PART 3 EXECUTION

3.1 PROCEDURE

- A. Video Inspection: Prior to installation of the CIPP, the section of sewer designated for CIPP is to be televised over its full length using a remote television camera specifically designed for that purpose. ERCPSD requires that all video inspections under this contract be compatible with and suitable for use with the latest version Granite Net pipe inspection software. ERCPSD will provide a Granite Net database that will contain the data to complete the inspections.
- B. Pre and post-installation videos and logs shall be submitted during the course of the Work. The television camera used for this purpose shall be operative in one hundred percent moisture conditions. Lighting for the camera shall be sufficient to yield a clear picture of the entire periphery of the pipe. Videos between manhole segments shall be continuous; no breaks or "blink-outs" in the video shall be observed. The videos shall be in CD-ROM, DVD or digital format.
- C. Pre-rehabilitation video inspection - No more than 48-hours prior to rehabilitation, the television inspection shall be performed in one section of the sewer pipeline at a time, between adjacent manholes for mainline inspections. The CCTV operator must be NASSCO certified and the inspection shall be performed to NASSCO PACP standards to the extent possible. The inspection shall be performed by pulling, pushing or propelling the television camera through the section of the sewer along the axis of the pipeline. The inspection shall be performed in a forward and/or backward direction, as dictated by the pipeline conditions at the time of the inspection. During the inspection of the pipelines, every possible means shall be taken to ensure total viewing of the inside periphery of the pipeline. The inspection shall be conducted in such a manner as to determine that the line is clean and the location of any conditions which may prevent the proper rehabilitation of the pipeline. Television camera movement shall be temporarily halted at each visible point source of infiltration/inflow. The camera shall also be stopped at all service connections. The full cross-sectional area of service connections shall be inspected and a determination as to the active/inactive status of the service shall be made and noted. A digital copy of this inspection for each mainline pipeline or service lateral inspection conforming to the data collection standards of this section shall be supplied to the Engineer for review prior to commencing rehabilitation.

3.2 PROVISIONS

- A. The Contractor shall maintain on site at all times a competent field supervisor in charge of the inspection. The field supervisor shall be responsible for the safety of all site workers and site conditions as well as ensuring that all work is conducted in conformance with these specifications and to the level of quality specified.

- B. The Contractor shall provide bypass pumping, where necessary, to prevent flooding, sanitary sewer overflows or in order to view the full cross-sectional area of the pipe. A jetting operation performed in conjunction with CCTV may be required to pull water down and away from areas where sags or bellies allow for standing water. The full cross-sectional area of the pipe shall be visible.
- C. The Contractor shall provide for the pumping down of any surcharged manhole section, if required, before television inspection commences. No separate payment shall be made for bypass pumping for CCTV inspection.
- D. The Contractor shall furnish, to the Engineer, certification of the accuracy of the automatic counter before any work shall begin on the Project. If, at any time, the Engineer has reason to believe that the counter is inaccurate, the calibration of the counter will be checked before any more work progresses.
- E. CCTV Camera Head Speed: The speed of the CCTV camera in the sewer shall be limited to 20 feet per minute for inspections to enable all details to be extracted from the ultimate video recording.
- F. At the start of each sewer length being surveyed or inspected and each reverse set-up, the length of pipeline from zero footage (the entrance to the pipe) up to the cable calibration point shall be recorded and reported in order to obtain a full record of the sewer length. Only one inspection shall be indicated in the final report. All reverse set-ups, blind manholes, and buried manholes shall be logged on a separate log. Each log shall make reference to a start (ST) and finish (FH) manhole.
- G. If during the course of CCTV Inspection, a protruding tap is discovered in the pipeline that will not allow the passage of a CCTV inspection camera, then the Contractor will be required to remove the protruding tap via a remotely controlled robotic cutting device and re-inspect the pipe.
- H. If for any reason the camera becomes disabled inside the sewer and cannot further proceed, the Contractor shall be responsible for retrieving the camera at no additional cost to the Owner.
- I. All digital video shall be continuous with no evidence of missing footages or “blink-outs.” That the entire pipeline segment was traversed and inspected shall be obvious on the final digital video.
- J. In the event of pipe sag, grade deficiency or any condition resulting in ponding or standing water within the pipe, a jet nozzle, foam pig or other device shall be used to draw the water down so that the full cross-sectional area of the pipe being inspection is viewed.

3.3 DATA COLLECTION

- A. The Contractor shall furnish all equipment and software required for taking videos of the view which appears on the monitor. NASSCO PACP inspection standards apply. Digital Video will be used to record location of taps and service connections, severe leaks, holes, collapses, misalignments, and serve as a record of the pre and post installation conditions of the sanitary sewer and rehabilitated service laterals. Standard header information such as upstream and downstream manhole numbers, direction of survey, pipe size, pipe material, date performed, person performing the inspection and

length of survey shall be captured utilizing Granite Net inspection software. Defect coding will not be required as part of this contract other than the location and condition of service connections and taps.

- B. At the start of each manhole length a data generator shall electronically generate and clearly display on the viewing monitor and subsequently on the video recording a record of data in alphanumeric form containing the following minimum information:
 - 1. Automatic update of the camera's footage position in the sewer line from adjusted zero.
 - 2. Sewer dimensions in inches
 - 3. Manhole numbers or Pipeline ID and Cleanout ID
 - 4. Date of survey
 - 5. Road name (nearest)/location
 - 6. Direction of survey, i.e., downstream or upstream
 - 7. Time of start of survey
 - 8. Material of construction of the pipe
- C. The size and position of the data display shall be such as not to interfere with the main subject of the picture.
- D. Once the survey of the pipeline is under way, the following minimum information shall be continually displayed:
 - 1. Automatic update of the camera's footage position in the sewer line from adjusted zero.
- E. A typical log and summary form used to record internal inspection data shall be submitted by the Contractor, for the Engineer's review, prior to any television work being initiated.
- F. The Contractor's responsible Project representative will be available during internal television inspection, and no work shall be performed without the responsible Project representative present, unless authorized by the Engineer.
- G. The Contractor shall use the following approved software package to produce CCTV pre-installation and post-installation databases and videos: Granite Net software.

3.4 DELIVERABLES

- A. The Contractor shall deliver a video of the pipelines and service laterals inspected to the District/Engineer's on-site agent in a digital medium such as a flash or thumb drive agreeable to the on-site agent. After completion of the post-installation CCTV work for each pipeline section to be rehabilitated, DVD-ROM or external hard drive to ERCPSD for review. The Contractor shall also

deliver a Granite Net database containing all data related to the inspections. At the conclusion of the project, all videos, pre and post, will become the property of ERCPSD for use in archival of data. Each video shall contain the following:

1. Inspection Number
2. Upstream Manhole Number (or Pipeline ID for service lateral CCTV inspections)
3. Downstream Manhole Number (or Cleanout ID for service lateral CCTV inspections)
4. Person & Company Performing Inspection
5. Date Inspection Performed
6. Length Surveyed
7. Direction of Survey
8. Location of all service connections (distance from upstream or downstream manhole).
9. Clock direction of tap entry to main.
10. Date of Cured-in-place pipeline (CIPP) rehabilitation.
11. Thickness of CIPP installed in millimeters (mm).

END OF SECTION

SECTION 13341
SEWER REHABILITATION
BY THE CURED-IN-PLACE PIPE METHOD

PART 1 GENERAL

1.1 SCOPE

- A. Furnish all labor, material and equipment to provide for the reconstruction of existing sewer pipes using an approved Cured-In-Place Pipe (CIPP) method by forming a new pipe within an existing pipe.
- B. The sewer reconstruction shall be accomplished by the CIPP method in pipes which have generally maintained their original shape. The CIPP shall provide flow capacity not less than 100% of the original pipe's flow capacity when new. The process is defined as the reconstruction of sewer lines by the installation of a thermosetting resin-impregnated flexible felt-fiber tube coated on one side with an impermeable plastic which is installed into the existing sewer utilizing a hydrostatic head or air pressure. Curing is accomplished by circulating hot water or the introduction of controlled steam throughout the length of the inverted tube to cure the resin into a hard, impermeable pipe with the plastic coating on the interior surface of the newly formed pipe. The CIPP shall extend the full length of the original pipe segment and shall provide a structurally sound, joint-less, close fitting and corrosion resistant cured-in-place pipe.
- C. The Work under this contract comprises approximately 8,895 linear feet of gravity sewer pipe 54-inch in diameter. The work covered by this contract will be for the installation of Cured-In-Place-Pipe (CIPP) in existing sewer lines that East Richland County Public Service District (ERCPSD) has pre-selected for lining with CIPP.
- D. It is the intent of this contract is to reduce infiltration and inflow (I&I), rehabilitate those sewers where failure could be very disruptive, hazardous to public health, and/or very expensive to repair after failure. It is critical that both the Product and the Installer have the ability to meet or exceed all requirements of ERCPSD. The object of this Specification is to cover the minimum acceptable quality standards of a Cured-in-Place Pipe (CIPP) method for a complete rehabilitation of a gravity sewer pipe.

1.2 REFERENCE STANDARDS

- A. Supply all products and perform all work in accordance with applicable American Society for Testing and Material (ASTM), American Water Works Association (AWWA), American National Standards Institute (ANSI), or other recognized standards. Latest revisions of all standards are applicable.
- B. Installation and material tests of cured-in-place pipe (CIPP) must meet the minimum requirements demonstrated in the latest revisions of the following ASTM standards:

ASTM F-1216 Standard Practice for the Installation of
Cured-In-Place Pipe by Inversion Lining

ASTM D-790 Test Method of Flexural Properties of Plastics

For Standard Polyester Resins

Flexural Strength 4,500 psi
Flexural Modulus 250,000 psi

For Enhanced Polyester Resins

Flexural Strength 4,500 psi
Flexural Modulus 400,000 psi

Any approved process shall strictly adhere to this specification with regard to all standards and requirements. Where discrepancies exist, or any latitude is either inferred or interpreted between this specification and ASTM product and process standards, this Specification shall govern.

