

REQUEST FOR PROPOSAL



Issue Date:
April 5, 2018

ADKINS WTF CHEMICAL FEED LINE IMPROVEMENTS (RFP 1420-18-2)

PROPOSAL SUBMITTAL DEADLINE: 12:00 PM EDT April 26, 2018

SEALED PROPOSAL TO BE RETURNED TO:

**Greenville Water
100 Oscar Street
Greenville, South Carolina 29601**



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INTRODUCTION

Greenville Water (GW), voted “Best of the Best” by the American Water Works Association in 2011 for having the best tasting water in North America, has been providing exceptional water service for close to 100 years to the 500,000 residents of the Upstate region of South Carolina, making it the largest water utility in the state.

SCOPE OF WORK OVERVIEW

Based on its current Capital Improvement Plan, GW is investing funds for the repair and partial replacement of its chemical feed lines that support the operation of the Adkins Water Treatment Facility located at 173 Gap Hill Road, Six Mile, South Carolina. The chemical feed lines are approximately 16 years old, installed in 2002. There are five feed lines that provide the following chemicals to the water treatment process: Sodium Hydroxide, Chlorine, Ammonia, Phosphate and Fluoride.

An important requirement of this project is that the entire chemical feed pipe support rack below the filter gallery must be relocated to allow the inspection access of an area behind the support rack. In addition, the Adkins Water Treatment Facility must remain in full operation during this project and capable of producing exceptional quality water at all times.

The work to be performed shall include furnishing all labor, equipment, tools, material and use of equipment necessary for the repair and partial replacement of the chemical feed lines.

A scope of work is incorporated into this solicitation as Attachment A.

Solicitation Documents

- Attachment A: Scope of Work
- Attachment B: Site Photos/Drawings
- Attachment C: Pre-Construction Conference
- Attachment D: Proposed Project Cost and Warranty Form

END OF SECTION

TIMELINE

SCHEDULE OF EVENTS

The table below contains the intended Schedule of Events for this solicitation.

Event	Time EDT	Date
1. RFP Issuance	12:00 p.m.	5-Apr-2018
2. Mandatory Pre-Proposal Meeting	10:00 a.m.	12-Apr-2018
3. Questions from Contractor's are Due	12:00 p.m.	17-Apr-2018
4. Respond to Contractors' Questions	5:00 p.m.	20-Apr-2018
5. Proposal Due Date	12:00 p.m.	26-Apr-2018
6. Notice of Intent to Award	5:00 p.m.	1-May-2018
7. Preconstruction Conference & Notice to Proceed	10:00 a.m.	10-May-2018
8. Construction Complete Date	5:00 p.m.	6-Aug-2018

The Contractor is expected to closely examine schedules, instructions, scope and the specifications. Failure to do so will be at the risk of the Contractor.

INFORMATION AND INSTRUCTIONS

- > There is no expressed or implied obligation for GW to reimburse responding Contractors for any expenses incurred in preparing a response to this request.
- > Questions and inquiries pertaining to this solicitation shall be in writing and sent via e-mail to the appropriate contact(s) listed in the section titled Administration. Questions submitted by close of business on April 13, 2018 will be accumulated. Responses will be shared with all parties who participated in the site visits. Be sure to carbon copy [cc] the Contractual Contact on all e-mails.
- > When submitting questions, include a contact name, e-mail address, telephone number and specifically reference the section of the RFP in question.
- > Note: Questions and answers will be shared with all bidders.
- > GW reserves the right to reject any or all Proposals submitted; to waive any immaterial technicalities and to accept the proposal deemed to be the best value.
- > The terms and conditions (the provisions) that shall govern any resulting agreement between GW and the lowest responsible Contractor are contained in this RFP.

END OF SECTION



ADMINISTRATION

TECHNICAL CONTACTS

Any questions concerning technical specification requirements may be directed to:

Name Allen White
Title Facilities Manager
Phone 864.241.6044
Email awhite@greenvillewater.com

CONTRACTUAL CONTACT

Any questions regarding contractual terms and conditions or proposal format must be directed to:

Name Valerie Arnold
Title Purchasing Manager
Phone 864.241.5008
Email varnold@greenvillewater.com

END OF SECTION

GUIDELINES FOR RESPONSE PREPARATION

Guidelines have been established for the purpose of clarification to assure full understanding of the requirements of the solicitation and to ensure a fair and equitable evaluation process for all Contractors.

RESPONSE SUBMITTAL

- > **Seven (7) copies of the proposal must be submitted and contain the following information:**
 - **Contractor Qualifications and Capabilities:** 4 pages maximum
A summary of the demonstrated qualifications and capabilities of the contractor and subcontractors (if applicable). Specific details of the percentage and type of work that will be performed by the contractor and subcontractors must be included along with the type of equipment and the availability of the equipment to support the duration of the project.

In addition, a summary of 2-3 recent or current projects (within the past three years) must be included that demonstrates the experience and knowledge needed to complete a project of similar scope. Include in this summary the list and copy of current contractor license(s) and classification information needed perform the required work for a drinking water facility in South Carolina.
 - **Proposed Project Approach:** 4 pages maximum
Based upon the information provided within this RFP and the Mandatory Pre-Proposal Meeting, a proposed detailed project approach must be provided that identifies the phases and sequencing of the project along with the committed staffing and equipment to complete the project.
 - **Proposed Project Schedule:** 1 page maximum
A project schedule outlining the schedule for all tasks contained in the proposed project approach and scope of work.
 - **Proposed Project Cost and Warranty:** 1 page maximum
A breakdown of costs by task, proposed staffing, expenses and total project costs. Also include all proposed warranty and guarantee information.
- > Under the South Carolina Freedom of Information Act (Section 11-35-410), “documents submitted in response or with regard to any solicitation or other request, the person submitting the documents shall comply with instructions provided in the solicitation for marking information exempt from public disclosure. Information not marked as required by the applicable instructions may be disclosed to the public.” To prevent improper disclosure, Respondents must conspicuously identify (mark and/or denote as TRADE SECRET, CONFIDENTIAL or PROTECTED) those portions of their bids that qualify for protection, otherwise all information not so noted and identified shall be subject to disclosure by the Buyer as public information.
- > Submission of a proposal indicates acceptance by the Contractor to the terms and conditions contained in this RFP, unless clearly and specifically noted in the submitted proposal and confirmed in the contract between GW and the selected Contractor.

- > Proposals must be clearly marked **RFP 1420-18-2 Adkins WTF Feed Line Improvements** and may be submitted by one (1) of the following three (3) methods:

METHOD	SHIP-TO ADDRESS
<u>Shipping carrier</u> (UPS, FedEx, etc.)	Valerie Arnold Greenville Water 100 Oscar Street Greenville, SC 29601
<u>Courier/hand-delivered</u>	Valerie Arnold Greenville Water 407 West Broad Street Greenville, SC 29601
<u>Mailed via United States Postal Service (Overnight Priority Mail Express®):</u>	Valerie Arnold Greenville Water P O Box 687 Greenville, SC 29602

LATE SUBMITTALS AND MODIFICATIONS

- > GW is not responsible for delays that may result from the Contractor's choice of submission modes. Likewise, GW is not responsible for, and will not review, any proposals that are received after the date and time stated above.
- > Contractors are responsible for clarifying any ambiguity, conflict, discrepancy, error or omission in their responses; otherwise, it will be considered waived. In the event of any of these occurrences, please notify the Purchasing Manager immediately of such error in writing to request modification or clarification of the proposal.
- > Late submittals will be returned and not considered.
- > GW reserves the right, where it may serve GW's best interest, to request additional information or clarifications from responding Firms or to allow corrections of error or omissions.

END OF SECTION



DETAILED RESPONSE REQUIREMENTS

The below requirements are mandatory. Contractors must accept and commit to all of the applicable requirements described within the specifications to be considered for award.

