



**Purchasing Department
113 Mable T. Willis Blvd.
Walterboro, SC 29488
843.782.0504**

**BID: CTC-23
ACADEMY ROAD WATER & WASTEWATER RELOCATIONS**

Due: Wednesday, June 16, 2021 @ 11:00am

EMAIL YOUR RESPONSE TO:

Kaye B. Syfrett, Procurement Manager at ksyfrett@colletoncounty.org

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A. OVERVIEW

Colleton County, South Carolina (the "**County**") requests bids from qualified licensed contractors for the relocation of water and wastewater lines impacted by the US15/Academy Road/Tuskegee Airman Road intersection improvement project located in the City of Walterboro.

Subject to the terms, conditions, provisions, and the enclosed specifications, responses to this solicitation will be received at this office until the stated date and time. Responses received after the scheduled due date and time will be rejected. Bids must be submitted in a sealed package marked on the outside with the Contractor's name, address, and the solicitation name and number.

This solicitation does not commit Colleton County to award a contract, to pay any costs incurred in the preparation of bids submitted, or to procure or contract for the services. The County reserves the right to accept or reject or cancel in part, or its entirety offers received because of this request is deemed to be in the best interest of the County to do so.

Questions regarding this solicitation must be submitted via email to **Carla Harvey, County Engineer at charvey@colletoncounty.org** no later than **11:00 am on Wednesday, June 9, 2021**. Answers to all questions will be posted on the County website as addendums to this bid.

B. SCOPE OF SERVICES

The project consists of the relocation of certain City of Walterboro water and wastewater system components in support of the Route US-15/S-130/S-754 Intersection Improvements. These include the relocation of three (3) 1-inch water meters and a backflow preventer; the transfer of the 1-inch service connections from an existing 3-inch water main to an adjacent existing 8-inch water main; the transfer of one (1) 2-inch water service connection from an existing 3-inch water main to an adjacent existing 8-inch water main; the removal and replacement of a 2-inch water service line through an existing casing pipe; the relocation of an existing fire hydrant; the abandonment and capping of the existing 3-inch water main; the relocation and lowering of a section of existing 10-inch sewer force main under a proposed storm drain pipe which will be installed by others; and the raising of the frames and covers of three (3) existing sewer manholes.

Utilities may be present along certain roads. It will be the responsibility of the contractor to coordinate with the local utility providers and for making the necessary relocations. All road work is to be performed within the existing right-of-way of the road.

This contract is a unit price contract. Quantities and distances provided are estimates only. It is the responsibility of the bidder to take all measurements to determine the quantities needed to meet the scope of services listed.

The contractor will have 60 days to complete the project from the issuance of Notice to Proceed.

C. INSTRUCTIONS TO CONTRACTOR

1. The submittal must include **one (1)** BID response along with a completed **W-9 form**. The individual signing the response must be an Agent legally authorized to bind the company. To be considered responsive, responders must use the Bid Form included in the specifications.

2. All bids are due by **11:00 am on Wednesday, June 16, 2021. Responses must be submitted via email to Kaye B. Syfrett, Procurement Manager at ksyfrett@colletoncounty.org.**
3. It is the contractor's sole responsibility to ensure that solicitation responses, amendments thereto, or withdrawal requests are submitted by the scheduled due date and time.
4. The contractor must mark as "Confidential" each part of their response, which they consider to be proprietary information that could be exempt from disclosure under Section 30-40(C) Code of Laws of South Carolina, 1976, Freedom of Information Act. Colleton County reserves the right to determine whether this information should be exempt from disclosure and legal action may not be brought against the County or its agents for its determination in this regard.
5. **RESPONSE FORM:** All responses shall be printed in ink or typewritten. If required, additional pages may be attached. Bids written in pencil will be disqualified.
6. Subject to the terms, conditions, provisions, and the enclosed specifications, responses to this solicitation will be received via email until the stated date and time. Responses received after the scheduled due date and time will be rejected. Bids must be submitted via email to Kaye B. Syfrett, Procurement Manager at ksyfrett@colletoncounty.org.
7. This solicitation does not commit Colleton County to award a contract, to pay any costs incurred in the preparation of BID submitted, or to procure or contract for the services. The County reserves the right to accept or reject or cancel in part, or its entirety offers received as a result of this request is deemed to be in the best interest of the County to do so.

A written "No Response" qualifies as a response; however, it is the responsibility of the Contractor to notify the Procurement Office if you receive solicitations that do not apply.

D. SELECTION CRITERIA

It is the intent of Colleton County to award one contract to the lowest responsive, responsible bidder based on the total bid submitted on the Bid Form with final approval by the County Council. Colleton County reserves the right to reject any or all bids, and to award a most advantageous contract, and in the best interest of the County and its partners.

E. SPECIFIC TERMS AND CONDITIONS

1. **COMPETITION:** This solicitation is intended to promote full and open competition. If any language, specifications, terms, and conditions, or any combination thereof restricts or limits the requirements in this solicitation to a single source, it shall be the responsibility of the interested vendor to notify the Procurement Office in writing no later than five (5) business days before the scheduled due date and time.
2. **RESPONDENTS QUALIFICATION:** The County reserves the right to request satisfactory evidence of their ability to furnish services per the terms and conditions listed herein. The County further reserves the right to make the final determination as to the Contractor's ability to provide said services.

3. RESPONSE WITHDRAWAL: Any responses may be withdrawn before the established closing date and time, but not thereafter with proper approval from the Procurement Manager.
4. REJECTION: Colleton County reserves the right to reject any bids, cancel or withdraw this solicitation, and waive any technicality if deemed to be in the best interest of the County.
5. WAIVER: The County reserves the right to waive any Instructions to Contractor, General or Special Provisions, General or Special Conditions, or specifications deviation if deemed to be in the best interest of the County.
6. RESPONSE PERIOD: All responses shall be good for a minimum period of 90 calendar days.
7. DEVIATIONS FROM SPECIFICATIONS: Any deviation from specifications indicated herein must be pointed out; otherwise, it will be considered that items offered are in strict compliance with these specifications, and the successful contractor will be held responsible, therefore. Deviations must be explained in detail on a separate attached sheet(s). The listing of deviations, if any, is required but will not be construed as waiving any requirements of the specifications. Unidentified deviations found during the evaluation of the response may be a cause for rejection.
8. AMENDMENTS: All amendments to and interpretations of this solicitation shall be in writing and issued by the Procurement Manager of Colleton County.
9. DEBARMENT: By submitting a bid, the contractor is certifying that they are not currently debarred from responding to any request for bids by any agency or subdivision of the State of South Carolina or the United States Federal Government, nor are they an agent of any person or entity that is currently debarred from submitting bids on contracts by any agency or subdivision of the State of South Carolina or the United States Federal Government.
10. DEFAULT: In case of default by the Contractor, the County reserves the right to purchase any or all items in default in the open market, charging the Contractor with any excessive costs. Should such charge be assessed, no subsequent solicitation response of the defaulting Contractor will be considered in future BID's, until the assessed charge has been satisfied.
11. HOLD HARMLESS: All respondents to this BID shall indemnify and hold harmless Colleton County Government and any of their officers and employees from all suits and claims alleged to be a result of this request for bids. The issuance of this request of bids constitutes only an invitation to present a bid. Colleton County reserves the right to determine, at its sole discretion, whether any aspect of a respondent's submittal meets the criteria in this request for bids. Colleton County also reserves the right to seek clarifications, to negotiate with any firm submitting a response, to reject any or all responses with or without cause, and to modify the procurement process and schedule.
12. CANCELLATION: If this request for bids is withdrawn or the project canceled for any reason, Colleton County shall have no liability to any respondent for any costs or expenses incurred in connection with this request for bids or otherwise.
13. COLLETON COUNTY PURCHASING ORDINANCE: The Request of Bids is subject to the provisions of the Colleton County Purchasing Ordinance and any revisions thereto, which are hereby incorporated into this BID in their entirety except as amended or superseded within. This ordinance can be found at <https://www.municode.com/library/sc/colletoncounty/codes/codeofordinances> under Title 3 - Revenue and Finance.

14. FAILURE TO SUBMIT ALL MANDATORY FORMS: Failure to submit all the mandatory forms for this request of bids shall prove just cause for rejection. However, Colleton County reserves the right to decide, on a case by case basis, in its sole discretion, whether or not to reject such a bid as non-responsive.
15. CONTRACT AWARD:
 - a. This solicitation and submitted documents, when properly accepted by Colleton County shall constitute an agreement equally binding between the successful Contractor and the County. No oral statement of any person shall modify or otherwise change, or affect the terms, conditions, or specifications stated in the resulting agreement. The County shall not be legally bound by any amendment or interpretation that is not fully executed by both parties in writing.
 - b. The successful contractor shall be required to execute a formal agreement with the County's Procurement Office within ten (10) business days after issuance of the Notice of Award.
16. CONTRACT ADMINISTRATION: Questions or problems arising after award of an agreement shall be directed to the Procurement Manager by calling (843) 782-0504. Copies of all correspondence concerning this solicitation or resulting agreement shall be sent to the Purchasing Department, 113 Mable T. Willis Blvd, Walterboro, SC 29488.