1.3 QUALITY ASSURANCE

A. Resin Class

1. The Contractor shall designate a wet-out facility and shall provide wet-out liner tubes from this designated facility only. Multiple facilities to supply wet-out liner tubes for the duration of this contract may not be used without prior approval of District.
2. The Contractor shall place a sampling valve in-line at a point in the resin/catalyst mixing stage so that a sample of non-catalyzed resin may be taken. A second sampling valve shall be placed in-line at a point after the resin/catalyst mixing stage, but prior to catalyzed resin injection into the liner so that a resin sample may be taken. Both sampling valves shall be left in place for the duration of the Contract. The District shall have the right to inspect the designated wet-out facility and draw samples from one or both sampling valves without prior notice to the Contractor for the duration of the Contract.
3. Infrared Analysis
 - a. ERCPSD reserves the right to subject resin samples to an infrared analysis (IR Scan). This standard analytical test involves shining a beam of light in the infrared frequency region through a thin sample of subject resin. The frequency of light is then varied across the infrared spectrum. Chemical functional groups present in the resin being analyzed will absorb infrared light as specific frequencies and with characteristic absorption intensities.
 - b. A spectrum created from the measurement of light transmitted through the sample across the range of infrared frequencies shall be used to determine the resin's chemical fingerprint. For standard resins, an overlaid IR spectrum of Reichhold PolyLite® 33420 shall be used as a baseline comparison for the purpose of a test under this contract. For enhanced resins, an overlaid IR spectrum of Reichhold PolyLite® 33420-E shall be used as a baseline comparison for the purpose of a test under this contract.

- c. ERCPSD or its Engineer may perform random Infrared Scans (IR Scans) and/or composite burn-offs to insure resin quality and consistency throughout the duration of the Contract and shall be responsible for the cost of IR testing.

1.4 SUBMITTALS

- A. Submittal information shall include the following:
 - 1. The Contractor shall furnish 3 copies of the design calculations establishing the structural capabilities, chemical composition, thickness, curing temperature and period, assumptions, and other mechanical properties of the liner system proposed.
 - 2. The Contractor shall furnish 3 copies of the manufacturer's brochures giving a complete description of the product proposed, its physical and chemical composition, the same for the thermosetting resin or epoxy hardener, the recommended range of curing temperature, period of cure, cool-down procedures and method of installation.
 - 3. Catalyst system and resin/catalyst ratio.
 - 4. The proposed curing schedules and process shall be approved by the resin manufacturer in writing. Cure schedules shall include specific information on "post exothermic cook times", duration and "cool-down procedures, all to be approved by the resin manufacturer in writing.
 - 5. The Contractor shall submit a Certificate of Authenticity from the resin manufacturer for each shipment to the wet-out facility to include the date of manufacture and Heat Distortion Temperature. This information shall be submitted before the manufacture or installation of any CIPP.
 - 6. Sampling procedures for obtaining representative plate samples of the finished liner.
- B. The CIPP manufacturer shall submit written certification that the lining system proposed complies with all applicable requirements of these Specifications.

PART 2 PRODUCTS

2.1 CURED-IN-PLACE-PIPE

- A. The CIPP material shall be fabricated from materials which, when cured, will be suitable for the environment intended, i.e., resistant to withstand exposure to sewage gases containing normal levels for domestic sewage of hydrogen sulfide, carbon monoxide, carbon dioxide, methane, traces of mercaptan, kerosene, saturation with moisture, dilute sulfuric acid, external exposure to soil bacteria, and any chemical attack which may be due to materials in the surrounding ground. The final product must not deteriorate, corrode, or lose structural strength in any manner that will preclude meeting the expected design life.

- B. The structural performance of the inverted cured-in-place pipe must be adequate to accommodate all internal and external loads (live and dead) over its design life. The CIPP liner shall be designed considering the host pipe to be fully deteriorated (FD) and shall be based on design parameters in section 2.05, Items (a) through (i) of this Specification adjusted for site-specific field conditions and approved by the District prior to tube manufacture.

2.2 RESINS

- A. The resin class for CIPP installed under this contract shall be a Standard Polyester or Enhanced Polyester unless otherwise directed by the District due to site-specific field conditions and/or design requirements.

- B. Standard Polyester Resin

1. The resin used shall be high-grade corrosion resistant isophthalic polyester specifically designed for the CIPP being installed. Only premium, non-recycled resin shall be used. The acceptable resin, (Reichhold PolyLite® 33420 or approved equal) shall have been tested according to ASTM D2990, D5813, and F1216 by accredited, third-party testing facilities. Results of these tests shall be made available to ERCPSD upon request.
2. The resin must be manufactured under ISO 9002 certified procedures. The resin vendor must be able to reference the corrosion scale with the resin itself having a heat deflection temperature greater than 212 degrees Fahrenheit. Only premium, non-recycled resins will be accepted. PET resins or those containing enhancement additives and/or fillers will not be accepted.

- C. Enhanced Polyester Resin

1. The resin used shall be high-grade corrosion resistant isophthalic polyester specifically designed for the CIPP being installed. The resin vendor must be able to reference the corrosion scale with the resin itself having a heat deflection temperature greater than 244 degrees Fahrenheit. Only premium, non-recycled resin shall be used. The acceptable resin, (Reichhold PolyLite® 33420-E or approved equal) shall have been tested according to ASTM D2990, D5813, and F1216 by accredited, third-party testing facilities. Results of these tests shall be made available to the Engineer upon request.

- D. The resin shall be shipped directly from the resin manufacturer's facility to the CIPP wet-out facility. The resin shall not be sent to any intermediate mixing facility. Copies of the shipping documents from the resin manufacturer shall be submitted to ERCPSD indicating dates of shipment, originating and receiving locations.

2.3 CATALYST SYSTEMS

- A. The catalyst system shall be made up of a primary catalyst and a secondary catalyst. The primary catalyst shall be Akzo Perkadox 16(26) or approved equal and shall be added at a maximum of 1% of the resin volume by weight unless otherwise approved by the District. The secondary catalyst shall be Akzo Trigonox or approved equal and shall be added at a maximum of 0.05% of the resin volume by weight unless otherwise approved by the District.

- B. Resins, catalysts and resin/catalyst mix ratios shall not be changed or altered during this Contract unless specifically approved by the District in writing.

2.4

LINER TUBE

- A. The tube shall consist of one or more layers of absorbent non-woven felt fabric and meet the latest requirements of ASTM F1216. In the event of a discrepancy between the referenced ASTM requirement and this specification, this specification will govern.
- B. The tube shall be constructed to withstand installation pressures, have sufficient strength to bridge missing pipe, and stretch to fit irregular shaped pipe sections.
- C. The wet-out tube shall have a uniform thickness that when compressed at installation pressures shall meet or exceed design “**finished and installed**” thickness.
- D. The tube shall be manufactured to a size that when installed shall tightly fit the internal circumference and length of the original pipe. In the event that under-sized pipe is present, liner tube shall be manufactured so that overlap folds or wrinkles do not occur. Allowances shall be made for circumferential stretching during inversion.
- E. The outside layer of the tube, before installation, shall have an impermeable polyurethane or polyethylene plastic coating. This coating shall be an impermeable, flexible membrane that shall contain the resin and facilitate monitoring of resin saturation during resin impregnation. This coating shall form the inner layer of the finished pipe and is required for enhancement of corrosion resistance, flow and abrasion properties.
- F. The tube shall be homogeneous across the entire wall thickness containing no intermediate or encapsulated layers. No material may be included in the tube that may cause de-lamination in the cured liner, and no dry or unsaturated areas or layer shall be evident.
- G. The wall color of the interior liner surface after installation shall be a light-reflective color so that a clear, detailed inspection with closed-circuit television equipment may be conducted.
- H. The outside of the tube shall be marked for distance at regular intervals not to exceed 10 feet. Such markings shall include the manufacturers name or identifying symbol.
- I. The minimum length shall be that deemed necessary by the Contractor to effectively span the distance between manhole sections of the segment to be lined unless otherwise specified. The line lengths shall be verified in the field before impregnation of the tube with resin.
- J. The acceptable liner tube shall be constructed under ISO 9002 certified procedures. Proper certification shall be submitted prior to the installation of any CIPP.

2.5 CIPP DESIGN

A. Liner Thickness

1. The Contractor shall submit liner thickness calculations to the District for review. The CIPP shall be designed in accordance with the applicable provisions of F1216 and D2412 for “fully deteriorated gravity pipe conditions” (FD) and shall meet the following design conditions:
 - a. AASHTO H-20 Live Load with two trucks passing for CIPP in streets (16,000 lbs.)
 - b. A soil modulus of elasticity of 1,000 psi, soil weight of 120 pounds per cubic foot and a coefficient of friction of $Ku' = 0.130r$.
 - c. Short-term flexural modulus of 250,000 psi and long-term modulus of 125,000 psi for Standard Resins and a Short-term flexural modulus of 400,000 psi and long-term modulus of 200,000 psi for Enhanced Resins
 - d. Flexural strength of 4,500 psi.
 - e. Safety factor of 2.0 shall be used.
 - f. Groundwater elevation at the ground surface.
 - g. Pipe ovality: 2%
 - h. Poisson ratio of 0.3.
 - i. Enhancement factor (K) of 7.
 - j. Service temperature range shall be 40 to 140 degrees Fahrenheit.
2. The Minimum Acceptable Pipe Thickness (**Finished and Installed**), shall be based on design parameters in section 2.5, Items (a) through (i) of this Specification adjusted for site-specific field conditions and approved by the District prior to tube manufacture.
3. Minimum Acceptable Pipe Thickness