SPECIFICATIONS

The specifications for the repair and partial replacement of the Adkins WTF Chemical Feed Lines have been provided in Attachment B.

Photos of the existing chemical feed lines are provided in Attachment C.

INDEMNIFICATION AND INSURANCE

The Contractor agrees to hold harmless and to indemnify GW from all claims, damages, accidents and liabilities which may arise out of or during work under this contract by anyone directly or indirectly employed on the work. The Contractor shall carry liability and workmen's compensation insurance as prescribed herein and all policies shall be with companies satisfactory to GW. Coverage specified herein constitutes the minimum requirement and said requirement shall in no way lessen or limit the liability of the Contractor. The Contractor shall procure and maintain at his own expense any additional kinds and amounts of insurance that, in his judgment, may be necessary for proper protection in the prosecution of the work. If a part of the work is sublet, the Contractor shall require each subcontractor to carry insurance of the same kinds and in like amounts as carried by the prime Contractor.

A Certificate of Insurance shall be submitted and approved before starting any work. The Certificate shall state that a minimum 15 day written notice will be given to GW before the policy is canceled or changed and shall demonstrate the following coverage:

- a) Comprehensive General Liability with minimum limit of \$1,000,000 combined single limit for bodily injury and property damage, per occurrence. Minimum \$2,000,000 aggregate.
- b) Comprehensive Automobile Liability with minimum limit of \$1,000,000 combined single limit.
- c) Workers Compensation with minimum of statutory requirements.
- d) Employers' Liability with minimum of \$500,000 each employee, \$500,000 each accident and \$500,000 policy limit.
- e) In the event, any insurance policy expires before the end of the term of the contract, the Contractor must provide within ten (10) business days of expiration, evidence of new or renewal policies.

BONDS

The successful Contractor will be required to furnish a Performance Bond and a Payment Bond executed by a Surety Company duly authorized to do business in the state of South Carolina and acceptable to Owner's attorney each in an amount not less than 100% of the contract price as security for the payment of all persons performing labor and furnishing materials in connection with this contract. These bonds must be executed in the fashion provided as part of the Contract Documents. The Surety Company shall be rated "A" by the U. S. Treasury Department.

PAYMENT TERMS

Payment Terms shall be Net 15. A *Pay Request* may be submitted every 30 days representing the Contractor's completion of the work. A ten percent (10%) retainage will be deducted from each *Pay Request* until project completion and final acceptance of all performed work.



EVALUATION OF PROPOSALS

GW reserves the right to reject any or all responses; to waive any informality or irregularity not affected by law; to evaluate, in its absolute discretion, the responses submitted; to award the contract according to the proposal which best serves the interests of GW; or to not award the contract if GW determines that it is not in its best interest to do so.

AWARD BASIS

The Contract for RPF 1420-18-2 shall be awarded to the responsible Contractor submitting a responsive Proposal with the most favorable score. Below are the categories that will be used to evaluate the proposals with the weighted percentages that apply for each category

- | | |
|---|------|
| • Qualifications and Capabilities of the Contractor | 20 % |
| • Proposed Project Approach | 40 % |
| • Proposed Project Schedule | 10 % |
| • Proposed Project Cost and Warranty | 30 % |

CONTRACTOR SELECTION

Before award, GW reserves the right to seek clarifications or request additional information deemed necessary to properly evaluate submissions from all responding Contractors deemed eligible for contract award. Failure to provide requested information may result in rejection of the proposal.

NOTIFICATION

An announcement will be sent in writing to all Contractors. Results will not be given over the phone or in public.

END OF SECTION

APPENDIX

Greenville Water's Agreement Between Owner and Contractor

Contractors submitting a proposal for RFP 1420-18-2, Adkins WTF Chemical Feed Improvements, must review Greenville Water's Agreement Between Owner and Contractor in the Appendix and identify any questions or concerns about the Agreement in writing on the Form found in Attachment D.

AGREEMENT BETWEEN OWNER AND CONTRACTOR

This Contract is by and between _____ and
the Commissioners of Public Works of the City of Greenville (aka Greenville Water and GW)

Owner and Contractor hereby agree as follows:

ARTICLE 1 - THE WORK

1.01 Work

- A. Work includes all labor, materials, equipment, services, and documentation necessary to construct the Project defined herein. The Work may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
- B. The Contractor shall complete all Work as specified or indicated in the Contract Documents. The Project is generally described as follows:
 - 1. To repair and/or replacement miscellaneous chemical and sample piping at the Adkins Water Treatment Facility.
 - 2. The Site of the Work includes property, easements, and designated work areas described in greater detail in the Contract Documents but generally located at 173 Gap Hill Road in Six Mile, South Carolina.

ARTICLE 2 - CONTRACT DOCUMENTS

2.01 Intent of Contract Documents

- A. It is the intent of the Contract Documents to describe a functionally complete project. The Contract Documents do not indicate or describe all of the Work required to complete the Project. Additional details required for the correct installation of selected products are to be provided by the Contractor and coordinated with the Owner and Engineer. This Contract supersedes prior negotiations, representations, and agreements, whether written or oral. The Contract Documents are complementary; what is required by one part of the Contract Documents is as binding as if required by other parts of the Contract Documents.
- B. During the performance of the Work and until final payment, Contractor and Owner shall submit all matters in question concerning the requirements of the Contract Documents, or relating to the acceptability of the Work under the Contract Documents to the Engineer. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- C. Engineer will render a written clarification, interpretation, or decision on the issue submitted, or initiate a modification to the Contract Documents.
- D. Contractor, and its subcontractors and suppliers, shall not have or acquire any title to or ownership rights to any of the Drawings, Specifications, or other documents (including copies or electronic media editions) prepared by Engineer or its consultants.

Note – This agreement is based on a modified EJCDC C-522 © (2016) and is subject to copyright protections held by the National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.

2.02 Contract Documents Defined

- A. The Contract Documents consist of the following documents:
1. This Contract.
 2. Performance bond.
 3. Payment bond.
 4. Exhibits to this Contract (enumerated as follows):
 - a. Exhibit 1 – RFP 1420-18-2 : Adkins WTF Chemical Feed Line Improvements
 - b. Exhibit 2 – Proposal Response to RFP 1420-18-2 from _____
 5. The following which may be delivered or issued on or after the Effective Date of the Contract:
 - a. Work Change Directives (EJCDC C-940).
 - b. Change Orders (EJCDC C-941).
 - c. Field Orders.

ARTICLE 3 - ENGINEER

3.01 Engineer

- A. The Engineer for this Project is Black & Veatch.

ARTICLE 4 - CONTRACT TIMES

4.01 Contract Times

- A. The Work will be substantially completed within ____ days after the Effective Date of the Contract and completed and ready for final payment within ____ days after the Effective Date of the Contract.

4.02 Liquidated Damages

- A. Contractor and Owner recognize that time is of the essence in the performance of the Contract, and that Owner will incur damages if Contractor does not complete the Work according to the requirements of Paragraph 4.01. Because such damages for delay would be difficult and costly to determine, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay Owner \$ 500 for each day that expires after the Contract Time for substantial completion.

4.03 Delays in Contractor's Progress

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times as its sole remedy. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor or their subcontractors or suppliers.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times as its sole remedy.
- D. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor or Contractor's subcontractors or suppliers.

4.04 Progress Schedules

- A. Contractor shall develop a progress schedule and submit to the Engineer for review and comment before starting Work on the Site. The Contractor shall modify the schedule in accordance with the comments provided by the Engineer.
- B. The Contractor shall update and submit the progress schedule to the Engineer each month. The Owner may withhold payment if the Contractor fails to submit the schedule.