F. GENERAL CONTRACTUAL REQUIREMENTS

1. ABANDONMENT OR DELAY: If the work to be done under this contract shall be abandoned or delayed by the Contractor, or if at any time the County shall believe and shall so certify in writing that work has been abandoned or delayed by the Contractor, the County may annul the contract or any part thereof if the Contractor fails to resolve the matter within thirty (30) days of written notice.
2. CONTRACTOR'S COOPERATION: The Contractor shall maintain regular communications with the Project Manager and shall actively cooperate in all matters of this contract.
3. RESPONSIBILITY: The Contractor shall at all times observe and comply with all federal, state, local and municipal laws, ordinances, rules, and regulations in any manner affecting the contract.
4. NON-APPROPRIATION/SUBSTITUTION PERMITTED: If the Colleton County Council fails to appropriate or authorize the expenditure of sufficient funds to provide the continuation of this contract or if a lawful order issued in, or for any fiscal year during the term of the agreement, reduces the funds appropriated or authorized in such amounts as to preclude making the payments set out therein, the agreement shall terminate on the date said funds are no longer available without any termination charges or other liability incurring to County. Following any such non-appropriation, the master lease agreement shall contain no limitation on the County's ability to replace the equipment financed with any other equipment.
5. INDEMNIFICATION: Except for expenses or liabilities arising from the negligence of the County, the Contractor hereby expressly agrees to indemnify and hold the County harmless against all

expenses and liabilities arising out of the performance or default of any resulting agreement or arising from or related to the Work as follows:

The Contractor expressly agrees to the extent that there is a causal relationship between its negligence, action or inaction, or the negligence, action or inaction of any of its employees or any person, contractor, or corporation directly or indirectly employed by the Contractor, and any damage, liability, injury, loss or expense (whether in connection with bodily injury or death or property damage or loss) that is suffered by the County and its employees or by any member of the public, to indemnify and save the County and its employees harmless against any liabilities, penalties, demands, claims, lawsuits, losses, damages, costs, and expenses arising out of the performance or default of any resulting agreement or arising from or related to the equipment. Such costs are to include defense, settlement, and reasonable attorneys' fees incurred by the County and its employees. This promise to indemnify shall include bodily injuries or death occurring to Contractor's employees and any person, directly or indirectly employed by the Firm (including without limitation any employee of any subcontractor), the County's employees, the employees of any other independent contractor, or occurring to any member of the public. When the County submits notice, the Firm shall promptly defend any aforementioned action.

The prescribed limits of insurance set forth herein shall not limit the extent of the Contractor's responsibility under this Section. The terms and conditions contained in this Section shall survive the termination of any resulting agreement or the suspension of the Work hereunder. Additionally, the County will not provide indemnity to the successful FIRM. Failure to comply with this section may result in your request for a proposal to be deemed non-responsive.

6. **FORCE MAJEURE:** The Contractor shall not be liable for any excess costs if the failure to perform the resulting agreement arises out of causes beyond the control and without fault or negligence of the Contractor. Such causes may include, but are not restricted to acts of God or of the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; but in every case, the failure to perform must be beyond the control and without the fault or negligence of the contractor. If the failure to perform is caused by default of a subcontractor, and if such default arises out of causes beyond the control of both the Contractor and subcontractor and without excess costs for failure to perform unless the supplies or services to be furnished by the subcontractor were obtainable from other sources in sufficient time to permit the contractor to meet the required delivery schedule.
7. **ARBITRATION:** Under no circumstances and with no exception will Colleton County act as arbitrator between the Contractor and any sub-contractor.
8. **PUBLICITY RELEASES:** The Contractor agrees not to refer to the award of this contract in commercial advertising in such a manner as to state or imply that the products or services provided are endorsed or preferred by the County. The Contractor shall not have the right to include the County's name in its published list of customers without prior approval of the County Administrator. Concerning news releases, only the name of the County, type, and duration of any resulting agreement may be used and then only with prior approval of the County. The Contractor also agrees not to publish, or cite in any form, any comments or quotes from the County's staff unless it is a direct quote from the Procurement Manager.
9. **GOVERNING LAWS:** Any agreement arising from this solicitation shall be governed by the laws of the State of South Carolina and any disputes arising out of said agreement shall, if litigation is

necessary, be litigated only in a Circuit Court for the Fourteenth Judicial Circuit sitting in Colleton County, South Carolina. The prevailing party shall be entitled to attorney's fees and all costs of said litigation.

10. ASSIGNMENT: The Contractor shall not assign in whole or in part any agreement resulting from this Request for Bids without the prior written consent of the County. The Contractor shall not assign any money due or to become due to him under the said agreement without the prior written consent of the County.
11. AFFIRMATIVE ACTION: The successful Contractor will take affirmative action in complying with all Federal and State requirements concerning fair employment and treatment of all employees, without regard or discrimination because of race, color, religion, sex, national origin, or physical handicap.
12. FAILURE TO DELIVER GOODS PER TERMS & CONDITIONS: In case of failure to deliver goods per the contract terms and conditions, Colleton County, after due oral or written notice, may procure substitute goods or services from other sources and hold the contractor responsible for any resulting additional purchasing and administrative costs. This remedy shall be in addition to any other remedies which Colleton County may have.
13. TERMINATION OF CONTRACT:
 1. Subject to the provisions below, the contract may be terminated by the Purchasing Department providing a thirty (30) days advance notice in writing is given to the Contractor.
 - a. Termination for Convenience: If this contract is terminated or canceled upon request and for the convenience of the County without the required thirty (30) days advance written notice, then the County shall negotiate reasonable termination costs, if applicable.
 - b. Termination for Cause: Termination by the County for cause, default, or negligence on the part of the Contractor shall be excluded from the foregoing provisions; termination costs, if any, shall not apply. The thirty (30) days advance notice requirement is waived and the default provision in this request for bids shall apply.
 - c. The County shall be obligated to reimburse the Contractor only for those services rendered before the date of notice of termination, less any liquidation damages that may be assessed for non-performance.
 2. Non-Appropriations Clause: Notwithstanding any other provisions of the contract, if the funds anticipated for the continued fulfillment of this contract are at any time. Not forthcoming, through the failure of the County Government to appropriate funds, discontinuance or material alteration of the program under which funds were provided, the County shall have the right to terminate the contract without penalty by giving not less than thirty (30) days written notice documenting the lack of funding. Unless otherwise agreed to by the County and the Contractor, the contract shall become null and void on the last day of the fiscal year for which appropriations were received.
14. BONDS: Bid, Payment and Performance Bonds are required for this BID.
15. OWNERSHIP OF MATERIAL: Ownership of all data, material, and documentation originated and prepared for the County according to this contract shall belong exclusively to the County.

16. INSURANCE: Colleton County will require the following to remain in force at all times through the life of the contract:

Professional Liability Insurance – Minimum \$1,000,000.00 - Proof of in-force insurance must be provided in the response to the RFB

Other insurances:

Workers' Compensation - \$100,000 – each accident

Statutory Coverage and Employer's - \$100,000 for each employee

Liability - \$500,000 – policy limit

Comprehensive General Liability - \$1,000,000 – bodily injury each occurrence

\$1,000,000 – bodily injury aggregate

\$1,000,000 – property damage each occurrence

\$1,000,000 – property damage aggregate

Products-Completed Operations - \$1,000,000 – aggregate

Business Auto Liability – Same as Comprehensive General Liability

Excess or Umbrella Liability - \$1,000,000

Colleton County will be named as an "additional insured" party

G. SPECIAL PROVISIONS & SPECIFICATIONS – Colleton CTC

<p>This project is to be constructed under the South Carolina Department of Transportation's Specifications for Highway Construction Edition of 2007, the South Carolina Department of Transportation's 2004 Construction Manual, and the Supplemental Technical Specifications in effect at the time of the letting, and the following Special Provisions.</p>

DEFINITION AND TERMS

The project Owner is COLLETON COUNTY. In the specifications where the terms "SCDOT" or "Department" or other like terms are used to describe the facility Owner, it shall be interpreted as meaning Colleton County, as appropriate.

Add "Notice-to-Proceed" to Section 101 as follows:

Notice-to-Proceed. A written notice to the Contractor fixing the date on which the Contract Time will commence to run and on which the Contractor may start to perform obligations under the Contract Documents.

The owner intends to have the Contractor begin work on this project as soon as practical. The owner anticipates that an award and contract will be issued within two weeks after bids are received. The owner will require that the completed contract, bonds, insurance, and other information required by the contract shall be completed within two weeks after bids are received.

ERRATA TO 2007 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION

See attached Supplemental Specification dated **May 4, 2009**.

SUBSTANTIAL COMPLETION OF WORK

Section 101.3.76 is hereby replaced with the following:

101.3.76 Substantial Completion of Work

Substantial Completion of Work is the point in the project when work has been constructed to the typical section in the Plans over the entire length of the project including tie-ins, all pay items have been installed in reasonable conformance with the plans and specifications over the entire length of the project and all lanes of traffic are open to the public in their final configuration with the only remaining work to be performed being punch list items.

Substantial Completion for this project must be within 60 days of NTP.

STANDARD DRAWINGS

The Bidders are hereby advised that this project shall be constructed using the latest Standard Drawings with all updates effective at the time of the letting. The Standard Drawings are available for download at http://www.scdot.org/doing/sd_disclaimer.shtml. All drawings that are updated are labeled with their effective letting date in red.

The Standard Drawings are available to purchase through the SCDOT Engineering Publications Sales Center. The Engineering Publication Sales Center is in Room G-19 (basement level) of the SCDOT Headquarters Building, 955 Park Street, Columbia, South Carolina.

All references in the plans, standard specifications, supplemental specifications, supplemental technical specifications, or special provisions to drawings under the previous numbering system are hereby updated to the new drawing numbers. Refer to sheets 000-205-01 through 000-205-07 to find new drawing numbers when looking for references to older drawing numbers.

All references to Resident Construction Engineer (RCE) should be replaced with County Engineer or assigned engineering agent.

CONSTRUCTION STAKES, LINES, AND GRADES

Stakes, Lines, and Grades shall be provided by the Contractor as necessary.