SEGMENT ID	DIA	MAX. DEPTH	WALL THICKNESS (MM)
MH042-MH035		23.5	31.5
MH028-MH035		24.2	31.5
MH028-MH024		31.3	36.0
MH020-MH024		36.8	39.0
MH020-MH015		31.5	36.0
MH011-MH015		19.2	27.0
MH011-MH007		21.1	28.5

4. The liner thickness shall be the greater of the calculated thickness to meet the design requirements of Paragraph 1 above or the minimum acceptable pipe thickness from Paragraph 2 above.
 5. All references to cured liner thickness shall be defined as total thickness after installation and after curing is complete.
 6. The finished CIPP shall provide a uniform smooth interior wall surface with a Manning “n” coefficient of 0.011.
- B. It is the Contractor’s responsibility to determine the site specific external loads on the liner and increase its thickness as required. The Contractor shall submit his proposed plan for ensuring that the finished and installed CIPP meets minimum thickness requirements. The plan shall include detailed inversion procedures to reduce stretching and resin loss and to minimize shrinkage.
- C. The contractor shall submit his price proposal based on the appropriate length, size, and existing pipe parameters. The deterioration of sewers is an on-going process. In the event pre-construction inspections reveal the sewers to be in substantially different conditions than those in the design considerations, the contractor shall request such changes in reconstruction liner thickness, supporting such requests with the appropriate design data satisfactory to the District. The deviation, if approved, shall be reflected by the appropriate addition or reduction in the unit cost for that size as agreed to by ERCPSD.
- D. Any liner that does not meet the specified strength and/or thickness requirements, regardless of the amount below the specified requirements, shall be corrected by the Contractor in a manner approved by the District at no additional cost to ERCPSD. The District’s decision on how to correct deficient CIPP installations shall be final. Options for correcting deficient liners that will be considered by the District include removing the liner and re-lining the sewer, excavating and replacing the sewer from manhole to manhole, or providing ERCPSD with a substantial credit. The primary option that will be considered will be to re-line the sewer. Credits will only be authorized for CIPP that does not meet required thickness. If a credit is acceptable to ERCPSD, the credit shall be calculated by multiplying the bid price by the percent that the liner thickness is below the required installed thickness as follows:
- Credit = (1 – Installed CIPP thickness/required CIPP thickness) x bid price**
- E. The Contractor shall not assume a credit will be acceptable to ERCPSD in any case.
- F. The finished CIPP will provide a uniform smooth, interior wall surface and will have at least 100% of the flow capacity of the original pipe before rehabilitation.

PART 3 EXECUTION

3.1 GENERAL

A. SPECIAL CONDITIONS

The work under this contract shall at all times be subject to a prescribed "Progression of Work." Each sewer segment shall be completed before progressing to a subsequent segment. No subsequent sewer segment shall be lined until the previous segment has been video inspected and the contractor has received a written acceptance by either the District or the District's ENGINEER/AGENT. Bidders are admonished to account for this Specification requirement when preparing their bids.

- B. All reconstruction of existing gravity sewer mains using an approved CIPP Product and Installer shall be performed in strict accordance with this Specification and the latest revision of ASTM F1216. Where discrepancies exist, or any latitude is either inferred or interpreted between this specification and ASTM product and process standards, this Specification shall govern.
- C. Inversion of CIPP using a hydrostatic water column is ERCPSD's preferred method of installation. However, the District may consider the use of alternative methods of installation on a case by case basis. For alternative methods to be considered, the Contractor shall submit a request in writing describing the alternative installation and any benefit to the District resulting from its use. The Contractor may not assume that any method other than a hydrostatic water column is acceptable on any sewer segment without a written request and subsequent approval by the District.
- D. The Contractor shall carry out his operations in strict accordance with all applicable OSHA standards. Particular attention is drawn to those safety requirements involving work on an elevated platform, entry into a confined space and the operation of high-pressure air/steam equipment.
- E. All surfaces, which have been damaged by the Contractor's operations, shall be restored to a condition at least equal to that in which they were found immediately prior to the beginning of the Contractor's operations. Suitable materials and methods shall be used for such restoration. The restoration of existing property or structures shall be done as promptly as practicable and shall not be left until the end of the construction period. Compensation for this work will be included in the Contractor's proposal.
- F. The tube shall be fabricated to a size that, when installed, will neatly fit the internal circumference of the conduit(s) designated for CIPP. Allowance shall be made for the circumferential stretching during insertion of the tube. After curing of the resin is completed, the hardened CIPP will extend from manhole to manhole of the section designated providing a structurally sound, corrosion-resistant, watertight conduit that excludes exfiltration and infiltration, is tight-fitting within the existing pipe, and is free of voids or annular spaces between the CIPP and the existing pipe walls. K-Factor for tightness shall equal 7.0 or greater.

All terminations into manhole walls shall be watertight at the time of final inspection. No annular space shall be visible between the CIPP and manhole wall. In the event that an annular space is present, it shall be completely filled with epoxy or other suitable material to the satisfaction of the District.

- G. The Contractor shall be responsible for determining the minimum length to effectively span the distance from the manhole to manhole and shall verify the length of the fabric tube in the field before the tube is either cut to length or wet-out with resin. The tube may run through one or more manholes with the approval of the District.
- H. The Contractor will be responsible for locating and accessing all manholes. A Hydrant Use Permit must be obtained from the main office of Columbia Water for recording water usage used for cleaning, inversion and other work items requiring water. The office address is 1136 Washington Street, Columbia, SC 29209. Contact: Customer Service Department at (803) 545-3300.
- I. Traffic Control: The Contractor shall be responsible for traffic control during the course of each phase of the Work. Prior to beginning Work, Contractor shall provide a traffic control plan to ERCPSD for each section of Work for the review and approval. It is the intent that this Work is to be accomplished with as little disturbance to traffic, private property, and the public as is reasonably possible, consistent with timely completion thereof. The traffic control plan shall reflect such requirements where applicable. Signs, signals, and detours shall conform to SCDOT requirements for streets and highways, latest edition, as well as all local jurisdictional requirements. The Contractor shall have and maintain on site a sufficient supply of traffic cones and other traffic signaling devices, including trained and properly equipped flagmen, to safely control all traffic through the work zone(s). Road closures and/or detours will require advance scheduling and shall have prior approval by ERCPSD and SCDOT”.

3.2 BY-PASS PUMPING

- A. The installation methodology contemplated requires the temporary blocking and back-ups of sewers and sewage. Contractor shall be responsible to limit the extent and duration of such blockages and back-ups so that overflows and spillage onto public or private property and into storm sewers, waterways, and streets does not occur. In the event that such spillage or overflows do occur during the course of or as a result of the Work, the Contractor performing the Work shall immediately notify ERCPSD and eliminate the spillage or overflow and, as necessary, remove the blockage and eliminate the back-up. On elimination of the spillage or overflow, the Contractor is to clean up and disinfect the area as directed by ERCPSD. Work to stop or contain such events is to be deemed EMERGENCY in nature and sufficient justification for total mobilization of resources, the use of overtime or double time, and any other reasonable measures to assure correction of the problem without delay. Damages and any costs incurred arising from blockages, back-ups, spillage, or overflows of sewage during the course of the Work or because of the Work shall be the sole responsibility of the Contractor.
- B. Sewage flow shall be pumped around segments during the installation and testing of cured-in-place pipe, the televising of sewers and lateral service reinstatement.

C. Pumping equipment shall have the capacity to convey 100% of peak flows around the construction area. The flow shall be intercepted at the upstream end of the construction area and shall be pumped through temporary piping of adequate size. The flow shall be discharged into a manhole on the downstream side of the construction area, thus by-passing the sewer segment(s) under construction. The Contractor shall be required to contact all residential and commercial customers whose service lines connect to the sewer main being bypassed and inform them that they will be temporarily out of service. The Contractor shall also advise those customers against water usage until the mainline is back in service. The Contractor may be required to leave door-hangers on each affected residence or commercial entity at least 48 hours prior to beginning work. The door-hangers to be used shall list the Contractor's 24-hour contact name and telephone number as well as a designated contact for the District (if applicable) and a designated contact for ERCPSD. If requested by ERCPSD, the Contractor shall send a knowledgeable representative to any public meeting(s) deemed necessary by ERCPSD to address questions or concerns of the general public. After completing the necessary work on the main line to allow its reuse, the Contractor shall advise those customers that the sewer main is back in service. The Contractor shall maintain a high degree of professionalism, both in workmanship and appearance, at all times. Should a condition arise that the Contractor cannot restore service within 12 hours of service interruption; the Contractor shall make provisions for pumping all flows within the service interruption area at no cost to ERCPSD.

D. Open channels or trenches shall not be used to convey flow.

E. A standby pump of the same capacity shall be required on site.

F. The Contractor is responsible for paying all fines imposed for overflows or spills during construction.

3.3 PRE-CONDITIONING OF SEWERS (Reference Section 13327 of these Specifications)

A. Normal Cleaning of Sewers

1. Sewers shall be cleaned of all debris, roots and other materials that would inhibit proper inversion of CIPP.

2. Utilizing high-pressure jet cleaning equipment, several passes are completed to assure that all debris is removed from the pipe to the satisfaction of the District.

B. Heavy Cleaning of Sewers

If roots are present which require the use of mechanical brushes or dragging devices or, if in the judgment of the District, the pipe is more than 25% full of debris, the pipe shall be cleaned to the satisfaction of the District and additional payment authorized under the appropriate Pay Item on the Bid Form. Heavy Cleaning shall be defined as the pipe being more than 25% full

of debris or requiring the use of apparatus other than normal high-pressure jetting equipment. The Contractor shall be paid for heavy cleaning on the basis of the distance loosened debris is moved to the nearest point of extrication from the sewer. Payment shall be calculated on a lineal foot basis and will be paid in addition to the normal cleaning rate shown on the Bid Sheet. Any heavy cleaning must have pre-approval from the District or its Agent Representative, and must be supported by video or photographic evidence.