ARTICLE 5 - CONTRACT PRICE

5.01 Payment

- A. Owner shall pay Contractor in accordance with the Contract Documents at the following unit prices for each unit of Work completed:

Item No.	Description	Unit	Estimated Quantity	Unit Price	Extended Price
Total of all extended prices for Estimated Quantities of Work					\$

Payment will be made in an amount equal to the total of all extended prices for actual Work completed. The extended price is determined by multiplying the unit price times the actual quantity of that Work item completed. Actual quantities installed will be determined by the Engineer.

ARTICLE 6 - BONDS AND INSURANCE

6.01 Bonds

- A. Before starting Work, Contractor shall furnish a performance bond and a payment bond from surety companies that are duly licensed or authorized to issue bonds in the required amounts in the jurisdiction in which the Project is located. Each bond shall be in an amount equal to

the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until the completion of the correction period specified in Paragraph 7.12 but, in any case, not less than one year after the date when final payment becomes due.

6.02 Insurance

- A. Before starting Work, Contractor shall furnish evidence of insurance from companies that are duly licensed or authorized in the jurisdiction in which the Project is located with a minimum AM Best rating of A-VII or better. Contractor shall provide insurance in accordance with the requirements outlined in the Indemnification and Insurance Section of RFP 1420-18-2 Adkins WTF Chemical Feed Line Improvements.
- B. All insurance policies required to be purchased and maintained will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the insured and additional insured.
- C. Automobile liability insurance provided by Contractor shall provide coverage against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- D. Contractor's commercial general liability policy shall be written on a 1996 or later ISO commercial general liability occurrence form and include the following coverages and endorsements:
 - 1. Products and completed operations coverage maintained for three years after final payment;
 - 2. Blanket contractual liability coverage to the extent permitted by law;
 - 3. Broad form property damage coverage; and
 - 4. Severability of interest; underground, explosion, and collapse coverage; personal injury coverage.
- E. The Contractor's commercial general liability and automobile liability, umbrella or excess, and pollution liability policies shall include and list Owner and Engineer and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each as additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis.
 - 1. Additional insured endorsements will include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
 - 2. Contractor shall provide ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent for design professional additional insureds.

- F. Umbrella or excess liability insurance shall be written over the underlying employer's liability, commercial general liability, and automobile liability insurance. Subject to industry-standard exclusions, the coverage afforded shall be procured on a "follow the form" basis as to each of the underlying policies. Contractor may demonstrate to Owner that Contractor has met the combined limits of insurance (underlying policy plus applicable umbrella) specified for employer's liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policies and an umbrella or excess liability policy.
- G. The Contractor shall provide property insurance covering physical loss or damage during construction to structures, materials, fixtures, and equipment, including those materials, fixtures, or equipment in storage or transit.
- H. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 15.

ARTICLE 7 - CONTRACTOR'S RESPONSIBILITIES

7.01 Supervision and Superintendence

- A. Contractor shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, safety, and procedures of construction.
- B. Contractor shall assign a competent resident superintendent who is to be present at all times during the execution of the Work. This resident superintendent shall not be replaced without written notice to and approval by the Owner and Engineer except under extraordinary circumstances.
- C. Contractor shall at all times maintain good discipline and order at the Site.
- D. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday.

7.02 Other Work at the Site

- A. In addition to and apart from the Work of the Contractor, other work may occur at or adjacent to the Site. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.

7.03 Services, Materials, and Equipment

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

- B. All materials and equipment incorporated into the Work shall be new, of good quality and shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable supplier, except as otherwise may be provided in the Contract Documents.

7.04 Subcontractors and Suppliers

- A. Contractor may retain subcontractors and suppliers for the performance of parts of the Work. Such subcontractors and suppliers must be acceptable to Owner.

7.05 Quality Management

- A. Contractor is fully responsible for the managing quality to ensure Work is completed in accordance with the Contract Documents.

7.06 Licenses, Fees and Permits

- A. Contractor shall pay all license fees and royalties and assume all costs incident to performing the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others.
- B. Contractor shall obtain and pay for all construction permits and licenses unless otherwise provided in the Contract Documents.

7.07 Laws and Regulations; Taxes

- A. Contractor shall give all notices required by and shall comply with all local, state, and federal Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages if Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations.
- C. Contractor shall pay all applicable sales, consumer, use, and other similar taxes Contractor is required to pay in accordance with Laws and Regulations.

7.08 Record Documents

- A. Contractor shall maintain one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved shop drawings in a safe place at the Site. Contractor shall annotate them to show changes made during construction. Contractor shall deliver these record documents to Engineer upon completion of the Work.

7.09 Safety and Protection

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work.
- B. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. All persons on the Site or who may be affected by the Work;

2. All the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 3. Other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and underground facilities not designated for removal, relocation, or replacement in the course of construction.
- C. All damage, injury, or loss to any property caused, directly or indirectly, in whole or in part, by Contractor, or anyone for whose acts the Contractor may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Contract Documents or to the acts or omissions of Owner or Engineer and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor).
 - D. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.
 - E. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor shall act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.10 Shop Drawings, Samples, and Other Submittals

- A. Contractor shall review and coordinate the shop drawing and samples with the requirements of the Work and the Contract Documents and shall verify all related field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information.
- B. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
- C. With each submittal, Contractor shall give Engineer specific written notice, in a communication separate from the submittal, of any variations that the shop drawing or sample may have from the requirements of the Contract Documents.
- D. Engineer will provide timely review of shop drawings and samples.
- E. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs.
- F. Engineer's review and approval of a separate item does not indicate approval of the assembly in which the item functions.
- G. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of shop drawings and submit, as required, new samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
- H. Shop drawings are not Contract Documents.

7.11 Warranties and Guarantees

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.

7.12 Correction Period

- A. If within one year after the date of substantial completion, any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly and without cost to Owner, correct such defective Work.

7.13 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any subcontractor, any supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts they may be liable.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 Owner's Responsibilities

- A. Except as otherwise provided in the Contract Documents, Owner shall issue all communications to Contractor through Engineer.
- B. Owner shall make payments to Contractor as provided in this Contract.
- C. Owner shall provide Site and easements required to construct the Project.
- D. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, unless stated elsewhere in the Contract Documents, Owner shall have sole authority and responsibility for such coordination.
- E. The Owner shall be responsible for performing inspections and tests required by applicable codes.
- F. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

- G. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- H. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 Engineer's Status

- A. Engineer will be Owner's representative during construction. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in this Contract.
- B. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any subcontractor, any supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- C. Engineer will make visits to the Site at intervals appropriate to the various stages of construction. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work.
- D. Engineer has the authority to reject Work if Contractor fails to perform Work in accordance with the Contract Documents.
- E. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work.
- F. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

ARTICLE 10 - CHANGES IN THE WORK

10.01 Authority to Change the Work

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work.

10.02 Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 - 1. Changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 - 2. Changes in the Work which are: (a) ordered by Owner or (b) agreed to by the parties or (c) resulting from the Engineer's decision, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and

3. Changes in the Contract Price or Contract Times or other changes which embody the substance of any final binding results under Article 12.
- B. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 11 - DIFFERING SUBSURFACE OR PHYSICAL CONDITIONS

11.01 Differing Conditions Process

- A. If Contractor believes that any subsurface or physical condition including but not limited to utilities or other underground facilities that are uncovered or revealed at the Site either differs materially from that shown or indicated in the Contract Documents or is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Contract Documents then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.
- B. After receipt of written notice, Engineer will promptly:
1. Review the subsurface or physical condition in question;
 2. Determine necessity for Owner obtaining additional exploration or tests with respect to the condition;
 3. Determine whether the condition falls within the differing site condition as stated herein;
 4. Obtain any pertinent cost or schedule information from Contractor;
 5. Prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and
 6. Advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

ARTICLE 12 - CLAIMS AND DISPUTE RESOLUTION

12.01 Claims Process

- A. The party submitting a claim shall deliver it directly to the other party to the Contract and the Engineer promptly (but in no event later than 10 days) after the start of the event giving rise thereto.
- B. The party receiving a claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the claim through the exchange of information and direct negotiations. All actions taken on a claim shall be stated in writing and submitted to the other party.
- C. If efforts to resolve a claim are not successful, the party receiving the claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the claim within 45 days, the claim is deemed denied.
- D. If the dispute is not resolved to the satisfaction of the parties, Owner or Contractor shall give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction unless the Owner and Contractor both agree to an alternative dispute resolution process.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION OF DEFECTIVE WORK

13.01 Tests and Inspections

- A. Owner and Engineer will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access.
- B. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- C. If any Work that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense.