DBE PARTICIPATION

The contractor should be following the State Set-Aside Law (South Carolina Code Section 12-28-2930):

- A minimum of five (5%) percent of this contract is set aside for qualified and certified Disadvantaged Business Enterprises (DBE's); AND
- A minimum of five (5%) percent of this contract is set aside for qualified and certified Woman Business Enterprises (WBE's).

Listings of certified DBE/WBE Contractors can be found on the SCDOT website at Doing Business with SCDOT Contractor-Consultant/Prequalified Contractors (<http://www.scdot.org/doing/prequalified.shtml>) or Doing Business with SCDOT, Office of Business Development and Special Programs/DBE Directory (<http://www.scdot.org/doing/dbelisting.shtml>). Contractors with DBE and WBE have shown adjacent to the company name are prequalified with SCDOT.

The prime Contractor shall provide documentation and certification of DBE and WBE contract amounts including proof of final payment. DBE's and WBE's shall be indicated on the DBE Subcontractors Form provided.

If no certified DBE or WBE Contractors are available, the contractor shall verify and document this fact. Documentation shall include but is not limited to: written records of efforts made to contact and/or negotiate prices with available DBE's or WBE's.

FAIR LABOR STANDARDS ACT OF 1938, AS AMENDED

Attention is directed to this Federal Legislation, which has been enacted into law. The contractor will be responsible for carrying out all of the provisions of this legislation, which may affect this contract.

RETAINAGE

The County shall retain ten (10) percent of the amount of each payment until completion and acceptance of all work covered by the Contract Documents. 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 County are valid reasons for non-completion, the County may make additional payments, retaining at all times an amount sufficient to cover the estimated cost of the Work still to be completed.

PAYMENT SCHEDULE

Partial Payments will be made no more than once each month as the work progresses. The monthly partial payment periods end at the end of the day on the last day of each month. Pay applications are to be submitted to the County Engineer for review and approval. Upon approval, the County Engineer submits the pay application to the County Finance Department for processing. Payment processing is performed every week.

REQUIRED MEDIA NOTIFICATION FOR CONSTRUCTION PROJECTS

Contractors are encouraged to co-operate with the news media since all projects are constructed with public funds. Because the scope of this project will disrupt normal traffic flow, the Contractor is required to notify the public promptly, of disruptive activities such as lane closures. No roadway can be closed to traffic without an approved detour plan.

The Contractor is required to utilize area media to accomplish public notification of traffic disruptions. The Contractor is required to deal directly with the news media and all reasonable efforts should be made to co-operate with the media. However, the safety, security, and construction schedule on-site should not be disrupted to accomplish this. The Contractor may coordinate these activities with and receive guidance from the Engineer.

CONTRACT PROVISION TO REQUIRE CERTIFICATION AND COMPLIANCE CONCERNING ILLEGAL ALIENS

By submission of this bid, the bidder as the prime contractor does hereby agree:

- a. to certify its compliance with the requirements of Chapter 14 of Title 8 of the S.C. Code of Laws regarding Unauthorized Aliens and Public Employment;
- b. to provide SCDOT with any documents required to establish such compliance upon request; and
- c. to register and participate and require agreement from subcontractors and subcontractors to register and participate in the federal work authorization program to verify the employment authorization of all new employees, or to employ only workers who supply the documents required pursuant to S.C. Code 8-14-20(B)(2).

CONSTRUCTION SCHEDULE

The successful Contractor shall, prior to commencement of work, submit to the County a schedule showing the order in which he proposes to carry on the Work indicating the periods during which he will perform work on each roadway. The County reserves the right to determine the priority of schedule items, but unless modified by the parties, in writing, the successful Bidder shall have sole Responsibility for following and coordinating its schedule.

CONTRACT TIME AND DETERMINATION AND EXTENSION OF CONTRACT TIME

Any extensions of these completion dates will adhere to Section 108.6 of the Standard Specifications.

FAILURE TO COMPLETE THE WORK ON TIME

Delete Section 108.9 in its entirety and substitute the following in its place:

Owner and Contractor recognize that time is of the essence and that the Owner will suffer financial loss if the work is not substantially complete in accordance with the time(s) specified herein. They also recognize the delays, expenses, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by the Owner if the work is not completed on time.

Accordingly, instead of requiring such proof, the Owner and the Contractor agree that as liquidated damages for delay (but not as a penalty) the Contractor shall pay the Owner **\$500.00 per day** for each calendar day past the contract specified interim and final completion dates.

MAINTENANCE OF TRAFFIC

Roadways must be open to traffic at all times. Should a roadway require temporary closure, approval must be given by the County Engineer, and all public safety agencies are notified in advance.

MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

The Contractor is advised that all work involving design or installation of traffic control devices, including but not limited to signs, pavement markings, elements of work zone traffic control, signals, etc., shall be following the FHWA's Manual on Uniform Traffic Control Devices (MUTCD), the latest edition. The latest edition is defined as the edition that the Traffic Engineering Division of SCDOT recognizes as having been officially adopted (Engineering Directive, Memorandum 19) at the time the project is let unless stated otherwise in the Special Provisions.

A suggested permanent construction sign schedule has been included. It shall be the responsibility of the contractor to verify the correctness and mark the location of all signs.

TRAFFIC CONTROL

The Contractor shall execute the item of Traffic Control as required by the Standard Specifications, the plans, the Standard Drawings for Road Construction, these special provisions, all supplemental specifications, the MUTCD, and the Engineer. This is an amendment to the Standard Specifications to require the following:

LUMP-SUM BID ITEMS

It is predetermined that all lump sum bid items shall be applied equally among all roads unless otherwise stated. This will apply to pay estimates as well deletion or addition of a road should one be deleted or added.

H. FORMS



BID: CTC-23

**ACADEMY ROAD WATER & WASTEWATER RELOCATIONS
ADDENDA ACKNOWLEDGMENT**

The contractor has examined and carefully studied the Request for Bid and the following Addenda, receipt of all of which is hereby acknowledged:

<i>Amendment No.</i>	<i>Issue Date</i>

The Contractor must acknowledge any issued addenda. Bids that fail to acknowledge the contractor's receipt of any addendum will result in the rejection of the offer if the addendum contained information that substantively changes the Owner's requirements or pricing.

INDEMNIFICATION

The contractor will indemnify and hold harmless the Owner, Colleton County and their agents and employees from and against all claims, damages, losses, and expenses, including attorney's fees, arising out of or resulting from the performance of the Work provided that any such claims, damages, loss, or expense are attributable to bodily injury, sickness, disease or death, injury to or destruction of tangible property, including the loss of use resulting therefrom, and is caused by any negligent or willful act or omission of the Firm, and anyone directly or indirectly employed by him/her or anyone for whose acts any of them may be liable.

In any claims against the Owner, Colleton County or any of their agents and/or employees by an employee of the Contractor, and 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 to the amount or type of damages, compensation or benefits payable by or for the Contractor under the Worker's Compensation Acts, Disability Benefit Acts, or other employee benefit acts.

The obligation of the Contractor under this paragraph shall not extend to the liability of Colleton County or its agents and/or employees arising out of the reports, surveys, Change Orders, designs or Technical Specifications.

Contractor: _____

Authorized Representative Name and Title: _____

Signature of Authorized Representative: _____

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID



BID: CTC-23
ACADEMY ROAD WATER & WASTEWATER RELOCATIONS
CERTIFICATE OF FAMILIARITY

The undersigned, having fully familiarized him/her with the information contained within this entire solicitation and applicable amendments, submits the attached response, and other applicable information to the County, which I verify to be true and correct to the best of my knowledge. I further certify that this response is made without prior understanding, agreement, or connection with any corporation, contractor or person submitting a response for the same materials, supplies or equipment, and is in all respects, fair and without collusion or fraud. I agree to abide by all conditions outlined in this solicitation and certify that I have signature authority to bind the company listed herein.

MINORITY BUSINESS: Are you a minority business?

▶ **Yes** ____ (____ *Women-owner*/ ____ *Disadvantaged*) if yes, please submit a copy of your certificate with your response.

▶ **No** ____

DEBARMENT

The Contractor is certifying that they are not currently debarred from responding to any request for bids by any agency or subdivision of the State of South Carolina or the United States Federal Government, nor are they an agent of any person or entity that is currently debarred from submitting bids on contracts by any agency or subdivision of the State of South Carolina or the United States Federal Government.