C. Debris Disposal

All debris cleaned from the pipe shall be removed and disposed of at a dumpsite designated by ERCPSD at no additional cost to the Contractor. Debris shall not be allowed to wash into any other pipe segment either upstream or downstream from the pipe segment being cleaned.

3.4 VIDEO INSPECTION OF SEWERS

A. Video Inspection: Prior to installation of the CIPP, the section of sewer designated for CIPP is to be televised over its full length using a remote television camera specifically designed for that purpose. ERCPSD requires that all video inspections under this contract be compatible with and suitable for use with the latest version of Granite Net® pipe inspection software.

1. Inspection of the sewer pipe shall be performed by the Contractor's experienced personnel trained in location breaks and obstacles by Closed Circuit Television (CCTV) inspection. All CCTV inspections shall be performed by personnel certified under NASSCO's Pipe Assessment Certification Program (PACP®). Utilizing a color video inspection system with data recording capabilities, the entire pipe section to be lined shall be recorded in a Digital Format and 3 copies produced in accordance with PACP® database format. The interior of the pipe shall be carefully inspected to determine the location of any conditions which may prevent the proper installation of the CIPP, and it shall be noted so that these conditions can be corrected. A DVD/CD-ROM and suitable log shall be submitted to ERCPSD.
2. Pre and post-installation videos and logs shall be submitted during the course of the Work. The television camera used for this purpose shall be operative in one hundred percent moisture conditions. Lighting for the camera shall be sufficient to yield a clear picture of the entire periphery of the pipe. The camera, television monitor, and other components of the video system shall be capable of producing a five-hundred-line resolution picture. The camera's rate of travel shall not exceed 20 feet per minute. The footage meter count shall be clearly visible. Logs shall include date, line size, length, manhole numbers and project number, direction of camera travel, direction of flow, and any observed defects or comments. Videos between manhole segments shall be continuous; no breaks or "blink-outs" in the video shall be observed. The videos shall be in CD-ROM or DVD format.
3. The full cross-sectional area of the pipe shall be visible during video inspection except where misalignment of the sewer may have resulted in standing water in bellies or sags. In these instances, a high-pressure jet nozzle shall be used to draw down any standing water in the pipe so that a representative video can be produced.

4. If for any reason the camera becomes disabled inside the sewer and cannot further proceed, the Contractor will be responsible for retrieving the camera at no additional cost to ERCPSD.

3.5 POINT REPAIRS

- A. Point repairs, (if necessary), shall be performed by ERCPSD in a timely manner or, by a subcontractor acceptable to ERCPSD at a rate of cost plus 15%.
- B. Point Repairs shall be completed in accordance with ERCPSD's Standard Details and Specifications.

3.6 IDENTIFICATION, ASSESSMENT AND PRE-MEASUREMENT OF LATERAL CONNECTIONS

- A. Prior to CIPP inversion the Contractor shall identify and log the location of each lateral service opening via remote closed circuit television of the sewer segment to be rehabilitated.
- B. A 360-degree Pan-and-Tilt view camera shall be used to inspect the pipe. At each connection the operator will stop and turn the camera lens toward the lateral thereby inspecting the first 8 to 12 inches of the lateral connection. The Contractor shall be responsible for determining if connection is active or inactive.
- C. Each service location shall be noted as to the exact distance in feet from the centerline or wall of the upstream manhole. The radial positioning of each service shall also be noted.

3.7 RESIN IMPREGNATION OF THE CIPP TUBE (Wet-Out)

The contractor shall designate a location where the tube shall be impregnated or "wet-out" with resin, using distribution rollers and a vacuum impregnation system to thoroughly saturate the tube's felt fiber prior to installation in the field. The impregnated tube shall be free of pinholes, resin voids and other defects. If the cured-in-place pipe is impregnated at the manufacturing plant, it shall be delivered to the job site in a refrigerated truck, and remain refrigerated prior to installation to prevent premature curing. The flexible tube shall be vacuum impregnated with resin under controlled conditions so as to assure thorough resin impregnation to the full satisfaction of the District. The volume of resin used shall be sufficient to fill all voids in the tube material at normal or design thickness and diameter. The volume of resin shall be adjusted by adding seven to ten percent excess resin for the change in resin volume due to polymerization and allow for any migration of resin into the cracks and joints in the original pipe.

3.8 INVERSION OF CIPP

- A. The impregnated tube shall be inverted through an existing manhole or other approved access point utilizing a hydrostatic water column or pressurized air until it has fully traversed the designated line length and the inversion face breaches the destination manhole or termination point. The fluid column or air pressure shall have been adjusted and maintained to be

sufficient to cause the impregnated tube to hold tight against the existing pipe wall, produce dimples at side connections, and flared ends at the manholes. Lubricant during inversion shall be used as necessary in accordance with the CIPP manufacturer's recommendations. Thermocouples shall be placed at the top and bottom interface of the termination end of the liner for monitoring temperature during the cure cycle. Care should be taken during tube installation not to over-stress the fabric fiber and to minimize longitudinal stretch, resin loss and thinning of the liner wall.

- B. **Inversion of CIPP using a hydrostatic water column is ERCPSD's preferred method of installation.** However, the District may consider the use of alternative methods of installation on a case by case basis. For alternative methods to be considered, the Contractor shall submit a request in writing describing the alternative installation and any benefit to the District resulting from its use. The Contractor may not assume that any method other than a hydrostatic water column is acceptable on any sewer segment without a written request and subsequent approval by the District.
- C. When using pressurized air, particular attention should be given to the maintenance of the minimum required "finished and installed" thickness of the CIPP. Before the inversion begins, the tube manufacturer shall provide the minimum air pressure required to hold the tube tight against the host pipe and the maximum allowable pressure so as not to damage the tube. Once the inversion has started, pressure shall be maintained between the minimum and maximum pressures until the inversion has been accomplished

3.9 CURING

- A. Using Circulated Water
 1. A suitable source of heat and water recirculation equipment is required to circulate heated water throughout the pipe. The equipment shall be capable of delivering hot water throughout the inverted tube to uniformly raise the temperature required to affect a cure of the resin.
 2. Initial cure will occur during temperature heat-up and is completed when exposed portions of the new pipe appear to be hard and sound and the thermocouples indicate that the temperature is of a magnitude to realize an exotherm or cure in the resin. After initial cure is reached, the temperature should be raised to the post-cure temperature recommended by the resin manufacturer. Post-Cure temperature should be held for a period as recommended by the resin manufacturer, during which time the recirculation of the water and cycling of the heat source to maintain the temperature continues.
 3. Prior to any inversion, the Contractor shall provide a **Post-Cure Hold Time and Temperature Table**. This table shall indicate the minimum time and temperature the inverted tube will be held at in order to achieve desired physical properties. The resin manufacturer shall certify both the time and temperatures presented in the table.
 4. Curing must take into account the existing pipe material, the resin system, and the ground conditions (temperature, moisture level, and thermal conductivity of the soil).

B. Using Controlled Steam

Curing of CIPP using circulated water is ERCPSD's preferred method of processing. However, the District may consider the use of controlled stream on a case by case basis. The Contractor shall submit a request in writing describing any benefit to the District resulting from its use. The Contractor may not assume that any method other than circulated water is acceptable on any sewer segment without a written request and subsequent approval by the District.

1. Suitable steam-generating equipment is required to distribute steam throughout the pipe. The equipment shall be capable of delivering steam throughout the inverted tube to uniformly raise the temperature required to affect a cure of the resin.
2. Initial cure will occur during temperature heat-up and is completed when exposed portions of the new pipe appear to be hard and sound and the thermocouples indicate that the temperature is of a magnitude to realize an exothermal cure in the resin. After initial cure is reached, the temperature should be raised to the post-cure temperature recommended by the resin manufacturer. Post-Cure temperature should be held for a period as recommended by the resin manufacturer, during which time the distribution and control of steam to maintain the temperature continues.
3. Prior to any inversion, the Contractor shall provide a **Post-Cure Hold Time and Temperature Table**. This table shall indicate the minimum time and temperature the inverted tube will be held at in order to achieve desired physical properties. The resin manufacturer shall certify both the time and temperatures on the table.
4. The Time and Temperature Table submitted when using steam curing shall be identical to time and temperature hold times when curing with heated, circulated water.
5. Curing must take into account the existing pipe material, the resin system, and the ground conditions (temperature, moisture level, and thermal conductivity of the soil).

3.10 COOL-DOWN

Cool-down of the CIPP shall be in accordance with the manufacturer's recommendations. Absolute care shall be taken during the cool-down process so as to minimize shrinkage of the CIPP.

3.11 TERMINATION AND SEALING AT MANHOLES

No annular space shall be visible between the CIPP and manhole wall. In the event the finished liner does not fit tightly against the original pipe at its termination point(s), the void between the liner and the host pipe shall be sealed and made watertight utilizing manhole end seals or a mixture of resin/epoxy compatible with the CIPP to the satisfaction of the District at no additional cost to ERCPSD.

3.12 INTERNAL LATERAL REINSTATEMENT

- A. After the CIPP has been cured, the existing service connections and laterals shall be reinstated. In general, reinstatement of service connections and laterals shall be accomplished internally, without surface excavation, using a remote control cutting device equipped with a television monitor. Reopened services shall be wire brushed to the satisfaction of the District. In some cases, remote reinstatement may not be possible. In these instances, reinstatement by conventional methods in accordance with ERCPSD standard Specifications is acceptable. All connections must be reinstated to at least 95-percent of the original opening.
- B. All capped or factory plugged service connections shall not be opened unless otherwise directed by the District.