13.02 Defective Work

- A. Contractor shall ensure that the Work is not defective.
- B. Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. The Contractor shall promptly correct all such defective Work.
- E. When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. If the Work is defective or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work

will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated.

ARTICLE 14 - PAYMENTS TO CONTRACTOR

14.01 Progress Payments

- A. The Contractor shall prepare a schedule of values that will serve as the basis for progress payments. The schedule of values will be in a form of application for payment acceptable to Engineer. The unit price breakdown submitted with the bid will be used for unit price work. Break lump sum items into units that will allow for measurement of Work in progress.

14.02 Applications for Payments:

- A. Contractor shall submit an application for payment in a form acceptable to the Engineer, no more frequently than monthly, to Engineer. Applications for payment will be prepared and signed by Contractor. Contractor shall provide supporting documentation required by the Contract Documents. Payment will be paid for Work completed as of the date of the application for payment.
- B. Beginning with the second application for payment, each application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior applications for payment. Owner may, in its discretion, require interim releases from Contractor and its subcontractors and suppliers.

14.03 Retainage

- A. The Owner shall retain ten percent (10 %) of each progress payment until the Work is substantially complete.

14.04 Review of Applications

- A. Within 10 days after receipt of each application for payment, the Engineer will either indicate in writing a recommendation for payment and present the application for payment to Owner or return the application for payment to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. The Contractor will make the necessary corrections and resubmit the application for payment.
- B. Engineer will recommend reductions in payment (set-offs) which, in the opinion of the Engineer, are necessary to protect Owner from loss because the Work is defective and requires correction or replacement.
- C. The Owner is entitled to impose set-offs against payment based on any claims that have been made against Owner on account of Contractor's conduct in the performance of the Work, incurred costs, losses, or damages on account of Contractor's conduct in the performance of the Work, or liquidated damages that have accrued as a result of Contractor's failure to complete the Work.

14.05 Contractor's Warranty of Title

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

14.06 Substantial Completion

- A. The Contractor shall notify Owner and Engineer in writing that the Work is substantially complete and request the Engineer issue a certificate of substantial completion when Contractor considers the Work ready for its intended use. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Engineer will make an inspection of the Work with the Owner and Contractor to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor and Owner in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete or upon resolution of all reasons for non-issuance of a certificate identified in 14.06.B, Engineer will deliver to Owner a certificate of substantial completion which shall fix the date of substantial completion and include a punch list of items to be completed or corrected before final payment.

14.07 Final Inspection

- A. Upon written notice from Contractor that the entire Work is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.08 Final Payment

- A. Contractor may make application for final payment after Contractor has satisfactorily completed all Work defined in the Contract, including providing all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents and other documents.
- B. The final application for payment shall be accompanied (except as previously delivered) by:
 - 1. All documentation called for in the Contract Documents;
 - 2. Consent of the surety to final payment;
 - 3. Satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any liens or other title defects, or will so pass upon final payment;
 - 4. A list of all disputes that Contractor believes are unsettled; and
 - 5. Complete and legally effective releases or waivers (satisfactory to Owner) of all lien rights arising out of the Work, and of liens filed in connection with the Work.
- C. The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

14.09 Waiver of Claims

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor.

- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 Owner May Suspend Work

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 60 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension.

15.02 Owner May Terminate for Cause

- A. Contractor's failure to perform the Work in accordance with the Contract Documents or other failure to comply with a material term of the Contract Documents will constitute a default by Contractor and justify termination for cause.
- B. If Contractor defaults in its obligations, then after giving Contractor and any surety ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
 - 1. Declare Contractor to be in default, and give Contractor and any surety notice that the Contract is terminated; and
 - 2. Enforce the rights available to Owner under any applicable performance bond.
- C. Owner may not proceed with termination of the Contract under Paragraph 15.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- D. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- E. In the case of a termination for cause, if the cost to complete the Work, including related claims, costs, losses, and damages, exceeds the unpaid contract balance, Contractor shall pay the difference to Owner.
- F. A termination for cause is later found to have been improper or unsupported shall be treated as a termination for convenience.

15.03 Owner May Terminate for Convenience

- A. Upon seven days written notice to Contractor, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for, without duplication of any items:
 - 1. Completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. Expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 3. Other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

15.04 Contractor May Stop Work or Terminate

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner, and provided Owner does not remedy such suspension or failure within that time, either stop the Work until payment is received, or terminate the Contract and recover payment from the Owner.

ARTICLE 16 - CONTRACTOR'S REPRESENTATIONS

16.01 Contractor Representations

- A. Contractor makes the following representations when entering into this Contract:
1. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
 4. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on:
 - a. The cost, progress, and performance of the Work;
 - b. The means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and
 - c. Contractor's safety precautions and programs.
 5. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

6. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
7. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
8. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
9. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that, without exception, all prices in the Contract are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 17 - MISCELLANEOUS

17.01 Cumulative Remedies

- A. The duties and obligations imposed by this Contract and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.02 Limitation of Damages

- A. Neither Owner, Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.
- B. The parties mutually waive their respective claims for consequential damages arising from or relating to this Contract.

17.03 No Waiver

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

17.04 Survival of Obligations

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 Contractor's Certifications

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract.

17.06 Controlling Law

- A. This Contract is to be governed by the law of the state of South Carolina.

IN WITNESS WHEREOF, Owner and Contractor have signed this Contract.

This Contract will be effective on _____ (which is the Effective Date of the Contract).

OWNER:

CONTRACTOR:

The Commissioners of Public Works of the City
of Greenville (also known as Greenville Water
and GW)

By: _____

By: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

Greenville Water – C/O Valerie Arnold

100 Oscar Street

Greenville, SC 29601

License No.: _____

(where applicable)

ADKINS WATER TREATMENT PLANT CHEMICAL PIPE REPAIR TECHNICAL MEMORANDUM

PREPARED FOR

Greenville Water

2 APRIL 2018

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- Figure 2. Filter Complex Plans
- Figure 3. Operations Building Sections

