

ADVERTISEMENT FOR BIDS

Sealed Proposals for the installation of approximately 5,800 feet of 8-inch PVC water main and 2,000 feet of 6-inch PVC water main, and other related work on E. Lincoln Street and Highland Drive in Tullahoma, Tennessee will be received by the Tullahoma Utilities Authority until 2:00 PM local time on April 16, 2024 at the Tullahoma Utilities Authority's office in Tullahoma, Tennessee, at which time and place they will be publicly opened and read aloud. The bidder shall be responsible for the bid's early delivery.

The Specifications, including insurance requirements, proposal and drawings are listed on the following pages.

Mailed bids are to be addressed as follows:

Attn: Timothy Howell, Purchasing Agent
Tullahoma Utilities Authority
P.O. Box 788
901 S. Jackson Street
Tullahoma, TN 37388

And marked as follows: **SEALED BID – E. LINCOLN ST WATER PROJECT**

The work to be bid upon is in one contract and consists of furnishing of all labor, materials, equipment, and services necessary to install approximately 5,800 feet of 8-inch PVC water main, approximately 2,000 feet of 6-inch PVC water main, fire hydrants, tie-ins to existing water mains, erosion control items, permit fees, and other related work on E. Lincoln Street and Highland Drive in Tullahoma, Tennessee

Copies of Specifications and Bid Documents may be obtained by contacting Tim Howell at 931-455-4515 or by email at thowell@tullahomautilities.com. Technical questions should be addressed to Dale Willis at 931-455-4515 or by email at dwillis@tullahomautilities.com.

The Tullahoma Utilities Authority reserves the right to reject any and all bids, to waive informalities and to negotiate with the apparent qualified best bidder or bidders to such extent as may be necessary.

No bidder may withdraw its bid within thirty days after the actual date of the opening thereof.

TULLAHOMA UTILITIES AUTHORITY

BY: R. Brian Skelton, President

SPECIFICATIONS AND CONTRACT DOCUMENTS

E. LINCOLN STREET WATER LINE

REPLACEMENT PROJECT

FOR

TULLAHOMA UTILITIES AUTHORITY

TULLAHOMA, TENNESSEE

MARCH 2024

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PROJECT DESCRIPTION

The Tullahoma Utilities Authority is soliciting bids for a water line replacement project in the Tullahoma, Tennessee. The work includes installation of an 8-inch and 6-inch PVC water main and associated appurtenances.

Sealed envelopes and packages containing proposals shall be marked "Proposal for Tullahoma Utilities Authority, E. Lincoln Street Water Line Replacement Project". Bidders must be licensed by the State of Tennessee to perform the work required. The envelope containing the bid shall be marked "Bid Enclosed" and shall be marked to show the bidder's Tennessee Contractor's license number, expiration date, the classification applying to the bid, and the bid opening date and time. No proposal will be considered unless it is made on the Proposal form that is included in the contract documents.

The work to be bid on is generally as follows:

The work to be accomplished under these Specifications consists of the installation of approximately 5,800 lineal feet of 8 inch PVC water main and approximately 2,000 lineal feet of 6 inch water main, tie-ins to existing water mains, installation of erosion control items, and other related work. An existing water main will be abandoned in place.

The allotted time for construction is 250 calendar days.

BID DOCUMENTS

The information for bidders; bid form, drawings, specifications, bond forms, and other contract documents may be obtained by contacting Tim Howell.

Mr. Tim Howell
Tullahoma Utilities Authority
P.O. 788
901 S. Jackson Street
Tullahoma, TN 37388

Copies of the documents may be obtained by contacting Mr. Howell at 931-455-4515 at the Tullahoma Utilities Authority's office.

The Tullahoma Utilities Authority reserves the right to waive any informality or to reject any and all bids.

BID BOND

Bids shall be accompanied by a bid bond in the amount of 5 percent of the bid amount. The bid bond shall be in the form provided in the bid documents.

OTHER BONDS

Prior to signing the contract, TUA will require the selected Contractor to secure a Payment Bond and a Performance Bond, each in the amount of 100 percent of the Contract Price.