3.13 TESTING OF CIPP

- A. The Contractor shall prepare CIPP Acceptance Tests for each CIPP line segment during the duration of this Contract. The CIPP testing shall include determining flexural strength, flexural modulus and wall thickness for each test sample. These three individual tests shall comprise ONE COMPLETED TEST.
- B. From the point most distant from the heat source, the Contractor shall remove one restrained sample of the installed liner at least 12 inches in length for testing. For sewers 15 inches and larger, plate samples may be taken and cured in the same water as the installed CIPP. For each sample taken, the Contractor shall cut and deliver a 1-inch wide representative sample (taken at least 2 inches from the end of the specimen) to ERCPSD. The sample delivered to ERCPSD shall be labeled and removed from any restraining mold. ERCPSD may return such samples to the Contractor for disposal.
- C. The tests shall be used to verify that the installed CIPP meets these specifications. CIPP thickness shall be measured in accordance with ASTM D5813. Flexural properties shall be determined per ASTM D790. The Contractor shall label and date all samples and deliver the samples directly to ERCPSD. All testing shall be performed by an independent, ASTM-certified testing laboratory of ERCPSD's designation. Payment to the Contractor shall be withheld pending the District's acceptance of the CIPP test results.
- D. Any liner that does not meet the specified strength and/or thickness requirements, regardless of the amount below the specified requirements, shall be corrected by the Contractor in a manner approved by the ERCPSD at no additional cost. The District's decision on how to correct deficient CIPP installations shall be final.
- E. The cost for testing under this section shall be paid via "Cash Allowances" included in the Bid Form and shall not be subject to mark up.

3.14 FINAL ACCEPTANCE

Post-installation videos and lab test results shall be delivered to ERCPSD no later than thirty (30) days from the date the CIPP was installed. The finished CIPP shall be continuous over the length of pipe between two manholes and shall be an impermeable, joint-less conduit, free from visual defects such as foreign inclusions, dry spots, pin holes, lifts, or delamination. Wrinkles in the CIPP, (other than minor, longitudinal pressure wrinkles) or, those caused by the irregular surface of the host pipe wall will not be acceptable. ERCPSD shall determine the acceptability of pressure wrinkling with that decision being final. The Contractor shall correct any deficiencies under this section to the satisfaction of the District at no additional cost to ERCPSD.

PART 4 WARRANTY

The Contractor shall warrant all work and materials installed under this contract for five (5) years from the date of final acceptance. The date of final acceptance shall be the date final payment is made to the Contractor.

END OF SECTION

SECTION 13343
SUBSURFACE MANHOLE REHABILITATION

PART 1 GENERAL

1.1 SCOPE

- A. The scope of this section of the Specifications includes requirements for furnishing all labor, material and equipment to provide for the reconstruction of existing manholes, using an approved method of non-disruptive rehabilitation within an existing structure, which has generally maintained its original shape.
- B. The work performed under this Section of the Specifications is deemed to be Specialty Subcontractor Work.
- C. Supply all products and perform all work in accordance with applicable American Society for Testing and Material (ASTM), American Water Works Association (AWWA), American National Standards Institute (ANSI), or other recognized standards. Latest revisions existing on advertisement date of all standards are applicable. Where discrepancies exist between this Specification and referenced product/process standards, this Specification shall govern.

1.2 SPECIALTY SUBCONTRACTOR AND QUALIFYING SUPERINTENDENT EXPERIENCE

- A. The Specialty Subcontractor performing the work shall be fully qualified, experienced and equipped to complete this work expeditiously and in a satisfactory manner. The Specialty Subcontractor shall be an approved installer as certified and licensed by the manufacturer. The Contractor must certify that the proposed product/process to be used is the exact system for which any and all submittals and certifications were made. No substitutions will be allowed, and misrepresentations or omissions may be grounds for Contract termination with the Contractor waiving any and all claims against the Owner for work performed or costs incurred.
- B. The proposed Qualifying superintendent of the Specialty Subcontractor for the work under this Section shall have successfully installed a cementitious manhole lining product in a minimum of 500 manholes/structures as documented by verifiable Owner references. The Owner must approve both the Specialty Subcontractor and the Qualifying Superintendent to perform this work. The approved superintendent shall be on-site during the execution of all lining operations including prep work and vacuum testing. The lining installation and/or vacuum testing shall cease whenever the superintendent is not on-site.

1.3 STORAGE, HANDLING AND PROTECTION

Care shall be taken in shipping, handling and storage to avoid damaging the lining materials. Any lining product damaged in shipment, showing deterioration, or which has been exposed to any other adverse storage condition that may have caused damage, even though no such damage is evident, shall be marked as rejected and removed at once from the job site. While stored, the lining products shall be adequately packaged, protected and stored in accordance with the

manufacturer's recommendations.

1.4 SUBMITTALS

- A. The Contractor shall submit product data for all products to be installed under this section of the Specifications.
- B. The Contractor shall submit evidence of meeting the requirements of Article 1.02 above.
- C. The Contractor shall provide bond strength data on the cured cementitious lining based on ASTM test methods referenced in this Specification
- D. The Contractor shall provide test data on shrinkage of the cured cementitious lining based on applicable ASTM test methods.
- E. The Contractor shall submit complete shop drawings of the manhole lining system(s) to demonstrate compliance with these Specifications, materials and detailed installation procedures. Testing procedures and quality control procedures shall also be submitted. Certifications that the lining system was manufactured in accordance with these Specifications and the applicable ASTM standards shall be submitted with each material shipment.

PART 2 PRODUCTS

2.1 CEMENTITIOUS LINING

- A. Where cementitious lining is required in the manhole prior to the Level C lining system due to hydrogen sulfide attack, cracks, holes or other structural defects allowing infiltration, a cementitious lining shall be applied to achieve a smooth surface to receive the Level C lining and shall be one of the following products:
 - 1. MS-2C or High-performance Mix as manufactured by Strong Seal Systems
 - 2. Alumaliner as manufactured by Quadex
 - 3. Permacast MS-10,000 or CR-5000 with ConShield as manufactured by APM, Inc.
 - 4. Sewpercoat PG as manufactured by LaFarge Calcium Aluminates
 - 5. Mainstay ML-CA as manufactured by Madewell Products Corp.
 - 6. SewerSeal No. F-170 as manufactured by Sauereisen
 - 7. CSM as manufactured by AW Cook
 - 8. Reliner MSP® by Standard Cement Materials, Inc.

- B. The cementitious lining system shall be pump-able Portland-based cement or fused calcium aluminate cement. The lining shall be applied via low-pressure spray or trowel application only. The materials shall be suitable for all specified design conditions. The final product shall not deteriorate, corrode, or lose structural strength in any manner.
- C. The cementitious lining shall be installed on manhole benches, inverts and walls unless otherwise directed by the Engineer.
- D. The materials used in the cementitious lining systems shall be mixed on-site according to the manufacturer's recommendations. Water shall be added to the materials only during the mixing process and prior to material pumping or spray application. No water shall be added at the nozzle.
- E. The cementitious liner, when cured, shall have the following minimum characteristics at 28 days as measured by the applicable ASTM standards referenced in this Specification:
 - 1. Minimum compressive strength of 6,000 psi.
 - 2. Minimum bond strength of 130 psi.
 - 3. Shrinkage of less than 0.05%
- F. The cured cementitious lining shall be continuously bonded to all brick, mortar, concrete, chemical sealant, grout, pipe and other substrates inside the manhole.
- G. Chemical sealants or grouts used to seal active manhole leaks, patch holes or cracks, fill voids and to otherwise prepare the manhole surface for lining shall be suitable for wastewater system service and chemically resistant to any chemicals or vapors normally associated with domestic wastewater installations.
- F. Cementitious linings shall be compatible with existing thermal conditions in the manhole.

2.2 POLYMER RESIN-BASED LININGS

- A. Polymer resin-based liners shall be 100% solids by volume, volatile organic compound (VOC) free and shall conform to the minimum physical properties listed in the following table:

Compressive Strength	ASTM D695	10,500 psi
Tensile Strength	ASTM D638	7,000 psi
Flexural Strength	ASTM D790	12,000 psi
Flexural Modulus (Initial)	ASTM D790	730,000 psi
Density		87 ±pcf
Bond		Exceed tensile strength of substrate

- B. The structures lined with epoxy resin-based liners shall be resistant to corrosion caused by:
 - 1. Hydrogen Sulfide
 - 2. 20% Sulfuric Acid
 - 3. 17% Nitric Acid
 - 4. 5% Sodium Hydroxide
 - 5. All common ingredients normally associated with sanitary sewer environments
- C. The finished liner shall have long-term (50-year) flexural modulus of elasticity value of 500,000 psi and shall be certified by independent third-party testing.
- D. Polymer resin-based linings shall be compatible with existing thermal conditions in the manhole.
- E. The final product shall not deteriorate, corrode, or lose structural strength in any manner.
- F. The system shall be designed to operate at ambient temperatures up to 140 degrees F with excellent abrasion resistance.

2.3 LEVEL C LINING SYSTEM

- A. The Level C lining system shall be a polymer resin-based lining system applied with a minimum 250 mil (1/4-inch) finished thickness and shall be one of the following products:
 - 1. S-301 Epoxy Spray System as manufactured by Warren Environmental, Inc.
 - 2. Dinjer SG Mastic as manufactured by Pilgrim Permocoat Inc.
 - 3. Raven 405 as manufactured by Raven Lining Systems
 - 4. ShureFlexas manufactured by Sherwin-Williams
 - 5. DS-5 Mainstay Lining System as manufactured by Madewell Products Corp.
 - 6. SLS™ as manufactured by Protective Liner Systems.
 - 7. Structure Guard as manufactured by Quadex.
 - 8. Cor-Guard 501 as manufactured by APM, Inc.

PART 3 EXECUTION

3.1 GENERAL

- A. The Contractor shall notify all property owners who discharge sewage directly into the manhole being rehabilitated at least 48 hours in advance, giving the date, starting and estimated completion time for the work being conducted and any anticipated impact to the property owner.
- B. The Contractor shall bypass pump sewage flows around the manhole being rehabilitated while the work is being performed. A detailed bypass plan shall be submitted to the Engineer for approval before any work shall take place.