1.0 General Description and Location

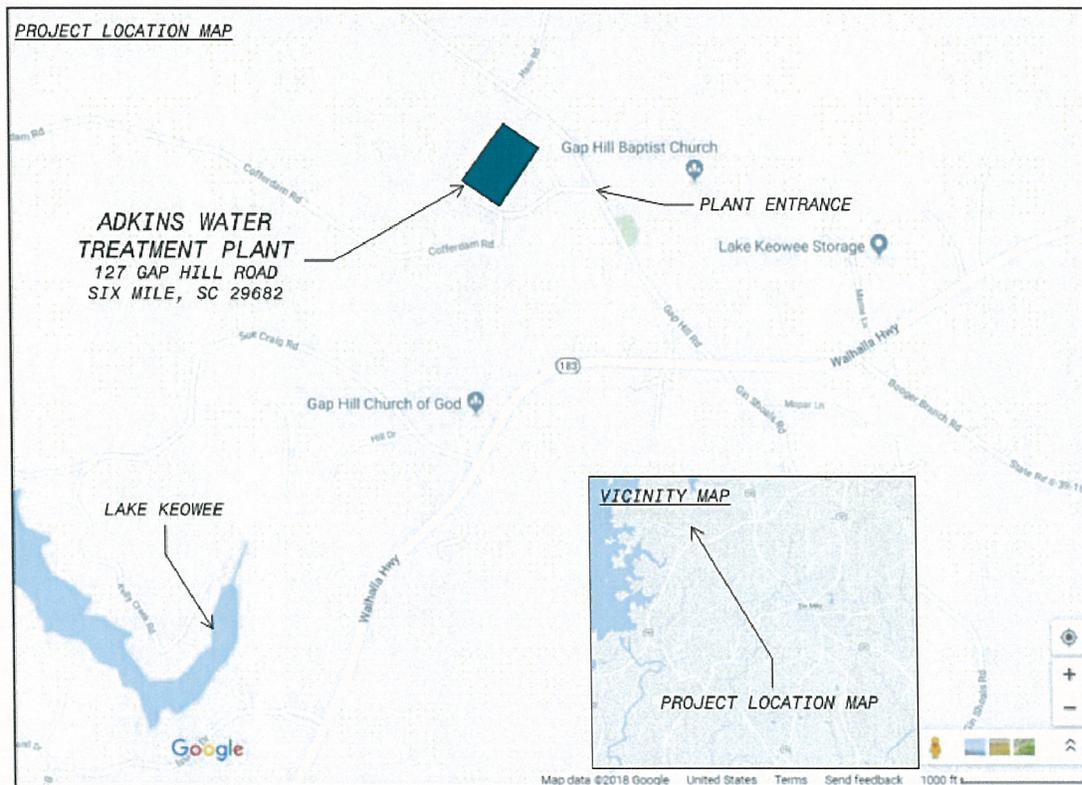
1.1 GENERAL DESCRIPTION OF WORK

This memorandum includes a description and general requirements needed to install miscellaneous chemical and sample piping repairs at the Adkins Water Treatment Plant (WTP) located in Six Mile, SC. Major components of the work include the following items:

- Demolition of an existing 2" PVC Polymer feed line and 2" Steel Post Caustic (50% sodium hydroxide) feed line.
- Installation of two (primary and standby) 2" CPVC Post Caustic feed lines.
- Replacement of two damaged sections approximately 5-feet each of ½" PVC Fluoride (23% hydrofluorosilicic acid) feed line.
- Removal and replacement of a chemical and sample piping chase located below a 42" washwater header.

More specific details are included in the attached Figures 1, 2, and 3; and as outlined herein.

1.2 PROJECT VICINITY AND LOCATION MAP



2.0 Maintenance of Plant Operations

The Adkins WTP is an active treatment facility and must be kept in continuous operation throughout the course of this work. No interruption will be permitted which adversely affects the degree of service provided. Provided permission is obtained from WTP in advance, portions of the existing facilities may be taken out of service for short periods corresponding with periods of minimum service demands.

2.1 CHEMICAL HANDLING

Existing facilities will require work in and around an active chemical storage and feed systems. Plans for emergency, evacuation, notification, and waste disposal procedures must be made in advance of performing work at the WTP. All on-site personnel working on the project shall be properly trained in all safety procedures and in the use of safety equipment for working in a chemical system environment.

Chemicals in this work include sodium hydroxide (50%), hydrofluorosilic acid (23%), aluminum sulfate (48%), polymer solution, phosphate, and chlorine solution. Contractor is responsible for obtaining the latest MSDS sheets from the Owner before construction begins. Contractor shall prepare, and have available to the Owner, a Plan of Action related to chemical handling, including emergency procedures, spill containment, cleanup of chemicals, proper personal protective equipment, and training of employees. The Contractor is responsible for proper cleanup and disposal of any chemical spills that occur as a result of the work during the project.

Contractor shall properly dispose of and provide proof of proper disposal of any and all chemical removed from pipe lines or tanks, containment soils, materials, or any chemicals removed due to accidental spills. Proof of chemical disposal will be a condition for payment.

2.2 GENERAL SEQUENCE OF WORK

The following sequence is not intended to capture all the necessary steps to perform the work but only to provide a suggested sequence of relevant items to minimize interruptions to plant operations.

2.2.1 Relocate Chemical & Sample Piping from Below 42" Washwater Header

- 1) Replacement piping to be installed in new location while leaving existing piping in service.
- 2) Once new piping is installed, coordinate a temporary shutdown with WTP for each piping service to allow connection to existing.
- 3) Remove existing pipe support tray and associated piping located below 42" Washwater Header once replacement piping is placed into service.

2.2.2 Caustic & Fluoride Line Repairs

- 1) Remove existing 2" PVC Polymer pipe that is currently out of service from the Operations Building Basement to the Filter Pipe Gallery Area.
- 2) Install new 2" CPVC Post Caustic pipe in location made available from removed Polymer line.

- 3) Once new 2" CPVC Post Caustic pipe is placed into service, remove existing 2" Steel Post Caustic pipe.
- 4) Install new Standby 2" CPVC Post Caustic pipe in location made available from removed 2" Steel Post Caustic piping.

3.0 General Requirements

3.1 MAJOR MATERIALS

Table 3.1 provides the material requirements of the major items included in the project.

Table 3.1. General Material Requirements

1.0 PIPING AND VALVES		
1.1	PVC Piping Hydrofluosilicic Acid (Fluoride) Chlorine Solution Polymer Alum Sample	Schedule 80 PVC; ASTM D 1785; Cell Classification 12454 with ASTM D2467 Fittings, all bearing NSF/ANSI 61 seal.
1.2	PVC Ball Valves Hydrofluosilicic Acid (Fluoride) Chlorine Solution Polymer Alum Sample	Schedule 80 PVC in-line, full port ball socket ends with true-union Teflon seat and <u>VITON</u> seals NSF-61 Certified Asahi/America Type 21 or approved equal
1.3	CPVC Piping Sodium Hydroxide (Caustic)	Schedule 80 CPVC; ASTM F441, Cell Classification 23447 with ASTM F439 Fittings, all bearing NSF/ANSI 61 seal.
1.4	CPVC Ball Valves Sodium Hydroxide (Caustic)	Schedule 80 CPVC in-line, full port ball socket ends with true-union Avoid threaded connections for Caustic service Teflon seat and <u>EPDM</u> seals NSF-61 Certified Asahi/America Type 21 or approved equal
1.5	Solvent for PVC and CPVC Piping & Valves	IPS Corporation Weld-On 724 with Weld-On P-70 Primer
1.6	Pipe Supports	Type 316 stainless steel Unistrut with stainless steel threaded rod. Type 316 stainless steel pipe strap clamps with Unistrut 'Cush-A-Nator' self-alignment rubber liners.
1.7	Pipe Labels for Plastic Piping	Snap-on plastic sleeves type. Bradysnap-On B-915, Seton "Setmark", or equal, with flow directional arrow. Label color, text color, and text to be selected by WTP. Install a minimum of every 50', at changes in direction, and at wall/floor penetrations.

3.2 PIPELINE PRESSURE & LEAKAGE TESTING

All new piping shall be pressure tested by the installer in the presence, and to the satisfaction of Owner. Each piping system shall be tested for at least 2 hours with no loss of pressure. Piping shall be tested at the indicated pressures:

<u>Service</u>	<u>Test Pressure</u>	<u>Test Medium</u>
Water supply	1-1/2 times working pressure but not less than 120 psi	Water
Other piping	1-1/2 times working pressure but not less than 50 psi	Water

3.3 GENERAL PROJECT REQUIREMENTS

3.3.1 Quality Control

- 1) All work shall be in compliance with the latest version of the International Building Code.
- 2) All work shall be in accordance with OSHA Safety and Health Standards.
- 3) The onsite project superintendent must speak fluid English.
- 4) The Project Manager for the Contractor must be onsite for all inspections with the Engineer. The Project Manager must be directly employed by the Contractor; subcontractors will not be acceptable.