A Registered Contractor with SAM's Yes No

Cage Code. _____

DUN's No. _____

Contractor: _____

Authorized Representative Name and Title: _____

Signature of Authorized Representative: _____

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID



BID: CTC-23
ACADEMY ROAD WATER & WASTEWATER RELOCATIONS
CONTRACTOR'S CERTIFICATION

Contractor: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone Number: _____

Authorized Signature: _____

Print name: _____

Contact Person: _____

Title: _____

Email: _____
(Please print)

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

REFERENCE FORM

(Please use this form or similar copy)

Bidder shall include a list of three references for similar work with bid response. References shall include project name, brief description and location of project, completed dollar amount of project, date completed, contact person's name, phone, fax number, and email address of a similar job completed

- 1.) Name of Project Owner: _____
Brief Description Including Location _____

Completed Dollar Amount: \$ _____ Date Completed: _____
Contact Person's Name: _____
Contact Phone: (_____) _____ - _____ Contact Fax: (_____) _____ - _____
Contact E-mail: _____

- 2.) Name of Project Owner: _____
Brief Description Including Location _____

Completed Dollar Amount: \$ _____ Date Completed: _____
Contact Person's Name: _____
Contact Phone: (_____) _____ - _____ Contact Fax: (_____) _____ - _____
Contact E-mail: _____

- 3.) Name of Project Owner: _____
Brief Description Including Location _____

Completed Dollar Amount: \$ _____ Date Completed: _____
Contact Person's Name: _____
Contact Phone: (_____) _____ - _____ Contact Fax: (_____) _____ - _____
Contact E-mail: _____

- 4.) Name of Project Owner: _____
Brief Description Including Location _____

Completed Dollar Amount: \$ _____ Date Completed: _____
Contact Person's Name: _____
Contact Phone: (_____) _____ - _____ Contact Fax: (_____) _____ - _____
Contact E-mail: _____

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

SUBCONTRACTOR FORM

Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

Subcontractor Name: _____
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Description of Work to be Performed: _____

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Subcontractor Name: _____
Address: _____
Description of Work to be Performed: _____

Dollar Value of Subcontractor's Work: \$ _____ Percentage of Contract Value: _____

THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID



BID: CTC-23
ACADEMY ROAD WATER & WASTEWATER RELOCATIONS
BID FORM

Contractor _____ Date _____

Signature _____ Title _____

Email Address _____
 (Please print clearly)

	Quantity	Unit	Unit Price	Total
MOBILIZATION	1	LS	\$	\$
FINE GRADING	1	LS	\$	\$
EVACUATE & DRAIN EXISTING SEWER FORCE MAIN	1	LS	\$	\$
10" DUCTILE IRON SEWER FORCE MAIN	20	LF	\$	\$
10" 45 DEGREE MJDI BEND	4	EA	\$	\$
10" RESTRAINED ADAPTERS (HDPE TO DI)	2	EA	\$	\$
FOUNDATION STONE (18" THICK)	7	TN	\$	\$
8"X2" SERVICE SADDLE	1	EA	\$	\$
2" CORPORATION STOP	1	EA	\$	\$
2" PE WATER SERVICE TUBING (THREADED THRU EXISTING CASING)	50	LF	\$	\$
8"X1" SERVICE SADDLE	4	EA	\$	\$
1" CORPORATION STOP	4	EA	\$	\$
1" PE WATER SERVICE TUBING	50	LF	\$	\$
8"X ¾" SERVICE SADDLE	1	EA	\$	\$
¾" CORPORATION STOP	1	EA	\$	\$
¾" PE WATER SERVICE TUBING	20	LF	\$	\$
CUT & CAP EXISTING 3" WATERMAIN	1	EA	\$	\$
REMOVE EXISTING SEWER MANHOLE CONE, FRAME, & COVER	4	EA	\$	\$
NEW SEWER MANHOLE RISER SECTION	4	EA	\$	\$
REPLACE EXISTING SEWER MANHOLE CONE, FRAME, & COVER	4	EA	\$	\$

CONTRACTOR'S TOTAL BID = \$ _____

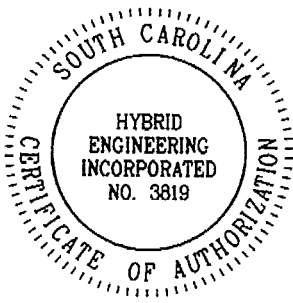
1. Sewer force main may only be removed from service between the hours of 3:30pm on a Friday and 10:30 pm on the following Sunday.
2. Temporary and permanent grassing to be done by others.

By signing this Bid Form, the CONTRACTOR acknowledges that he/she has read this document and understands the provisions, agrees to be bound by its terms and conditions, will adhere to scheduling requirements stated herein and is capable of providing all required products and/or services.

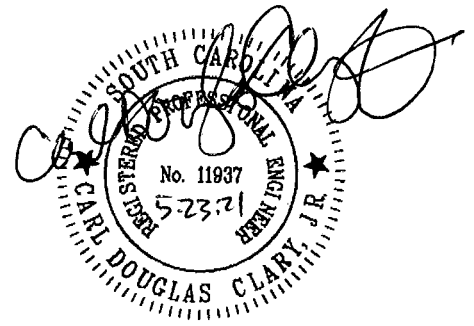
THIS PAGE MUST BE COMPLETED AND SUBMITTED AS A PART OF YOUR BID

I. SPECIAL PROVISIONS & SPECIFICATIONS – City of Walterboro

(See Next Page)



SECTION 02665
POTABLE WATER MAINS



PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Furnishing of all plant, labor, equipment, appliances and materials, and in performing all operations in connection with the construction of the water mains, including valves, hydrants, and appurtenant structures, complete and in strict accordance with the specifications and drawings.
- B. Setting of line stakes for all water mains, as required. Layout work to utilize points previously established by the Engineer as shown on the Drawings. Consult with the Engineer on any problems encountered. Water lines in relation to sewer lines must conform to "Ten State Standards," as a minimum.
- C. Materials Standards - Pipe, fittings, packing, jointing materials, valves and fire hydrants shall conform to Section C of the American Water Works Association (AWWA) Standards. All materials or products which come into contact with drinking water shall be certified as meeting the specifications of the American National Standard Institute/National Sanitation Foundation Standard 61, Drinking Water System Components - Health Effects. The certifying party shall be accredited by the American National Standards Institute. Asbestos cement pipe shall not be used in potable water systems except in the repair of existing asbestos cement lines. Metallic pipe and fittings shall be lead free in accordance with SCDHEC's **State Primary Drinking Water Regulations** Section R.61-58.4(F). Thermoplastic pipe shall not be used above grade.

1.2 RELATED DOCUMENTS AND CONDITIONS

- A. Division 1 (General Requirements).
- B. Related documents are binding in their entirety on this portion of the work and in particular to paragraphs concerning materials, workmanship, and substitutions.

1.3 SCHEDULING AND COORDINATION

- A. Reference Section 01039.
- B. Coordinate work specified in this Section with that specified in other sections, specifically earthwork, finish site work and seeding.
- C. The Owner reserves the right to designate the order in which the work will be constructed, both as specified in this Section and other Sections.

1.4 REFERENCES (LATEST EDITION)

- A. AASHTO T180 - Moisture-Density Relations of Soils Using a 10-lb (4.54 kg) Rammer and an 18-in. (457 mm) Drop.
- B. ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb (2.49 Kg) Rammer and 12 inch (304.8 mm) Drop.
- C. ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb (4.54 Kg) Rammer and 18 inch (457 mm) Drop.
- D. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- E. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.
- F. AWWA C104 - Cement-Mortar Lining for Ductile Iron Pipe and Fittings for Water.
- G. AWWA C110 - Ductile Iron and Gray Iron Fittings, 3 Inch Through 48 Inch for Water and Other Liquids.
- H. AWWA C150 - Thickness Design of Ductile Iron Pipe.
- I. AWWA C151 - Ductile Iron Pipe, Centrifugally Cast, for Water and Other Liquids.
- J. AWWA C153 - Ductile Iron Compact Fittings, 3 Inch Through 24 Inch and 54 Inch Through 64 Inch for Water Service.
- K. AWWA C502 - Dry-Barrel Fire Hydrants.
- L. AWWA C509 - Resilient-Seated Gate Valves for Water Supply Service.
- M. AWWA C550 - Protective Epoxy Interior Coatings for Valves and Hydrants.
- N. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.
- O. AWWA C605 - Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water.
- P. AWWA C606 - Grooved and Shouldered Joints
- Q. AWWA C800 -. Underground Service Line Valves and Fittings.
- R. AWWA C900 - Polyvinyl Chloride Pressure Pipe, 4 Inch Through 12 Inch, for Water Distribution.

1.5 SUBMITTALS FOR REVIEW

- A. Section 01300 - Submittals: Procedures for submittals.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves, hydrants, corporation stops, curb stops, service tubing, meters, and accessories.
- C. Certified copies of independent laboratory test results or mill test results from the pipe supplier may be considered evidence of compliance provided such tests are performed in accordance with the appropriate testing standards. In case of doubt as to the accuracy or adequacy of mill tests, the Engineer may require that the Contractor furnish test reports from an independent testing laboratory on samples of pipe material.

1.6 SUBMITTALS AT PROJECT CLOSEOUT

- A. Section 01700 - Contract Closeout: Operation and Maintenance Data, Warranties and Bonds.
- B. Record actual locations and depth of piping mains, valves, hydrants, connections to existing systems, thrust restraints, and specified invert and finish grade elevations. The locations of valves, hydrants, connections to existing system, and residential service assemblies shall be surveyed and survey points provided to the engineer to incorporate into Record Construction Drawings.
- C. Identify and describe unexpected variations in subsurface conditions or discovery of uncharted utilities.

PART 2 PRODUCTS

2.1 GENERAL

- A. Materials used in the work to conform to the current specifications of the American Society for Testing Materials (ASTM), the American Water Works Association (AWWA), the American National Standard Institute (ANSI), and Commercial Standards, (CS).
- B. All water distribution pipe material, solder and flux to be lead free (less than 0.2 percent lead in solder and flux; less than 8.0 percent lead in pipe and fittings).
- C. All chemicals and products added to the public water supply must be third party certified as meeting the specifications of ANSI/NSF Standard 60.
- D. All materials and products that contact potable water must be third party certified as meeting the specifications of ANSI/NSF Standard 61. The certifying party must be ANSI certified.
- E. All pipe, fittings, packing, jointing materials, valves, and fire hydrants shall conform to Section C of the AWWA Standards.

- F. Gaskets and Joints - Gaskets, O-rings, and other products used for jointing pipes, setting meters or valves, or other appurtenances which will expose the material to the water shall not be made of natural rubber or any other material which will support microbiological growth. Lubricants which will support microbiological growth shall not be used for slip-on joints. The use of vegetable shortening to lubricate joints is prohibited. The use of solvent-weld PVC pipe and fittings in water mains four (4) inches and larger is prohibited.
- G. All products shall be new. Items previously used for conveying water may not be reused.
- H. Asbestos cement pipe shall not be used, except where existing asbestos cement pipe is currently in use and no reasonable alternative exists.