NOTE* Should there be any prior rehabilitation or patch/repair material present in the structure to be rehabilitated, the Contractor shall remove said material and his Bid Price shall include the cost of removal and disposal of said material. Prior to rehabilitation under this contract, the subject structure's original substrate shall be visible and clean. All pre-existing material shall have been removed.

- C. Covers or plugs shall be placed over all pipe openings to prevent excess material from entering the wastewater collection system.
- D. Manhole walls and benches shall be monolithically coated to the required thickness by spray-on methods in a single pass or application. Sprayed cementitious linings shall be trowelled smooth after application.
- E. All invert channels shall be coated with grout or cementitious mortar to build up the invert to the invert elevations of new liner pipes (if applicable and as directed by the Engineer); to fill all cracks, voids, holes, etc.; and to form a smooth flow channel. The entire channel shall be coated with the channel coating being a minimum ¼-inch thick.
- F. A complete watertight seal shall be provided at the pipe and manhole wall connections. The Contractor shall submit details of how watertight connections shall be made to the Engineer for approval prior to performing any work.
- G. Manhole lining shall not be installed until all required mainline sewer rehabilitation and/or other manhole work is completed.
- H. Application of the spray applied material must be completed in one mobilization in order to minimize the disruption and cost of bypass pumping, pipeline plugging, traffic control and other ancillary services.
- I. The finished manhole may be returned to service immediately upon completion of the spray application.
- J. Appropriate personal protection equipment shall be used with supplied air being utilized to the spray technician and other personnel in direct contact with the spray environment.

- K. The spray shall be applied so that the entire structure receives a structurally sound, monolithic liner. The finished invert surfaces shall be smooth, free of ridges and bumps and will be sloped in the direction of flow. Special care shall be taken to ensure a smooth transition between the new manhole invert and intersecting pipeline inverts so that flow will not be impaired.
- L. The cured surfacing thickness shall be smooth, even (without ridges or bumps) and continuous with proper sealing connections to any non-rehabilitated areas.
- M. The monolithic lining shall completely cover the interior of the existing manhole including the benches and invert unless otherwise directed by the Engineer. The lining shall effectively seal the interior surfaces of the manhole and prevent any penetration or leakage of ground water infiltration.

3.2 SURFACE PREPARATION

- A. The Contractor shall clean each sewer manhole to be restored and shall dispose of any debris or resulting material in a manner and place suitable to the Owner. Cleaning shall be performed using a high-pressure jet wash at a minimum of 3,500 psi water pressure to remove all dust, biological growths, grease, oils or any other surface contaminants or coatings.
- B. The Contractor shall immediately notify the Engineer of any coatings that cannot be removed or substrates which cannot be cleaned and, upon the approval of the Engineer, may use a blast abrasive in these area(s) to rough up the surface sufficient to obtain and ensure adequate bonding of the liner. Roots shall be removed by manually cutting them from inside the manhole.
- C. The Contractor shall conduct a visual inspection of each manhole after it is cleaned. All active leaks shall be plugged or sealed with an appropriate grout or cementitious lining compatible with the epoxy resin-based lining. Injection grouting may be required to seal active leaks including existing leaks in invert channels and benches. All loose mortar and rubble of existing benches, walls and inverts shall be removed.
- D. The Contractor shall prepare the manhole to receive lining as necessary by reshaping and repairing benches, inverts and walls where required including smoothing out irregular shaped corbel and chimney sections prior to any spray application. All interior surfaces shall be prepared as recommended by the lining system manufacturer. Minimum requirements of the Specification are as follows:
 - 1. All cracks and voids must be repaired and filled with suitable non-shrinking cements, sealants or grouts, including all voids between existing sewer pipes and manhole walls. All patch repairs shall be smooth and even with the manhole wall.
 - 2. All voids around existing manhole rungs, steps and anchors shall be filled.
 - 3. All surfaces shall be suitably prepared for the required bonding of the liner as recommended by the manufacturer and acceptable to the Engineer.

- E. Prior to lining, the Engineer shall inspect and approve the surface preparation work. The Contractor shall notify the Engineer when the manholes are ready for inspection. The manhole lining shall be performed immediately after the Engineer’s inspection or the manhole may need to be re-cleaned prior to lining application to remove accumulated debris on walls and benches.

3.3 REQUIREMENTS FOR RESIN-BASED MANHOLE LINING (Level C)

- A. Application of the liner shall not be made unless the ambient temperature inside the structure is 50 degrees F or higher and expected to be the same or rise during the next 72 hours.
- B. The liner shall be manually sprayed to all surfaces by a factory-certified, trained technician experienced in the application of a spray applied resin.
- C. No other products such as grouts, cements or sealants may be considered as part of the structural restoration. However, said products may be used as part of the repair and surface preparation process as specified in Section 3.02 of this Specification.
- D. The wall of the level “C” liner shall be structurally designed to withstand the hydraulic load generated by the groundwater table and to restore structural integrity.

3.4 ACCEPTANCE TESTING

A. Field Acceptance

- 1. Field acceptance of manhole lining shall be based on the Engineer’s field inspection and evaluation of the appropriate installation and curing test data. The lining shall provide a continuous monolithic surfacing with uniform thickness throughout the manhole interior. If the thickness is not uniform or is less than specified, it shall be repaired or replaced at no additional cost to the Owner.
- 2. If the Engineer has to enter the manhole to inspect the work, the Contractor shall provide forced air ventilation, gas monitors, harnesses, lights, confined space entry, etc. for the Engineer to enter the manhole and perform the inspection in strict and complete accordance with OSHA requirements at no additional cost to the Owner.

B. Cementitious Test Samples

- 1. Samples shall be taken of the installed liner each day that the cementitious lining is installed in the following manner:

Quantity of Manholes Lined in One Day	Quantity of Samples Required
1 – 5	1
6 – 10	2
11 – 15	3
16 or more	4

2. Samples shall be taken at equally spaced intervals throughout the workday. The frequency of tests may be increased by the Engineer and performed by the Contractor at no additional cost to the Owner when the required tests indicate that the installed lining does not meet the Specification.
- C. Cementitious Lining Strength and Bonding Testing Procedures: Samples shall be cube samples. A minimum of six cubes shall be taken for each sample testing. The samples shall be tested in accordance with the applicable ASTM standards, including ASTM C109, to verify that the installed liner meets the compressive strength requirements specified herein and the lining manufacturer's published product data. Tests shall include 7-day and 28-day strength tests (3 cubes for each time period per sample). Shrinkage and bond strength tests shall be performed on each batch or lot of material shipped to the Contractor. Testing shall be performed by an independent laboratory with all associated costs paid by the Contractor. The test results shall be submitted to the Engineer immediately when available and no later than 30 days after lining installation.
- D. Vacuum Testing (Cementitious Mortars)
1. All manholes shall be vacuum tested when all manhole rehabilitation is completed. Manholes shall not be tested until at least 7 days after installation of lining.
 2. Vacuum testing shall be performed in accordance with ASTM C1244 with all associated costs paid for by the Contractor and included in the bid price for manhole lining.
 3. The Engineer shall be present for all testing. The Contractor shall notify the Engineer 48 hours prior to testing.
 4. The Contractor shall submit test reports of the testing which include: the project name, manhole tested, testing data (vacuum pressure, duration of test, etc.) and whether the manhole passed or failed the test. Test reports must be submitted citing the reason for failure noted on the report.
 5. Any manhole failing the test shall be repaired and retested immediately by the Contractor at no additional cost to the Owner.
- E. Spark Arrestor (Holiday) Testing, Level C Polymer Resin-Based Manholes Only
1. All epoxy resin-based manhole linings shall be spark tested prior to being placed in service. Spark testing shall be required of the entire surface area of the manhole (field and joint) and shall be conducted in accordance with the liner system manufacturer's recommendations.
 2. Results of the spark tests will be logged in duplicate and a copy of this log submitted to the Engineer.
 3. Equipment systems used to perform spark testing shall be compatible with the materials to be tested. Spark testing equipment shall provide a visual as well as audible indicator to identify pinholes or splits in the liner system.

F. Finished Lining Systems

1. There shall be no groundwater infiltration or other leakage (active or previously active) through the manhole walls, benches, inverts or pipe connections at the manhole after it has been lined.
2. If leakage is detected, it shall be eliminated with an appropriate, grout or sealant as recommended by the manufacturer, over coated with epoxy or approved level C lining material and approved by the Engineer at no additional cost to the Owner. Injection grouting may be required to stop leaks around or in invert channels, pipe connections and benches.
3. The Engineer's decision regarding acceptable repair methods for defective linings shall be final. If any lining is found to be defective after it has been installed or during the warranty period, it shall be repaired or replaced in a manner satisfactory to the Engineer and at no additional cost to the Owner.

3.5 WARRANTY

- A. The COATINGS MANUFACTURER shall warranty the entire project to include any and all aspects of the surface preparation, base material installation and protective coating applications for a period of TEN (10) YEARS from the date of acceptance by the OWNER. The warranty shall make no distinction between installation practices and material performance and shall not be prorated with respect to elapsed time for the entire warranty period. Manufacturer shall, within a reasonable period of time after receipt of written notice thereof by the Owner period not to exceed sixty (60) calendar days, repair defects in materials or workmanship during said TEN (10) year period, and any damage to other work caused by such defects or repairing of same at his own expense and without cost to the Owner.

END OF SECTION

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APPENDIX A – Recycle Funds

Mandatory SRF Supplemental Conditions for South Carolina State Revolving Fund Program Projects Using Recycled Funds May 2018

Non-Discrimination

It is the policy of the Project Sponsor not to discriminate on the basis of age, race, sex, color, national origin or disability in its hiring and employment practices, or in admission to, access to, or operation of its programs, services and activities. With regard to all aspects of this project, the Contractor certifies and warrants it will comply with this policy. See Attachment B.

Special Notice #R-1

Sponsors and contractors must follow the flood hazard area requirements of the Flood Disaster Protection Act of 1973 contained in 40 CFR Part 30.