3.3.2 Containment of Debris and Clean Up

All debris and waste materials generated from the project shall be collected and properly disposed of in approved containers at the end of each day. Waste materials and stored equipment and/or materials shall not obstruct the work of the staff and shall not interfere with the production of drinking water.

Upon completion of the work, the Contractor will remove or dispose of all rubbish and other unsightly material caused by their operation, and will leave the premises in as good a condition as it was found.

3.3.3 Guarantee

The Contractor must guarantee for one year the work performed and repairs furnished under this Project, to the extent that the Contractor will repair any defects due to faulty workmanship and/or material which may appear during that period.

The warranty will commence after 90 days of successful completion of the project and placing the

chemical feed lines into service.

At the end of the year, the Engineer will make a list of any defects and/or deficiencies. The Contractor will be responsible for correcting any defects and/or deficiencies within 30 days of written notice from the Engineer.

ATTACHMENT B: PHOTOS AND DRAWINGS

SITE PHOTOS / DRAWINGS

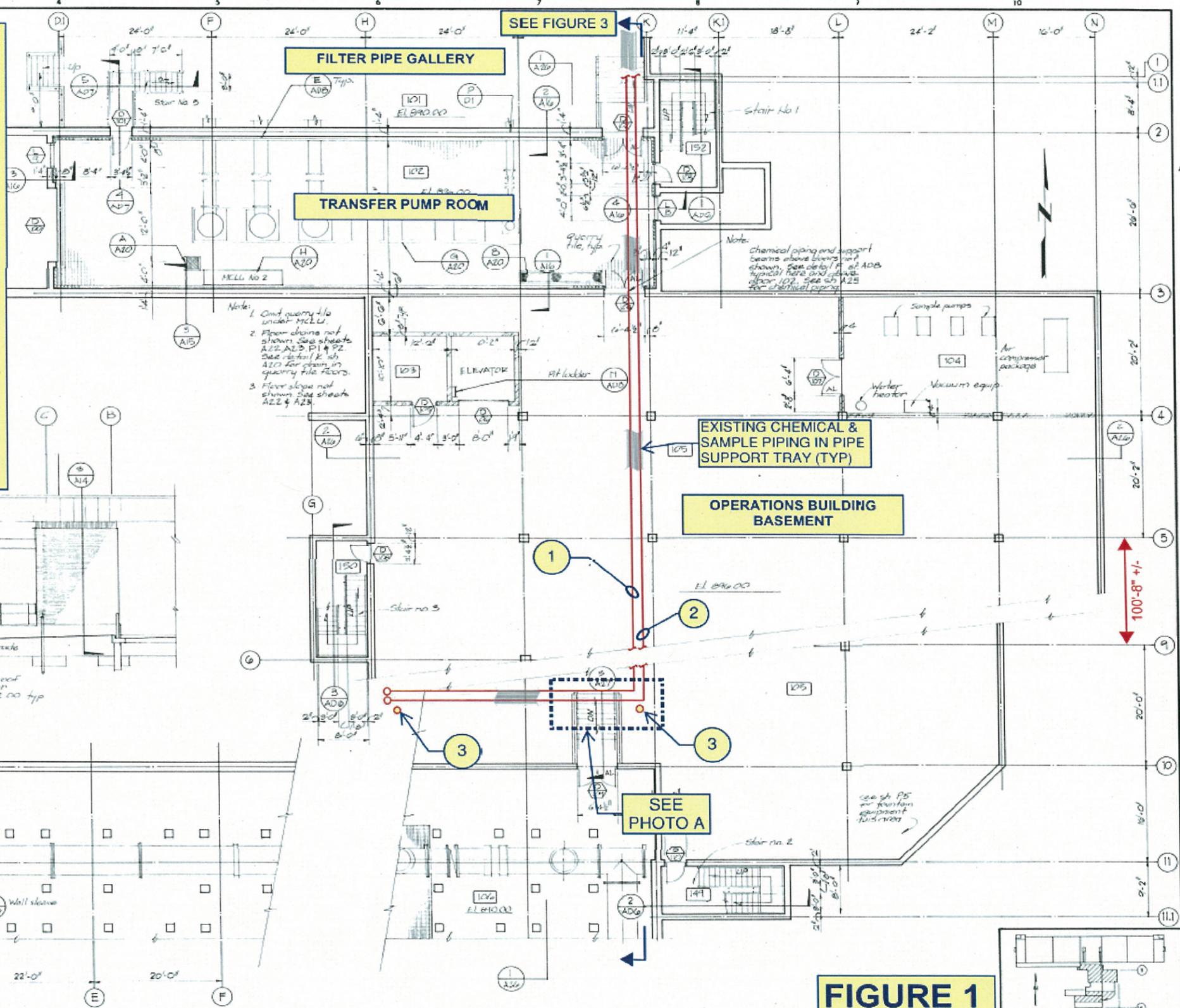
CHEMICAL PIPE REPAIR NOTES:

1. POST CAUSTIC PIPE: REMOVE ENTIRE LENGTH OF EXISTING 2" PVC POLYMER (NOT SHOWN) FROM VERTICAL PORTION AT PENETRATION THROUGH CEILING INTO THE OPERATIONS BUILDING BASEMENT TO THE FILTER PIPE GALLERY. INSTALL NEW 2" CPVC POST CAUSTIC IN LOCATION MADE AVAILABLE BY REMOVED POLYMER LINE. INSTALL ISOLATION BALL VALVES ON BOTH ENDS OF NEW POST CAUSTIC PIPING. CONNECT NEW 2" POST CAUSTIC TO EXISTING 2" STEEL POST CAUSTIC METERING PUMP DISCHARGE AT LOCATION BELOW PIPE PENETRATION THROUGH CEILING AT THE OPERATIONS BUILDING BASEMENT. NEW POST CAUSTIC PIPING TO BE ROUTED TO THE POST FILTER FEED POINT LOCATED IN THE FILTER PIPE GALLERY.

2. STANDBY POST CAUSTIC PIPE: ONCE NEW POST CAUSTIC LINE IS PLACED INTO SERVICE, REMOVE EXISTING 2" POST CAUSTIC STEEL PIPING (NOT SHOWN) AND REPLACE WITH NEW STANDBY 2" CPVC POST CAUSTIC. PRE CAUSTIC STEEL PIPING TO REMAIN. INSTALL ISOLATION BALL VALVES AT BOTH ENDS OF NEW POST CAUSTIC PIPING. STANDBY POST CAUSTIC LINE TO BE ROUTED BETWEEN THE SAME CONNECTION POINTS AS THE OTHER NEW 2" POST CAUSTIC LINE.