2.2. DUCTILE IRON WATER PIPE

- A. Conform to AWWA C150 (ANSI A21.50), pressure class 350, except as otherwise noted; and AWWA C151 (ANSI A21.51).
- B. Cement Lining: In accordance with Sec. 4-14 of AWWA C104 (ANSI A21.4), as applicable; or lined with an approved epoxy resin.
- C. Exterior Coating: Coal tar pitch applied in accordance with Sec. 51-8 of AWWA C151 (ANSI A21.51). All standards, latest revision.
- D. Pipe Joints: Push-On, Push-On Restrained Joint for ductile iron pipe, conforming to AWWA Standards.
- E. Fittings: Ductile iron, manufactured in accordance with AWWA C110 Class 350; or compact ductile iron, manufactured in accordance with AWWA C153 Class 350; provide with a thin cement mortar lining; or with an approved epoxy resin lining. Fittings to be bituminous coated and designed to accommodate the type of pipe used.
- F. Pipe Markings: Pressure rating, net weight of pipe without lining, length of pipe, and name of manufacturer clearly marked on each length of pipe.
- G. Ductile Iron Pipe Manufacturers:
 - 1. U.S. Pipe.
 - 2. American Cast Iron Pipe Co.
 - 3. McWane, Inc..
 - 4. Engineer-approved equal.

2.3 POLYVINYL CHLORIDE (PVC) WATER PIPE

- A. Four Inch and Larger Diameter: Conform to AWWA C900 Standard for PVC pipe, with cast iron pipe equivalent outside diameters, class 150 (DR18).
- B. Smaller Than Four Inch Diameter: Conform to ASTM D1784, D2241, or D1785.

- C. Joints: Join by means of a rubber ring bell joint which is to be an integral part of the barrel or solvent welded at the factory, each in conformance with AWWA C900.
- D. Fittings For PVC Pipe Less Than Four Inch Diameter: PVC conforming to the material requirements for PVC pipe described herein.
- E. Fittings For PVC Pipe Four Inch Diameter And Larger: Mechanical joint conforming to paragraph 2.2(E) of this Section. Provide gasket composition suitable for exposure to potable water.
- F. Pipe to bear the National Sanitation Foundation seal of approval. Comply with the requirements of Type I, Grade I of the ASTM resin specification D-1784. Certificates of conformance with the foregoing specifications to be furnished with each lot of pipe supplied.
- G. PVC Pipe Manufacturers:
 - 1. Johns Manville.
 - 2. E.T.I.
 - 3. Diamond.
 - 4. Engineer approved equal.

2.4 POLYETHYLENE (PE) WATER SERVICE PIPE

- A. General: PE pipe in accordance with ASTM D2239, 200 psi minimum working pressure, IPS.
- B. Fittings: Fittings shall be in conformance with AWWA C-901.
- C. Dry Bore Casing shall be 1½" Diameter

2.5 GATE VALVES (TWO INCH AND LARGER SIZE)

- A. Provide Resilient Wedge C509 compliant gate valves complying with ANSI/AWWA C509 standard, UL Listed FM Approved.
 - 1. Completely encapsulate resilient iron wedge by an elastomer, without thin spots or voids.
 - 2. Provide polymer wedge guide bearing caps bearing surface between the encapsulated wedge and the interior epoxy coating, lowering operation torque and extending service life of the valve.
 - 3. The manufacturing plant to have ISO9001 certification.
 - 4. Valve stuffing box to align parallel to the direction of pipe being laid.
 - 5. Valves shall be cast, machined, assembled and tested in the USA. Provide a letter with Manufacturing Engineer PE stamp to certify this, upon request.
- C. Provide integral bronze stem manufactured from bar stock.
- D. Minimum design working pressure of not less than 250 psi.

- E. Provide Two-inch metal operating nut with arrow indicating direction of opening.
- F. Fully coat all internal ferrous metal surfaces with two part thermosetting epoxy.
- G. Design for external stem failure outside of the valve body or bonnet when excessive closing torque is applied with no failure of the pressure retaining parts per AWWA Section 3.2.
 - 1. Factory test with no leakage from either side of the disk.
 - 2. Test shell to 500 psig.
- H. Certified to NSF 61.
- G. Provide bevel gears and other necessary appurtenances for horizontal installation.
- H. Provide nominal 10 mils epoxy coating (interior/exterior).
- I. Provide (304) stainless steel bolting.
- J. Provide all wetted rubber compounds of synthetic rubber.
- K. Valve body, bonnet, stuffing box, and disc castings to be manufactured of ASTM A 126 Class B gray iron, with resilient seated design conforming to AWWA C509, interior coating conforming to AWWA C550, and non-rising stems. Provide "O" ring seals.
- L. End Conditions: Match the pipe to which they are attached.
- M. Valve Manufacturer and Type:
 - 1. Mueller.
 - 2. American Flow Control
 - 3. M & H
 - 4. American Darling
 - 5. Engineer approved equal.
- N. Furnish one two inch square wrench nut with each valve.
- O. Operation: Valves to open with **counterclockwise** turns.
- P. Provide one (1) T-handle wrench per ten (10) valves.
- Q. Provide a concrete protector ring for each valve box location.
- R. Valve Boxes:
 - 1. Two piece, telescopic type with cast iron frames and covers as shown on the drawings.
 - 2. Valve boxes to have a suitable base that does not damage the pipe, and shaft extension sections to cover and protect the valve, and to permit easy access and operation.

3. Valve boxes to be of suitable length to provide a cover of not less than 2 1/2 feet over the pipe. The minimum thickness of metal of the valve box at any point shall not be less than 3/16 inch.
4. Manufacturer and Type: Dewey Brothers Model VBX-TE-10361, Mueller No. H-1036 with covers marked "Water", or equal.

2.6 BALL VALVES (SMALLER THAN THREE INCH)

All brass, F.I.P. threaded ball valves. Provide brass nipples and transition fittings as required. Operation and accessories as specified for gate valves.

2.7 SERVICE CONNECTIONS

- A. Provide in accordance with the detail on the Drawings.
- B. Service Saddle: Provide in accordance with the detail on the Drawings. Service Saddles shall be tapped with C.C. (AWWA) Threads and subject to the following criteria:
 1. A single strap steel saddle shall be used in water mains 4 inches and smaller.
 2. Use a double strap steel saddle in water mains 6 inch and larger.
 3. Saddle Manufacturer and Type
 - a. JCM 402
 - b. Romac 202NS
 - c. Mueller DR2S
- C. Corporation Stop:
 1. Mueller H15005 1" Ground Key Corporation Valve with AWWA Tapered Thread (CC) inlet and Insta-Tite connection for IPS P.E. plastic tubing outlet.
 2. Engineer approved equal.
- D. Curb Stops:
 1. Mueller 300 Ball Meter Valve F.I.P. x F.I.P. (B-20200) of proper size for service with locking wing, conform to ADSI/ASME BI 20.1
 2. Engineer approved equal.
- E. Meter Boxes:
 1. Mueller Cast Iron "Stretch" Meter Box Model H-1461-3MN, 1" IPS inlet size.
 2. Engineer approved equal.
- F. Polyethylene Wrap: Provide encasement around all couplings and corporation stop prior to placement of flowable fill in trench.

2.8 PIPE ACCESSORIES

- A. Identification Tape: 3" wide clear brightly colored plastic covering; imprinting to read CAUTION – BURIED WATER MAIN BELOW, or other similar wording approved by the Engineer, in large capital letters.
- B. Copper Tracer Wire: Place blue 14-gauge solid copper tracer wire over all water mains and branch lines (including ductile iron). Wire shall be attached to the pipe at least once every joint utilizing tape, plastic straps, or by wrapping wire around the pipe.
- C. Restrained Joints: All associated MJDI plugs, valves, tees, branches, and bends utilized in conjunction with PVC or Ductile Iron water mains are to be braced to the development lengths specified, with mechanical joint restraint glands (Mega-Lugs), Romac ALPHA restrained joints by American Flow Control or approved equal. **Contractor shall reference Thrust Restraint Table to determine minimum restrained pipe length according to pipe size and degree of bend.**

PART 3 EXECUTION

3.1 GENERAL

- A. Perform all excavation of every description and of whatever substances encountered, to the depths indicated on the drawings or as otherwise specified. During excavation, pile material suitable for backfilling in an orderly manner a sufficient distance from the banks of the trench, or other excavation, to avoid overloading and to prevent slides or cave-ins. Remove all excavated materials not required or suitable for backfill and deposit where, and as, directed by the Engineer.
- B. Grade work area as needed to prevent surface water from flowing into trenches or other excavations. Remove any accumulated water by pumping or by other approved method. Install sheeting and shoring as necessary for the protection of the work and for the safety of personnel. Where, in the opinion of the Engineer, damage is liable to result from withdrawing of the sheeting, it is to be left in place and the Contractor will be so notified in writing.
- C. Comply with all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by Associated General Contractors of America, Inc.

3.2 EXISTING UNDERGROUND UTILITIES AND OBSTRUCTIONS

- A. The drawings indicate utilities or obstructions that are known to exist according to the best information available to the Owner and Engineer. Conflicts must be disclosed to the Engineer as soon as encountered.
- B. Call the Palmetto Utility Locating Service (1-800-922-0983) and all utilities or agencies potentially having underground utilities within the work vicinity at least three business days (72 hours) prior to construction.