Special Notice #R-2

Fire and Extended Coverage Insurance (Builder's Risk):

- a. The Contractor shall maintain, as applicable, in an Insurance Company or Insurance Companies acceptable to the Owner, Fire, Extended Coverage and Vandalism and Malicious Mischief Insurance on buildings and structures, while in the course of construction, including foundations, additions, attachments and all permanent fixtures belonging to and constituting a part of said buildings or structures. The policy or policies shall also cover machinery if the cost of machinery is included in the Contract. The amount of insurance must at all times be at least equal to the actual cash value of the insured property. The policy shall be in the name of the Owner and the Contractor, as their interests may appear, and shall also cover the interests of all subcontractors performing work.
- b. The Contractor shall provide the Owner with satisfactory evidence certifying that the foregoing insurance is in force; and such evidence shall include provisions that the insurance shall not be cancelled, allowed to expire or be materially changed without giving the Owner advance notice by registered mail.
- c. Cancellation and Re-Insurance:
If any insurance should be cancelled or changed by the insurance company or should any insurance expire during the period of this contract, the Contractor shall be responsible for securing other acceptable insurance to provide the coverage specified in this section to maintain continuous coverage during the life of this contract.

Special Notice #R-3

Each bidder is required to certify that they are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participating in a contract using federal funds. In turn, prime contractors will require subcontractors whose contract amount is expected to equal or exceed \$25,000 to also submit such certification using the *Certification Regarding Debarment, Suspension and Other Responsibility Matters* (DHEC 3590) (See Attachment A).

Special Notice #R-4

The Contractor acknowledges to and for the benefit of the Project Sponsor and the State Revolving Fund (SRF) Program that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as “American Iron and Steel;” that requires all of the iron and steel products used in the project to be produced in the United States (“American Iron and Steel Requirement”) including iron and steel products provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Project Sponsor and the SRF Program that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Project Sponsor or the SRF Program. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Project Sponsor or the SRF Program to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney’s fees) incurred by the Project Sponsor or the SRF Program resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the SRF Program or any damages owed to the SRF Program by the Project Sponsor). While the Contractor has no direct contractual privity with the SRF Program, as a lender to the Project Sponsor for the funding of its project, the Project Sponsor and the Contractor agree that the SRF Program is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the SRF Program. See Attachment B.

The prime contractor(s) must certify Buy American compliance using DHEC Form 2556.

DAVIS-BACON AND RELATED ACTS

WAGE RATE REQUIREMENTS FOR FEDERAL AND FEDERALLY ASSISTED CONTRACTS

Wage Rate Requirements

Preamble

With respect to the Clean Water and Safe Drinking Water State Revolving Funds, EPA provides capitalization grants to each State which in turn provides subgrants or loans to eligible entities within the State. Typically, the subrecipients are municipal or other local governmental entities that manage the funds. For these types of recipients, the provisions set forth under Roman Numeral I, below, shall apply. Although EPA and the State remain responsible for ensuring subrecipients' compliance with the wage rate requirements set forth herein, those subrecipients shall have the primary responsibility to maintain payroll records as described in Section 3(ii)(A), below and for compliance as described in Section I-5.

Occasionally, the subrecipient may be a private for profit or not for profit entity. For these types of recipients, the provisions set forth in Roman Numeral II, ~~below~~ [available upon request], shall apply. Although EPA and the State remain responsible for ensuring subrecipients' compliance with the wage rate requirements set forth herein, those subrecipients shall have the primary responsibility to maintain payroll records as described in Section II-3(ii)(A), ~~below~~ and for compliance as described in Section II-5.

I. Requirements Under The Consolidated Appropriations Act, 2017 (P.L. 115-31), and Under The Water Resources Reform and Development Act of 2014 (WRRDA) For Subrecipients That Are Governmental Entities:

The following terms and conditions specify how recipients will assist EPA in meeting its Davis-Bacon (DB) responsibilities when DB applies to EPA awards of financial assistance under the FY 2015 Appropriations Act, and under WRRDA with respect to State recipients and subrecipients that are governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient. If a State recipient needs guidance, the recipient may contact, Sheryl Parsons, parsons.sheryl@epa.gov, 404-562-9337 of EPA, Region 4 for guidance. The recipient or subrecipient may also obtain additional guidance from DOL's web site at <http://www.dol.gov/whd/>

1. Applicability of the Davis- Bacon (DB) prevailing wage requirements.

Under the Consolidated Appropriations Act, 2017 and WRRDA, DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a sub recipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the sub recipient must discuss the situation with the recipient State before authorizing work on that site.

2. Obtaining Wage Determinations.

(a) Sub recipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

(i) While the solicitation remains open, the sub recipient shall monitor www.wdol.gov weekly to ensure that the wage determination contained in the solicitation remains current. The sub recipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the sub recipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the sub recipient.

(ii) If the sub recipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the sub recipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The sub recipient shall monitor www.wdol.gov on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the sub recipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the sub recipient shall insert the appropriate DOL wage determination from www.wdol.gov into the ordering instrument.

(c) Sub recipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a sub recipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the sub recipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the sub recipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The sub recipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the sub recipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the Consolidated Appropriations Act, 2017, or WRRDA, the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or

mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. Sub recipients may obtain wage determinations from the U.S. Department of Labor's web site, www.dol.gov.

(ii)(A) The sub recipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the sub recipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the sub recipient (s) to the State award official. The State award official will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the sub recipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the

benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding.

The sub recipient(s), shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the sub recipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the sub recipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/whd/forms/wh347instr.htm> or its successor site.

The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the sub recipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sub recipient(s).

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

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not

registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and sub recipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

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

4. Contract Provision for Contracts in Excess of \$100,000.

(a) Contract Work Hours and Safety Standards Act. The sub recipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The sub recipient, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these

clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Sub recipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Sub recipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

(a) The sub recipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The sub recipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The sub recipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Sub recipients must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the contractor or subcontractor is not complying with DB. Sub recipients shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence."

(c) The sub recipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The sub recipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable, the sub recipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Sub recipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the sub recipient shall verify evidence of fringe benefit plans and payments there under by contractors and subcontractors who claim credit for fringe benefit contributions.

(d) The sub recipient shall periodically review contractors and subcontractor's use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Sub recipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/whd/america2.htm>.

OPERATOR: Grader/Blade.....\$ 20.11	1.39
OPERATOR: Loader.....\$ 10.50	1.98
TRUCK DRIVER.....\$ 14.15	2.32

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

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

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate

changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

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

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the

Branch of Construction Wage Determinations. Write to:

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

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

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

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

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

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

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

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END OF GENERAL DECISION

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APPENDIX A
ATTACHMENT A

FORM 2556
FORM 3590



Bidder's American Iron and Steel Certification



SRF Project Number 524-27

Project Name 54-Inch Sewer Trunk Line Rehabilitation Division _____

Project Sponsor East Richland County Public Service District

Both the Clean Water State Revolving Fund (CWSRF) and the Drinking Water State Revolving Fund (DWSRF) require loan recipients to use iron and steel products that are produced in the United States in a manner that complies with the American Iron and Steel (AIS) requirement for projects that involve the construction, alteration, maintenance, or repair of a public water system or treatment works. For more information about AIS requirements and authorization, visit the U.S. Environmental Protection Agency (EPA)'s website: <http://www.epa.gov/cwsrf/state-revolving-fund-american-iron-and-steel-ais-requirement>.

As a bidder for the project listed above, I certify that I have read, understand, and will comply with the "American Iron and Steel" provisions as required by federal law. Furthermore, I understand that AIS provisions apply to any and all portions of this project, including subcontracted portions and that I certify to the best of my knowledge and belief that I will identify domestic sources of AIS-covered products, provide verification documentation for AIS-compliance, and when needed provide waiver documentation per current EPA guidance.

I understand that a false statement on this certification may be grounds for rejection or termination of any award.

Signature of Bidder Date

Printed Name and Title of Bidder

Name of Bidder's Company

Bidder's Company Address

Bidder's Telephone Number

Instructions – DHEC 2556

PURPOSE: The Bidder's "American Iron and Steel" Certification is used to certify that, as required by federal law, all of the iron and steel products permanently incorporated into a project funded with assistance by the State Revolving Fund are produced in the United States in a manner that complies with the AIS requirement, unless a waiver is granted by the EPA.

GENERAL INFORMATION: American Iron and Steel (AIS) Guidance identifies "iron and steel" products as the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers, *municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, *structural steel, *reinforced concrete, and *construction materials. (*Note that several of these products are actually categories of products.)

Relevant AIS information is posted on the EPA's website, including guidance, examples of AIS-compliant documentation, currently approved national waivers, and information on how to request an individual project waiver: <http://www.epa.gov/cwsrf/state-revolving-fund-american-iron-and-steel-ais-requirement>.

INSTRUCTIONS: The contractor bidding on a project funded in whole or in part by the SRF will enter SRF project number, name, and project sponsor's name (utility, town, etc.).

Certify that the contractor will comply with AIS requirements by signing the form. Include the date, name, and title of the bidder, name of bidder's company, bidder's address, and bidder's telephone number. Please note that AIS covered materials to be supplied by a subcontractor must be AIS compliant as well.

The Project Sponsor must submit this form from the winning bidder (typically as part of the bid package) either by email to the DHEC project manager or by mail to: SRF Section - Water Facilities Permitting Division, S.C. DHEC, 2600 Bull Street, Columbia, SC 29201.

DHEC REVIEW AND FILING: The SRF Section will use this form to document bidder compliance with AIS. The form will be kept in the Bidding file for the named project and will be retained for three years following the final SRF disbursement to the project's Sponsor - per Retention Schedule 15795.