3. FLUORIDE PIPING REPAIR: REMOVE AND REPLACE APPROXIMATELY 5-FEET OF DAMAGED 1/2" PVC FLUORIDE LINE IN TWO PLACES.

4. PROVIDE PIPE IDENTIFICATION LABELS WITH FLOW ARROWS FOR ALL NEW PIPING.



BASEMENT PLAN - EL. 896.00

FIGURE 1

GREENVILLE, SOUTH CAROLINA
 WATER SYSTEM IMPROVEMENTS
 LAKE KEOWEE WATER TREATMENT PLANT
 OPERATIONS BUILDING
 BASEMENT PLAN

DESIGNED: RRR
 DETAILED: RSM, RRR
 CHECKED: LEW
 APPROVED: [Signature]
 DATE: 8-8-20



PROJECT NO.
 9776

A3

SHEET
 II OF 181

SITE PHOTOS / DRAWINGS

CHEMICAL PIPE REPAIR NOTES:

- 1. POST CAUSTIC PIPE:** NEW 2" CPVC POST CAUSTIC. ROUTE TO EXISTING POST CHEMICAL FEED POINT. PROVIDE ISOLATION BALL VALVE AT CHEMICAL FEED POINT.
- 2. STANDBY POST CAUSTIC PIPE:** NEW 2" CPVC STANDBY POST CAUSTIC. ROUTE TO EXISTING POST CHEMICAL FEED POINT. PROVIDE ISOLATION BALL VALVE AT CHEMICAL POINT AND CONNECT TO NEW 2" POST CAUSTIC.
- 3. EXISTING CHEMICAL AND SAMPLE PIPING AND SUPPORT TRAY.** THE CHEMICAL AND SAMPLE PIPING & SUPPORT TRAY LOCATED BELOW THE 42" WASHWATER HEADER MUST BE REMOVED. INSTALL REPLACEMENT PIPING IN NEW LOCATION PRIOR TO TAKING EXISTING PIPING OUT OF SERVICE. EXISTING PIPING INCLUDES APPROXIMATELY (9) 1" PVC SAMPLE LINES, (2) 2" PVC LINES, (3) 1" PVC LINES, 1/2" PVC FLUORIDE, 1/2" PVC, 2" STEEL CAUSTIC, 3" CHLORINE SOLUTION. LOCATION, SIZE, AND CONTENTS OF EXISTING PIPING INDICATED IS APPROXIMATE AND MUST BE FIELD VERIFIED.
- 4. NEW CHEMICAL AND SAMPLE PIPING.** REPLACEMENT PIPING TO INCLUDE ALL CHEMICAL AND SAMPLE PIPING TO BE REMOVED FROM BELOW 42" WASHWATER HEADER. VERIFY EXACT ROUTING WITH PLANT PERSONNEL PRIOR TO INSTALLATION. CONNECTIONS TO EXISTING PIPING SHALL BE COORDINATED WITH PLANT OPERATIONS TO MINIMIZE DOWN TIME. NEW PIPING CAN BE SUPPORTED WITH STACKED STAINLESS STEEL UNISTRUT FROM STAINLESS STEEL THREADED ROD OR WITH NEW ALUMINUM PIPE TRAY SIMILAR TO EXISTING. MAXIMUM UNSUPPORTED LENGTH OF NEW PIPING SHALL BE NO GREATER THAN 6 FEET. NEW PIPING INCLUDES THE TWO NEW 2" CPVC POST CAUSTIC LINES ALSO. PROVIDE PIPE IDENTIFICATION LABELS WITH FLOW ARROWS FOR ALL NEW PIPING.
- 5. DEHUMIDIFIER DUCTWORK:** RELOCATE A PORTION OF EXISTING 16" GALVANIZED DUCTWORK (NOT SHOWN) FROM DEHUMIDIFIER TO ALLOW SPACE TO INSTALL NEW CHEMICAL & SAMPLE PIPING. AVOID INSTALLATION OF NEW WORK IN HEADSPACE OVER EXISTING STAIRWAY.

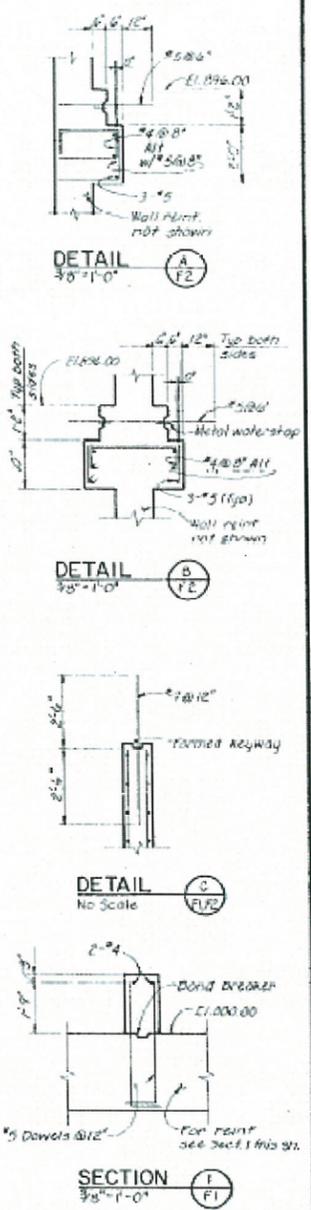
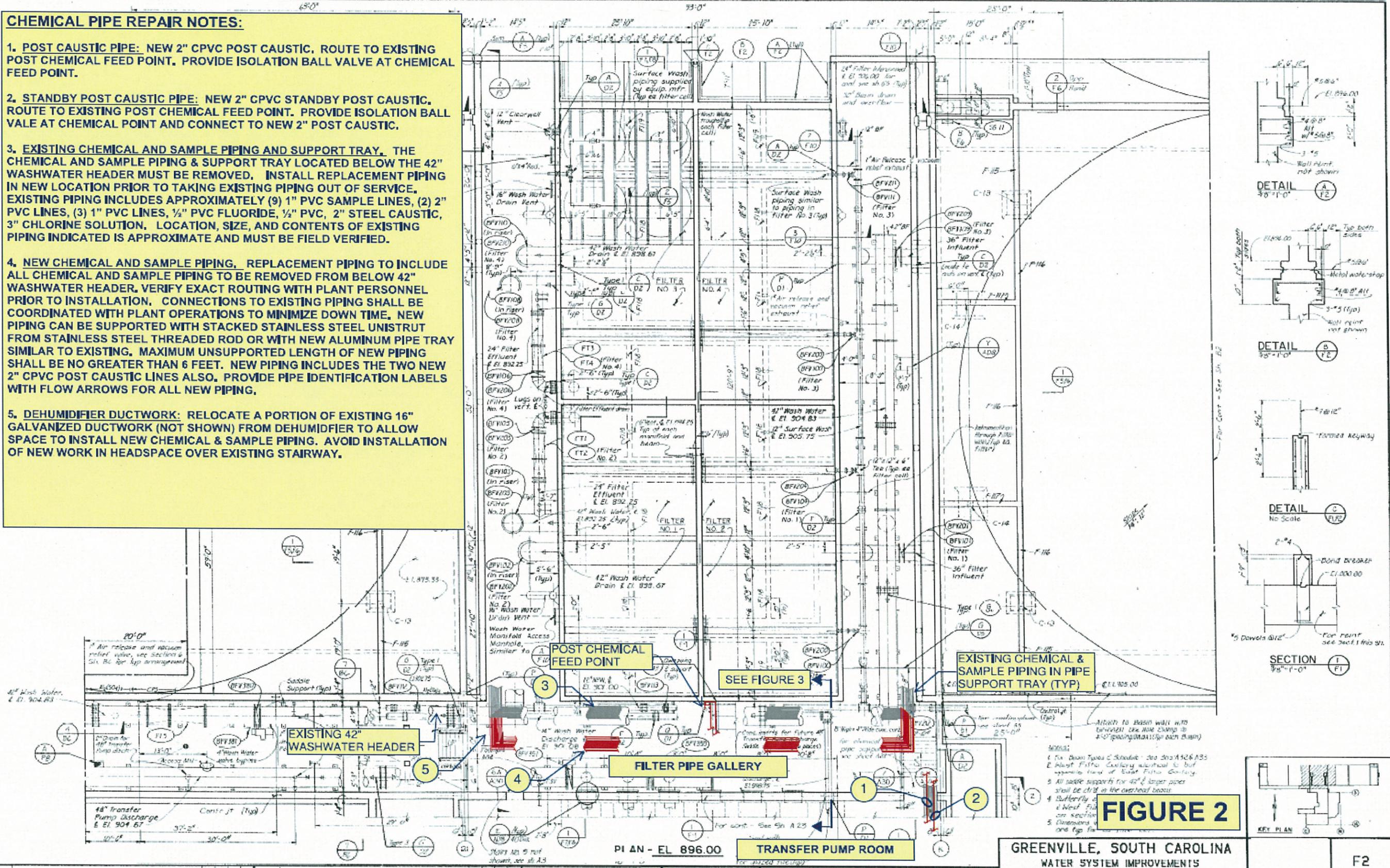