- C. Horizontal Conflict: When the actual horizontal separation between an existing utility and a proposed utility piping does not permit safe installation of the proposed utility by the use of sheeting, shoring, tying back, or temporarily suspending the service, the proposed alignment of the piping may be altered provided that the new alignment remains within the available right-of-way or easement, complies with regulatory agency requirements and permits, and written approval is issued by the Engineer.
- D. Vertical Conflict: When the actual vertical separation between an existing utility and a proposed utility piping does not permit the crossing without damage to the proposed or existing utility, the proposed grade of the piping may be altered provided that the new maintains adequate cover and grade, complies with regulatory agency requirements and permits, and written approval is issued by the Engineer.
- E. Water Main and Storm Drain Separation:
 - 1. Potable water mains must, where practical, maintain a minimum 4 foot edge-to-edge separation from storm drain lines. If the 4 foot distance cannot be maintained, the separation may be reduced providing the bottom of the water main is at least 18 inches above the top of the storm drain line. Should the 18 inch vertical separation not be obtainable, the main may be installed below the storm drain line with a minimum vertical separation of 18 inches and the water main encased in concrete.
 - 2. Where water mains cross a storm drain line, space the water pipe joint to maximize horizontal separation.
 - 3. No water main shall pass through, or come into contact with, any part of a storm drain manhole or junction box.
- F. Separation of Water Mains and Sewers:
 - 1. Parallel installation - Water mains shall be laid at least ten (10) feet horizontally from any existing or proposed sewer. The distance shall be measured edge to edge.
 - 2. Crossings - Water mains crossing sewers shall be laid to provide a minimum vertical separation of eighteen (18) inches between the outside of the water main and the outside of the sewer. This shall be the case whether the water main is either above or below the sewer line. Whenever possible, the water main shall be located above the sewer line. Where a new water main crosses an existing sewer line, one full length of water pipe shall be located so both joints will be as far from the sewer line as possible. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer line to prevent damage to the water main.
 - 3. Force mains - There shall be at least a ten (10) foot horizontal separation between water mains and sanitary sewer force mains. There shall be an eighteen (18) inch vertical separation at crossing.
 - 4. Sewer manholes - No water pipe shall pass through or come in contact with any part of a sewer manhole. Water mains may come in contact with

storm sewers or catch basins if there is no other practical alternative, provided that ductile iron is used, no joints of the water main are within the storm sewer or catch basin and the joints are located as far as possible from the storm sewer or catch basin.

5. Drain-fields and Spray-fields - Potable water lines shall not be laid less than twenty-five (25) feet horizontally from any portion of a wastewater tile-field or spray-field, or shall be otherwise protected by an acceptable method.

3.3 RIGHT-OF-WAY

- A. The necessary rights-of-way and easements for water main construction will be secured by the Owner. Street widths and rights-of-way may in some cases be smaller than the Contractor would normally require when using standard construction methods.
- B. Restore rights-of-way and easements to pre-construction conditions or better.

3.4 PROTECTION OF PROPERTY

- A. Use every reasonable precaution to avoid damage to surrounding property and finished work of others. If it becomes necessary to remove fences, posts, or any valuable property, they are to be replaced in a "like or better" condition.
- B. Particular attention should be paid to storm drains and temporary sediment and erosion control measures. Any drainage feature, either temporary or permanent, which is filled is to be opened as soon as the progress of the work will allow.

3.5 PREPARATION

- A. Perform all survey work required for construction, including the establishment of base lines and any detailed surveys and bench marks adjacent to the work. A base line is defined as "the line to which the location of the work is referenced, i.e. edge of pavement, road centerline, property line, right-of-way or survey line." If required, stake permanent and temporary easements to ensure that the work does not deviate from the designated easements.
- B. Provide a level of survey detail as required for establishing the correct locations of all water mains, valves, hydrants, and accessories as shown on the Drawings.
- C. Reference Points: Install construction reference points as necessary. Preserve and protect all reference points, base lines, permanent property staking, and bench marks.

3.6 CLEARING AND GRUBBING

Clearing and grubbing is the responsibility of the Contractor, if required.

3.7 EXCAVATION

- A. All excavation is unclassified regardless of nature of the material encountered.
- B. Perform all excavations by open cut from the surface for the water main locations and depths shown on the Drawings. Exercise care to avoid cutting tree roots.
- C. Excavate trenches to provide ample room for handling pipe and making joints. Minimum trench width no less than 12 inches greater than the external diameter of the pipe.
- D. Accurately grade trench bottom to provide uniform bearing and support for each section of the pipe on undisturbed soil at every point along its entire length, except for the portions of the pipe sections where it is necessary to excavate for bell holes and for the proper sealing of pipe joints.
- E. Dig bell holes and depressions for joints after the trench bottom has been graded and, in order that the pipe rest upon the prepared bottom for as nearly its full length as practicable, only of such length and width as required for properly making the particular type of joint.
- E. Whenever the bottom of the trench is unstable and does not afford a good foundation, remove such part as may be necessary and replace with select fill material, as directed by the Engineer.
- F. Install all water mains, unless otherwise indicated, to provide a depth of cover between the top of the pipe barrel and the original ground surface or finished grade of not less than **42 inches**.

3.8 PIPE LAYING

- A. General:
 - 1. Materials used for piping as specified herein. Pipe and accessories to be new and unused materials. Rest the full length of each section of the pipe solidly upon the pipe bed of undisturbed earth, with the recesses only to accommodate pipe bells and joints. Take up and relay any pipe which has its alignment, grade or joints disturbed after laying.
 - 2. Thoroughly clean the pipe interior of all foreign matter before being lowered into the trench. Keep pipe interior clean during the laying operations by means of plugs or other approved methods. Do not lay pipe in standing water, or when the trench or weather conditions are unsuitable for the work. Keep water out of the trench until the jointing of the pipe is completed. When the work is not in progress, securely close the open pipe ends so that no trench water, earth or other foreign substance can enter the line.
 - 3. Replace any section of pipe found to be defective, either before or after laying, with new pipe at no additional expense to the Owner.
 - 4. Lay ductile iron pipe in accordance with AWWA C 600.
 - 5. Lay PVC pipe and make connections in strict accordance with AWWA C 605.

- B. Handling of Pipe and Accessories: In such a manner as to insure delivery to the site and installation in the trench in a sound, undamaged condition. Take particular care not to damage any ductile iron pipe coating, either interior or exterior.
- C. Cutting and Trimming of the Pipe: Perform in a neat and workmanlike manner without damage to the pipe or its coating. Cut pipe utilizing a mechanical cutter with sharp blade approved for the material being cut or trimmed.
- D. Placing and Laying of the Pipe:
 - 1. Examine the pipe for defects and tap with a light hammer to detect cracks while suspended in the sling before lowering into the trench. Reject all damaged, defective or unsound pipe and remove from the site of the work.
 - 2. Deflection from a straight line and grade, as may be required by vertical or horizontal curves and offsets, not to exceed the normal manufacturer's recommended allowance for the type of joint employed. If alignment requires deflections in excess of the above limitations, provide special bends or a sufficient number of shorter lengths of pipe to provide angular deflections within the limits set forth.
 - 3. Place pipe in the trench and bed as specified in Section 3.8(A).
- E. Identification Tape: Place brightly colored identification tape over all water mains and branch lines. Lay tape approximately 18 inches from finished grade. Continuous tape message to read "CAUTION – BURIED WATER MAIN BELOW" or similar wording approved by the Engineer.
- F. Copper Tracer Wire: Place 12-gauge copper tracer wire along the entire length of water main including ductile iron sections. Wire shall be attached to the pipe at least once every joint utilizing tape, plastic straps, or by wrapping wire around the pipe. Access to the tracer wire shall be provided at every mainline and hydrant valve box. The color of the wire insulation shall be blue.
- G. Should contaminated regions of soil be encountered, the Contractor shall cease pipe laying operations and notify the Engineer so that rerouting options can be evaluated.

3.9 BACKFILLING

- A. General:
 - 1. Backfill to a point 2 feet above the top of the pipe with material free of roots, stones, clods, or other unsuitable material. Thoroughly tamp material in 6 inch layers by means of a mechanical tamper, tamping iron or similar tool. Perform tamping with care so as not to disturb the pipe. Place and tamp backfill under the haunches of the pipe with special care.
 - 2. Perform the remainder of backfilling with machinery. Place excess dirt over the ditch and keep in neat order at all times until the system is completed. Fill any holes or depressions which develop. At the completion of the work, level backfill material and leave in good condition.

3. Thoroughly compact **all** backfill at street intersections and at street crossings. Place in 6 inch lifts and compact to 95% Proctor density to the top.
 4. As an alternate to item 3 above, flowable fill may be placed as a backfill material for utilities trenches at street intersections and at street crossings.
- B. The backfilling, up to the level of 2 feet above top of pipe, will not be permitted with water standing in the trench. If water is present, the trench must be dewatered and kept dewatered during the placing and tamping of the initial backfilling layer.
- 3.10 JOINTING
- A. Install mechanical joints and restrained joints in accordance with Section 3.4 of AWWA C600.
 - B. Install rubber gasket joints for PVC pressure pipe in accordance with Section 5.5 of AWWA C605.
- 3.11 SETTING FIRE HYDRANTS
- A. Set hydrants on a suitable base of concrete or crushed stone. Plumb all hydrants stems. Before installing any hydrant, take care to ensure that all foreign material is removed from the interior of the barrel. Open and close the hydrant to ensure that all parts are in proper working condition. After hydrant has been set and secured in place and reaction blocking concrete placed and cured, place clean crushed stone around base of each hydrant and about the supporting base to a height of 12" above the connecting pipe. Extend stone fill at least 12" away from the barrel in all directions. Thoroughly compact all backfill around hydrants to the surface of the ground or to grade for surfaced areas.
 - B. Set hydrants plumb in all directions and with pumper nozzle perpendicular to and facing the roadway.
 - C. Set hydrants to grade, with breaking flange no more than six inches above ground.
 - D. Provide a drainage pit for the hydrant weep hole. Encase elbow of hydrant in gravel to 6 inches (150 mm) above drain opening.
 - E. Provide joint restraint as specified in paragraph 3.13(A) of this Section.
- 3.12 SETTING VALVES AND VALVE BOXES
- A. Install valves and valve boxes as shown on the drawings or as directed by the Engineer. Clean valve interiors of all foreign matter before installation. Inspect valve in both opened and closed positions to ensure that all parts are in proper working condition.