**Certification Regarding
Debarment, Suspension, and
Other Responsibility Matters***



SRF Project Number 524-27

Project Name 54-Inch Sewer Trunk Line Rehabilitation

Project Sponsor East Richland County Public Service District

**See Instructions for who must submit this form and where/when it should be submitted.*

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
2. Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
4. Have not within a three year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default; and
5. Will not contract with an entity that is presently debarred, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 U.S.C. Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

Name of Prospective Participant (Town, Utility, Contractor, Subcontractor)

Printed Name and Title of Authorized Official

Signature of the Authorized Official

Date

I am unable to certify the above statements. Attached is my explanation.

Submit by email to DHEC project manager or by mail to:
SRF Section - Water Facilities Permitting Division, S.C. DHEC, 2600 Bull Street, Columbia, SC 29201

INSTRUCTIONS – DHEC 3590

PURPOSE: The *Certification Regarding Debarment, Suspension, and Other Responsibility Matters* form (Debar form) is used to certify that potential participants are not debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs under Executive Order 12549 “Debarment and Suspension”, as required for State Revolving Fund (SRF) projects designated as equivalency projects.

INSTRUCTIONS:

- This form is to be filled out by prospective participants in the State Revolving Loan fund program, including towns, public utilities, contractors, and subcontractors (when the subcontract is greater than \$25,000).
- Fill in the project sponsor’s name, project name, and SRF project number.
- Fill in the potential participants name and name of authorized official for the participant. Sign and date the form to certify that the potential participant is not debarred, suspended, or otherwise excluded from or ineligible for participation in Federal assistance programs under Executive Order 12549 “Debarment and Suspension,” or, provide an explanation why the potential participant cannot.
- Where/when to submit:
 - A prospective loan recipient (Sponsor) must return the signed certification or explanation with the preliminary engineering report.
 - A prospective prime contractor must submit a signed certification or explanation to the entity awarding the contract (Sponsor) for submittal to the SRF Section. Upon receipt, the Sponsor must visit *sam.gov* and search to confirm that the contractor is not presently excluded from participation in federally-assisted opportunities.
 - A prospective subcontractor, with a subcontract worth over \$25,000, must submit a signed certification or explanation to the (prospective) prime contractor for the project for submittal to the SRF Section. Upon receipt, the prime contractor must then visit *sam.gov* and search to confirm that the entity is not presently excluded from participation in federally-assisted opportunities.
 - See also, SRF guidance documents.

DHEC REVIEW AND FILING. The SRF Section will use this form to document compliance with Executive Order 12549. The Sponsor’s Debar form will be kept in the Loan file for the named project, and the prime contractor or subcontractor’s Debar form will be kept in the DBE/EEO or Bidding file for the named project and will be retained for three years following the final SRF disbursement to the project’s Sponsor - per Retention Schedule 15795.

ATTACHMENT B

NONDISCRIMINATION IN THE SRF PROGRAM

- ❖ The Age Discrimination Act of 1975
- ❖ Title VI of the Civil Rights Act of 1964
- ❖ Section 13 of the Federal Water Pollution Control Act Amendments of 1972
- ❖ Section 504 of the Rehabilitation Act of 1973

The SRF program is bound by the civil rights laws above, which prohibit discrimination in providing services or benefits on the basis of race, color, religion, national origin, sex, handicap or age.

These laws were amended in 1988 to make clear that their anti-discrimination powers are intended to apply to the entire operations of a project sponsor, not just the specific program, project, or activity that involves federal assistance. Recipients of federal financial assistance from the US EPA must comply with the above laws.

Direct EPA grantees, such as DHEC's SRF Program, are required to complete and submit to EPA Form 4700-4: Preaward Compliance Review Report for all Applicants and Recipients Requesting Federal Financial Assistance. SRF assistance recipients do not have to submit EPA form 4700-4 to EPA or DHEC, but instead are asked to review the form to self-assess how well the entity addresses nondiscrimination in its programs. An SRF Project Sponsor needs to be compliant with nondiscrimination practices. Keeping a copy of the form with any relevant documentation in the project's documentation file would be a best practice.

"AMERICAN IRON AND STEEL" PROVISIONS

- ❖ Clean Water Act, Section 608 and Consolidated and Further Continuing Appropriations Act, 2015- "Use of American Iron and Steel" (and as required by any subsequent continuing or annual appropriations act)

The American Iron and Steel (AIS) provision requires Clean Water State Revolving Fund (CWSRF) and Drinking Water State Revolving Fund (DWSRF) assistance recipients to use iron and steel products that are produced in the United States. This requirement applies to projects for the construction, alteration, maintenance, or repair of a public water system or treatment works. Project Sponsors are required to follow "American Iron and Steel" provisions and certify that all iron and steel products used in the project are produced in the United States, unless a waiver is granted by the U. S. Environmental Protection Agency.

"Iron and steel" products means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete and construction materials. Additional information may be found in Guidance posted to the EPA Website, <https://www.epa.gov/cwsrf/state-revolving-fund-american-iron-and-steel-ais-requirement>.

Appendix B
SRF Signage Requirements

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Signage to Increase Public Awareness of SRF Assistance Agreements

An United States Environmental Protection Agency (EPA) initiative to enhance public awareness of EPA assistance agreements nationwide has been passed through to State Revolving Fund programs. The EPA "signage requirement" applies to SC SRF projects identified to meet federal requirements. Complying with the signage requirement is an eligible SRF expense.

Factors for an SRF Project Sponsor to consider when choosing a signage option include the complexity and location of the project and the nature of the community. There are a number of implementation options that are described below.

Implementation options:

- **Standard Signage:** This is use of a traditional sign that includes the name of the facility, project, and community; project cost; the DHEC logo; and the EPA logo. Other information could be included as space allows. This option should be selected for projects where the sign would be easily visible, such as near a major road or thoroughfare or where the facility is in a location where this would effectively publicize the project. When choosing this option, contact your DHEC project manager to request the DHEC and EPA logos and use guidelines.

The remaining signage options advertise SRF assistance in different formats, but each option should share the following information:

- 1 *Name of facility, project and community*
 - 2 *Project administered by DHEC's State Revolving Fund Section*
 - 3 *Project was [wholly / partially] funded with EPA funding*
 - 4 *Brief description of the project*
 - 5 *Brief listing of water quality benefits to be achieved*
- **Posters or Brochures:** A poster or brochure would share the information listed above and could include a website address for the SC SRF program (<http://www.scdhec.gov/srf>). Pictures of the proposed facility or project location could also be included in this format. Posters or brochures should be placed in a public location that is accessible to a wide audience of community members (e.g., town or city hall, community center, local park, public library, local government facility, court house or other public meeting space). This option may be more appropriate for projects located in rural areas.

- **Newsletter, Periodical, or Press Release:** For communities where there is no suitable public space or where advertisement through signage is unlikely to reach community members effectively, projects may be advertised in a community newsletter or similar periodical. The newsletter, periodical, or press release would contain the information indicated above.
- **Insert or Pamphlet in Water/Sewer Bill:** This approach would effectively publicize the project to those individuals directly benefitting from the project using the information listed above. The layout of such an insert might be an informative paragraph or more like a brochure.
- **Online and Social Media Publicity:** Many communities are increasingly finding that the online forum is the most cost-effective approach to publicize their programs and reach a broad audience of stakeholders. Online publicity may appear on the town, community, or facility website if available. Social media sites such as Facebook or Twitter can also be used. This option could be a more cost-effective option than traditional signs or print media. Since the web offers a visual platform, pictures and other visual elements could be incorporated when sharing the information listed above. In the case of some projects, such as nonpoint source projects, there might be additional opportunities for online publicity through partner agencies or organizations.

Below is sample language that may be used for any of the above options:

Construction of upgrades and improvements to the [Name of Facility or Infrastructure Component @ Project Location] is being financed by the [Clean Water/Drinking Water] State Revolving Fund (SRF). The [CW/DW] SRF program is administered by the South Carolina Department of Health and Environmental Control with joint funding from the U.S. Environmental Protection Agency and the State of South Carolina. This project will [description of project] and will provide [details specifying particular water quality benefits] for community residents and businesses in and near [name of town, city, and/or water body or watershed to benefit from the project]. [CW/DW] SRF programs operate around the country to provide states and communities the resources necessary to maintain and improve the infrastructure that protects our valuable water resources.

A hard copy of the selected option will need to be provided to your SRF project manager for documentation. If a sign, poster, or online publicity method is used, submitting a Word or PDF copy is acceptable.

If you have any questions on how to meet the signage requirement, contact your SRF project manager.

APPENDIX C

Proposed Schedule for Construction (DHEC Form 3588)



Schedule for Construction



SRF Project Number 524-27
 Project Name 54-Inch Sewer Trunk Line Rehabilitation
 Project Sponsor East Richland County Public Service District

Enter proposed dates (month/year) for the following:

Bid Opening May 05, 2020
 Contract Execution May 27, 2020
 Notice to Proceed June 01, 2020
 Construction Start / Initiation of Construction June 01, 2020
 DHEC "Approval to Operate" / Initiation of Operation December 05, 2020
 Construction Completion February 03, 2021

In addition to the above, estimated dates for the following items should be provided (if applicable) and must be enacted prior to placing project in operation:

Sewer Use Ordinance enactment date N/A
 Pretreatment Program enactment date N/A

Prepared by James C. Reigart, PE Date March 30, 2020

Preparer's Title and Organization Senior Project Manager - W.K. Dickson & Co., Inc.

Submit by email to DHEC project manager or by mail to:
 SRF Section - Water Facilities Permitting Division, S.C. DHEC, 2600 Bull Street, Columbia, SC 29201

INSTRUCTIONS/PURPOSE: The Sponsor or the Sponsor's Engineer fills out the *Schedule for Construction* form to inform the State Revolving Fund (SRF) program of the construction schedule that the Sponsor is planning to follow for this project. Enter the requested project information and proposed dates for the indicated construction milestones.

DHEC REVIEW AND RETENTION: The SRF Section will review this form when it is submitted. The form will be kept in the Construction file for the named project and will be retained for three years following the final SRF disbursement to the project's Sponsor - per Retention Schedule 15795.