FIGURE 2

GREENVILLE, SOUTH CAROLINA
 WATER SYSTEM IMPROVEMENTS
 LAKE KEOWEE WATER TREATMENT PLANT

TRANSFER PUMP ROOM
 FILTER COMPLEX
 PLANS

F2

SHEET
 53 OF 181

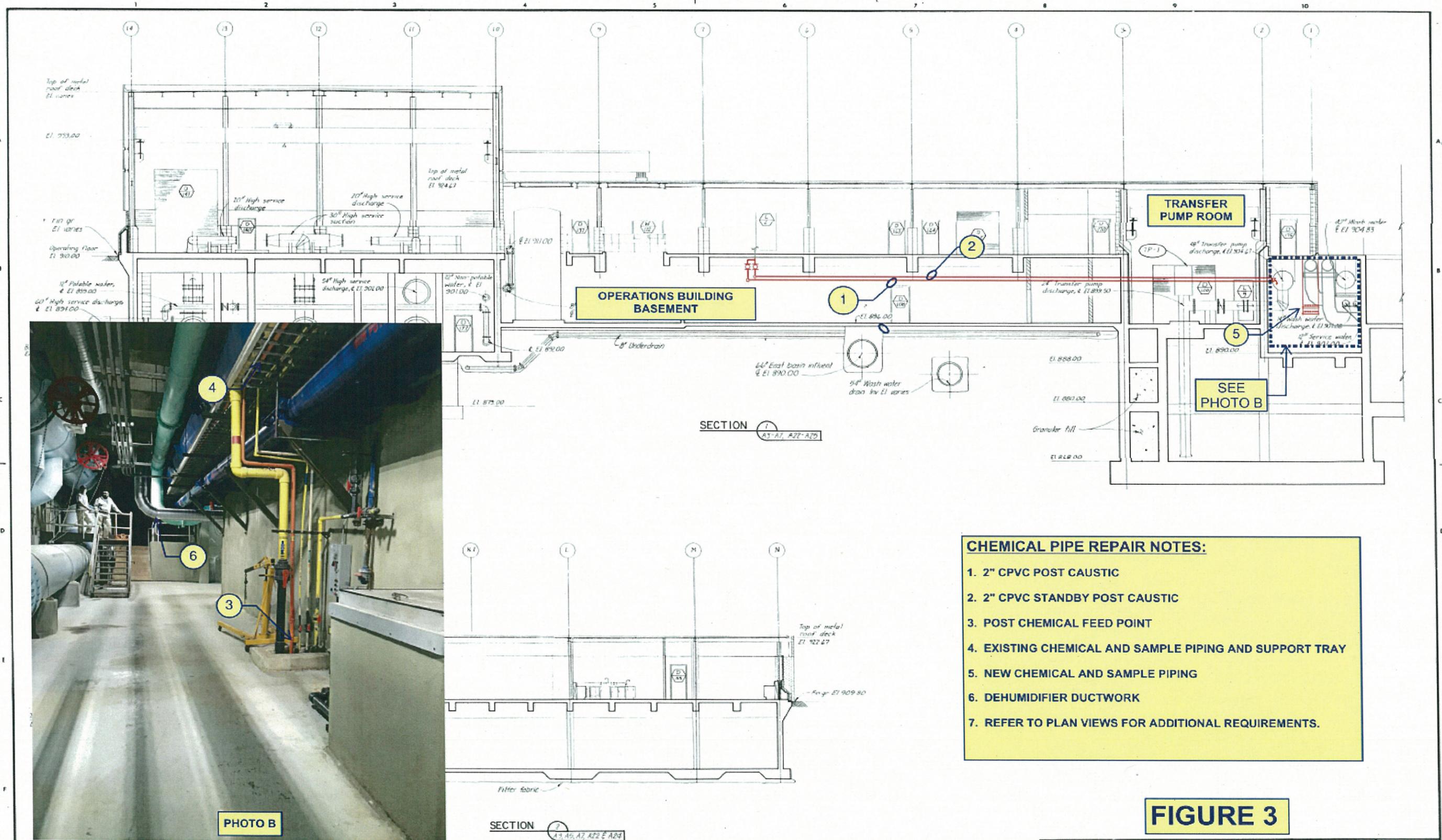
DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]
 DATE: 8.2.02

BLACK & VEATCH
 Engineers - Architects
 Kansas City, Missouri

PROJECT NO.
 9776

DATE	2-60	UNFOUNDED TO CONSTRUCTION RECORDS	NO. BY: CA, JPP
DATE		REVISIONS AND RECORD OF ISSUE	

SITE PHOTOS / DRAWINGS



CHEMICAL PIPE REPAIR NOTES:

1. 2" CPVC POST CAUSTIC
2. 2" CPVC STANDBY POST CAUSTIC
3. POST CHEMICAL FEED POINT
4. EXISTING CHEMICAL AND SAMPLE PIPING AND SUPPORT TRAY
5. NEW CHEMICAL AND SAMPLE PIPING
6. DEHUMIDIFIER DUCTWORK
7. REFER TO PLAN VIEWS FOR ADDITIONAL REQUIREMENTS.

FIGURE 3

GREENVILLE, SOUTH CAROLINA WATER SYSTEM IMPROVEMENTS LAKE KEOWEE WATER TREATMENT PLANT	A26
OPERATIONS BUILDING BUILDING SECTIONS	SHEET 34 OF 181

DESIGNED: <i>AKP</i> DETAILED: <i>JOC</i> CHECKED: <i>BAM</i> APPROVED: <i>[Signature]</i> DATE: <i>8-3-02</i>	PROJECT NO. 9776	CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE	AZH/AM/END NO. BY CK APP
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**Greenville Water
Pre-Construction Conference
Adkins WTF Chemical Feed Line Improvement Project**

General

To help clarify the construction contract administration procedures, the Engineer and Owner will conduct a Preconstruction Conference prior to the start of the Project. The Contractor must provide attendance by the designated personnel for this conference.

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

Submittals

To the maximum extent practicable, advise the Engineer at least 24 hours in advance of the Pre-Construction Conference as to items to be added to the agenda.

The Engineer will compile the minutes of the Pre-Construction Conference and will furnish copies of the minutes to the Contractor and the Owner. The Contractor may make and distribute such other copies as he wishes.

Pre-Construction Conference

The Conference will be scheduled to be held within 7 working days after the Owner issues the Notice of Intent to Award and may be held prior to issuance of the Notice to Proceed.

Attendance:

1. Provide attendance by authorized representatives of the Contractor and major subcontractors.
2. The Engineer will advise other interested parties, including the Owner, and request their attendance.

Minimum Agenda:

1. Organizational arrangement of the Contractor's forces and personnel and those of subcontractors, material suppliers and the Engineer.
2. Channels and procedures for communication.
3. Construction schedule, including sequence of critical work.
4. Contract Documents, including distribution of required copies of Drawings and revisions.
5. Processing of Shop Drawings and the other data submitted to the Engineer for review.
6. Rules and regulations governing the performance of Work.
7. Procedures for security, quality control, housekeeping and related matters.



ATTACHMENT D: PROPOSED PROJECT COST AND WARRANTY FORM

ADKINS WTF CHEMICAL FEED LINE IMPROVEMENT PROJECT
RFP 1420-18-2

Project Cost and Warranty Form

Total Proposal Cost : \$ _____

Please include all proposed warranties and guarantee information below:

The Contractor agrees that this proposal cost shall be good and may not be withdrawn for a period of 90 calendar days after the scheduled closing time for receiving proposals.

Respectfully submitted,

Contractor (Signature)

By: _____
Contractor (Print Name)

Title: _____

Date: _____

Address: _____