- B. Set valves on solid bearing. Provide thrust restraint as specified in paragraph 3.13 of this Section.
- C. Center and plumb valve box over valve. Set box cover flush with finished grade or as directed by the Engineer.

3.13 THRUST RESTRAINT

- A. All sections of water main identified as "PVC" or "MJDI" on the drawings are to be constructed of standard push-on joint pipe and ductile iron fittings as specified in this Section. All associated plugs, caps, valves, tees, branches, and bends utilized in conjunction with PVC or MJDI water mains are to be braced with concrete reaction blocking. Construct reaction blocking of 3,000 p.s.i. plain concrete, with direct bearing against the undisturbed trench wall.
- B. Provide additional thrust restraint at any other points where, in the opinion of the Engineer, hydraulic thrust may develop.

3.14 CONNECTIONS TO EXISTING SYSTEM

Connection to the existing system will be made by, and at the expense of, the Contractor. The Contractor will provide and install appurtenances as required and shown on the Drawings. Coordinate connections to existing system with the Owner.

3.15 INSPECTION AND TESTING

- A. Perform pressure and leakage testing in accordance with the requirements of Section 02670 - Water Main Testing and Acceptance.
- B. Pressure and leakage testing must be completed prior to disinfection.

3.16 DISINFECTION

- A. Flush and disinfect system.
- B. Minimize the potentially adverse environmental impact of heavily chlorinated disinfecting water. If any adverse impact occurs, promptly notify the SCDHEC and institute mitigating measures accordingly.

END OF SECTION

THRUST BLOCK SIZE CALCULATION

STEP 1: ADD 50 PSI FOR PRESSURE TESTING TO THE MAXIMUM RATING OF THE PIPE. MULTIPLY THIS FIGURE BY THE APPROPRIATE VALUE SHOWN IN THE FOLLOWING TABLE.

THRUST PER PSI OF WATER PRESSURE AT VARIES FITTINGS

PIPE SIZE	DEAD END OR TEE	90° ELBOW	45° ELBOW	22 1/2° ELBOW
2	5	11	7	7
4	20	40	27	20
6	39	60	34	19
8	68	100	56	31
10	110	160	89	48
12	155	220	120	62
14	210	300	168	87
16	270	400	225	121

STEP 2: DETERMINE BEARING STRENGTH OF THE SOIL FROM THE FOLLOWING TABLE.

BEARING STRENGTH OF SOILS

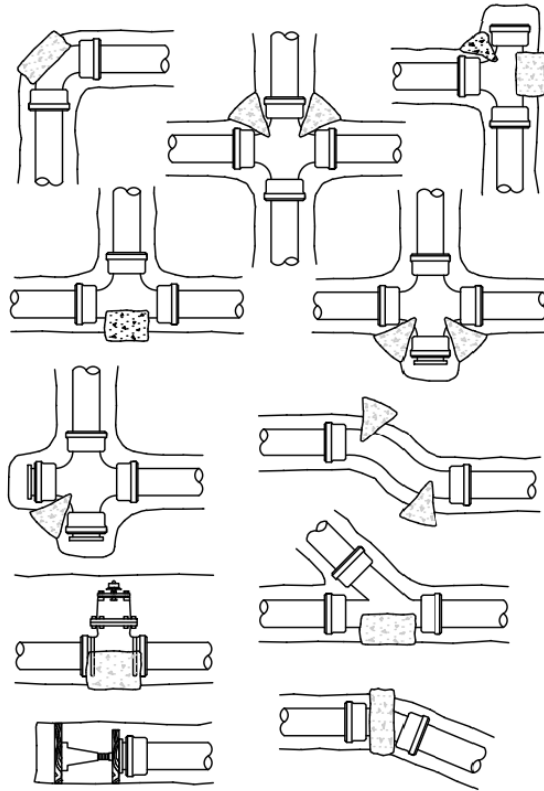
*SOILS AND SAFE BEARING LOADS	LBS/SQ. FT.
SOUND SHALE	10,000
CEMENTED GRAVEL AND SAND	4,000
DIFFICULT TO PICK	3,000
COARSE AND FINE COMPACT SAND	2,000
MEDIUM CLAY-CAN BE SPADED	1,000
SOFT CLAY	0
MUCK	0

*SEE ENGINEER FOR CLASSIFICATION OF SOILS

STEP 3: DIVIDE THE TOTAL THRUST OBTAINED IN STEP 1 BY THE BEARING STRENGTH OF THE SOIL (STEP 2) TO DETERMINE THE MINIMUM BEARING AREA (SQ. FT.) OF THRUST BLOCKING REQUIRED.

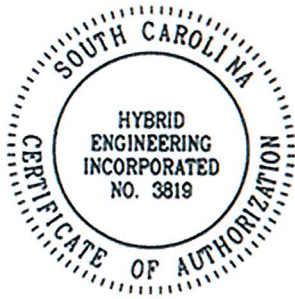
NOTE:

THRUST BLOCKING SHALL BE MADE OF AT LEAST TWO (2) CUBIC FEET OF 3000# PLAIN CONCRETE, AND SHALL BEAR DIRECTLY AGAINST THE UNDISTURBED TRENCH WALL.



THRUST BLOCK DETAILS

NOT TO SCALE



SECTION 02730
SANITARY SEWER LINES



PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Sanitary sewer lines, fittings, accessories, and bedding.

1.2 REFERENCES

- A. ANSI A21.11 - Rubber Gaskets Joints For Cast Iron and Ductile Iron Pressure Pipe and Fittings.
- B. ANSI/AWWA C151/A21.51 - Ductile Iron Pipe for Water and Other Liquids: 4" through 64".
- C. ASTM A74 - Cast Iron Soil Pipe and Fittings.
- D. ASTM A746 - Ductile Iron Gravity Sewer Pipe.
- E. ASTM C564 - Rubber Gaskets for Cast Iron Soil Pipe and Fittings.

1.3 DEFINITIONS

- A. Bedding: Fill placed under, beside and directly over pipe, prior to subsequent backfill operations.
- B. Foundation Stone: Aggregate material placed under bedding material due to overexcavation, or removal of unsuitable material.

1.4 SUBMITTALS FOR REVIEW

- A. Product Data: Provide data indicating sewer pipe, service pipe, casing pipe, pipe fittings and accessories, manholes, rings and covers.

1.5 REGULATORY REQUIREMENTS

- A. Conform to applicable regulations of the SCDHEC and guidelines as published in the Ten States Standards.

PART 2 PRODUCTS

2.1 GENERAL

- A. Unless otherwise specified, all methods of work and materials used in the work under this contract will conform to the current specifications of the American Society for Testing Materials (ASTM), the American Water Works Association (AWWA), the American National Standard Institute (ANSI), and Commercial Standards (CS).

2.2 PIPE MATERIALS

- A. Ductile Iron Sewer Force Main:

1. Conform to AWWA C150/ANSI A21.50, pressure class 150, except as otherwise noted; and AWWA C151/ANSI A21.51. All ductile iron pipe shall be manufactured in the US.
2. Cement Lining: In accordance with Sec. 4-14 of AWWA C104/ANSI A21.4, as applicable.
3. Exterior Coating: Asphaltic coating one mil thick applied in accordance with Sec. 51-8 of AWWA C151/ANSI A21.51. All standards, latest revision. All exposed piping shall be primed at manufacturer's plant with Wasser FerroClad, Tnemec 37H-77, Tnemec 140-1211, or Engineer-approved equal. All primed material to receive field coatings as specified.
4. Pipe Joints: Restrained where applicable for ductile iron pipe, conforming to AWWA C111/ANSI A21.11. Flange joints complying with AWWA C115/ANSI A21.15. Bolts and nuts complying with AWWA C111/ANSI A21.11.
5. Fittings: Ductile iron, manufactured in accordance with AWWA C110; or compact ductile iron, manufactured in accordance with AWWA C153; provide with a thin cement mortar lining. Fittings to be bituminous coated and designed to accommodate the type of pipe used. Thrust collared wall pipe fittings fabricated of Special Class 53 DI pipe shall be used for all penetrations through concrete structures.
6. Pipe Markings: Pressure rating, net weight of pipe without lining, length of pipe, and name of manufacturer clearly marked on each length of pipe.

2.3 PIPE ACCESSORIES

- A. Pipe Joint Couplings: Romac ALPHA restrained joints by American Flow Control or approved equal.
- B. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, clean-outs, reducers, traps and other configurations required.

2.4 EMBEDMENT MATERIALS

- A. General: Embedment and foundation materials listed herein include a number of processed materials, plus the soil classifications listed under the Unified Soil Classification System (USCS; Method D 2487 and Practice D 2488). These materials are grouped into five broad categories according to their suitability for this application.
- B. Aggregate Bedding and Foundation Stone: Class I - Angular, 6 to 40-mm (1/4 to 1 1/2-in.), graded stone, including a number of fill materials that have regional significance such as coral, slag, cinders, crushed stone, and crushed shells.
- C. Haunching Stone:
 - 1. Class I - Angular, 6 to 40-mm (1/4 to 1 1/2-in.), graded stone
 - 2. Class II - Coarse sands and gravels with maximum particle size of 40 mm (1 1/2 in.), including variously graded sands and gravels containing small percentage of fines, generally granular and non-cohesive, either wet or dry. Soil types GW, GP, SW, and SP are included in this class.
- D. Initial Backfill to Top of Pipe:
 - 1. Class I - Angular, 6 to 40-mm (1/4 to 1 1/2-in.), graded stone
 - 2. Class II - Coarse sands and gravels with maximum particle size of 40 mm (1 1/2 in.), including variously graded sands and gravels containing small percentage of fines, generally granular and non-cohesive, either wet or dry. Soil types GW, GP, SW, and SP are included in this class.
- E. Initial Backfill Over Pipe:
 - 1. Class II - Coarse sands and gravels with maximum particle size of 40 mm (1 1/2 in.), including variously graded sands and gravels containing small percentage of fines, generally granular and non-cohesive, either wet or dry. Soil types GW, GP, SW, and SP are included in this class.
 - 2. Class III - Fine sand and clayey gravels, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Soil types GM, GC, SM and SC are included in this class.
- F. Unsuitable Materials: These materials are not recommended for bedding, haunching, or initial backfill:
 - 1. Class IV - Silt, silty clays, and clays, including inorganic clays and silts of medium to high plasticity and liquid limits. Soil Types MH, ML, CH and CL are included in this class.
 - 2. Class V - This class includes the organic soils OL, OH, and PT as well as soils containing frozen earth, debris, rocks larger than 40 mm (1 1/2 in.) in diameter, and other foreign materials.

2.5. MANHOLE FRAME & COVER RAISING

- A. General:
 - 1. Minimum outside diameter shall be not less than 37.5 inches; allow for masonry adjustment to finished grade with standard size clay or concrete brick mortared into place.

2. Minimum access diameter: 24 inches.

PART 3 EXECUTION

3.1 PREPARATION

- A. The open ends of all pipes shall be plugged when pipe laying is not in progress.
- B. Excavate pipe trench in accordance with ASTM D2321 for work of this section. Hand trim excavation for accurate placement of pipe to elevations indicated.
- B. Remove large stones or other hard matter which could damage pipe or impede consistent backfilling or compaction.
- C. Trench width not to exceed that necessary for joining the pipe and placing and compacting the haunching and initial backfill. Compaction of the haunching and initial backfill to extent to trench wall.
- D. Stabilize poor or running soil conditions. Select and utilize a suitable method of trench wall and trench bottom stabilization. Methods to be approved by the Engineer.
- E. Utilize well points or under drain systems to control excessive ground or running water.
- F. Correct over excavation with foundation stone.

3.2 EXAMINATION

- A. Verify that trench cut and excavation base is ready to receive work and excavations, dimensions, and elevations are as indicated on the drawings.

3.3 BEDDING

- A. Hand trim excavations to required elevations.
- B. Place bedding material at trench bottom, level materials in continuous layers not exceeding 8 inches compacted depth, and compact to 95 percent.
- C. Maintain moisture content of bedding material at optimum or above to attain required compaction density.

3.4 INSTALLATION - PIPE

- A. Install pipe, fittings, and accessories in accordance with ASTM D2321 and manufacturer's instructions. Seal joints watertight.
- B. Lay pipe in an upstream direction to slope gradients noted on profile drawings, with maximum variation from true slope of 0.02%. Position bell end of pipe in upgrade direction.

- C. Install bedding at sides and over top of pipe to minimum compacted thickness of 12 inches; compacted to 95 percent. If trench width exceeds six pipe diameters, compact bedding to a point 2.5 pipe diameters from each side of the pipe.
- D. Refer to ASTM D2321 for additional trenching and backfill requirements. Do not displace or damage pipe when compacting.
- E. Install colored magnetic locator tape continuous over top of all non-metallic pipe and buried 24 inches below finish grade.
- F. Sewer Line Relationship to Water Mains: In accordance with State Regulation 61-67.
- G. Minimum Depth of Earth cover over sanitary sewer lines shall be 36" below final finished grade.

J. BID DRAWING

(See Next Page)

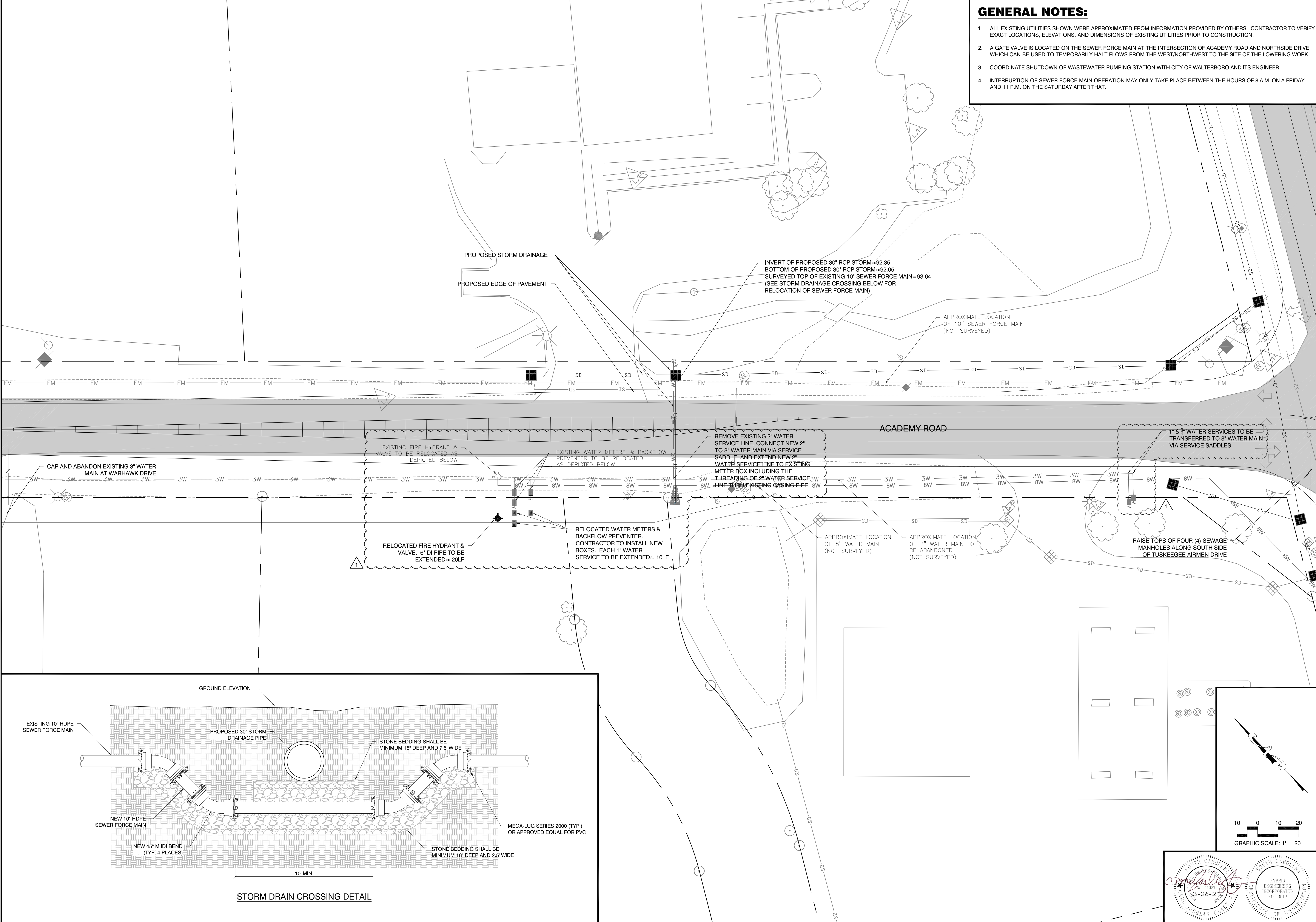
File Name: P:\P21003-15 (Academy Road Sewer Force Main Lowering-City of Walterboro)\Drawings\C21003-ACADEMY ROAD SEWER FORCE MAIN LOWERING.dwg - Plotted: Apr 01, 2021 - 5:38pm - Plotted by: Larry Watts
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- GENERAL NOTES:**
1. ALL EXISTING UTILITIES SHOWN WERE APPROXIMATED FROM INFORMATION PROVIDED BY OTHERS. CONTRACTOR TO VERIFY EXACT LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
 2. A GATE VALVE IS LOCATED ON THE SEWER FORCE MAIN AT THE INTERSECTION OF ACADEMY ROAD AND NORTHSIDE DRIVE WHICH CAN BE USED TO TEMPORARILY HALT FLOWS FROM THE WEST/NORTHWEST TO THE SITE OF THE LOWERING WORK.
 3. COORDINATE SHUTDOWN OF WASTEWATER PUMPING STATION WITH CITY OF WALTERBORO AND ITS ENGINEER.
 4. INTERRUPTION OF SEWER FORCE MAIN OPERATION MAY ONLY TAKE PLACE BETWEEN THE HOURS OF 8 A.M. ON A FRIDAY AND 11 P.M. ON THE SATURDAY AFTER THAT.

NO.	REVISION	DATE
1	ADDED WATER COMPONENT RELOCATIONS.	3/26/2021

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

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ACADEMY ROAD SEWER FORCE MAIN LOWERING
 FOR
 CITY OF WALTERBORO
 COLLETON COUNTY, SOUTH CAROLINA

PROPOSED IMPROVEMENTS PLAN

PROJECT # P21003-15
 DATE FEBRUARY 8, 2021
 SHEET

C1