INSTRUCTION TO BIDDERS

1. Preparation and Submission of Proposal

Bidders shall inform themselves fully of all conditions relating to the proposed work. Bids shall be submitted on the separate copy of the Proposal supplied for that purpose. The Proposal contained in the specifications and Contract Documents is for the convenience of the bidders and is not to be detached from the bound set of documents, or filled out or executed unless a separate Proposal form is not furnished to the Bidder.

The Proposal shall be enclosed in a sealed envelope and clearly labeled with the name of the project, name, address and the date and time of opening (so as to guard against premature opening of any bid).

All bidders must be licensed general contractors as required by the Contractor's Licensing Act of 1976 of the General Assembly of the state of Tennessee, and qualified for the type of construction being bid upon. Each Bidder shall write on the outside of the envelope containing its bid: 1) its contractor's license number; 2) the expiration date; and 3) that part of the classification applying to the bid. **If this is not done, the bid will not be opened.**

Proposals that contain any omission, conditions or limitations, or that show any other irregularity of any kind may be rejected as informal.

Should the Bidder, in preparing its bid, find anything necessary for the construction of the project that is not mentioned in the Specifications or shown on the Plans, or any discrepancy, it shall notify TUA so that such items may be included or corrected. Should the Bidder fail to notify TUA of such items, it will be assumed that its bid included everything necessary for the complete construction of an operating facility in the true spirit and intent of the designs shown.

The term "Bidder" shall mean all those contractors submitting Proposals. After the acceptance of the Proposal of the successful Bidder, the said term "Bidder" shall be interchangeable with the term "Contractor" as defined in the General Conditions and all things required of Bidders shall likewise apply to the Contractor.

2. Discrepancy - Bid Price

In some instances, there will be space in the Proposal for the bid price to be written in both words and figures. In such case, the price written in words shall include both dollars and cents and will be considered the correct price in case of a discrepancy between it and the price written in figures. In case of discrepancy, the correct total bid price will be considered to be the sum total of amounts bid for all items in the Proposal. The correct amount bid for each item will be considered to be the correct product of the quantity listed in the Proposal for the said item multiplied by the unit price bid.

3. Qualification of Bidders

The Contractors bidding on the work shall give evidence of their experience in the class of work involved, including multiple projects of comparable size and type as a general contractor over a minimum five years period.

Proposals submitted by contractors who have not, in the opinion of TUA, had sufficient experience in the size and type work involved, may not be considered.

4. Bid Guaranty

The Bidder shall accompany its Proposal with the Bid Bond in an amount not less than five percent (5%) of the amount of its bid executed on the form furnished as a part of the Contract Documents, or with a certified check in an amount not less than five percent (5%) of the amount of its bid. A Power of Attorney of the person signing the Bid Bond shall be included and, if the address of said person is outside the state in which the project is located, the Bid Bond shall also be signed by a Resident Agent who resides in said state and a copy of said Resident Agent's power of attorney shall be included. All such documents are subject to approval by TUA's attorney. It is assumed that the Surety Company executing the Bid Bond will also execute the Contract Bond if the Bid is accepted. If this is not to be the case, the approval of TUA's attorney will be prerequisite to award of contract. The surety company shall be rated "A" by the U. S. Treasury Department. If a certified check is used as Bid Guaranty, the Bidder shall submit the name of its proposed surety with its Proposal or in writing within three days after being requested to do so.

5. Contract Surety or Performance Bond

The successful Bidder will be required to furnish a Surety Bond or a Performance Bond and a Payment Bond executed by a Surety Company duly authorized to do business in the state in which the work is to be performed and acceptable to TUA'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. This bond or bonds must be executed in the form provided as part of the Contract Documents. The Surety Company shall be rated "A" by the U. S. Treasury Dept.

6. Interpretation of Contract Documents

The Construction Contract and the Detailed Specifications contain the provisions required for the construction of the Project. No information obtained from any officer, agent or employee of TUA on any such matters shall in any way affect the risk or obligations assumed by the contractor, or relieve it from fulfilling any of the conditions of the Contract.

If any contractor contemplating the submission of a bid for the proposed contract is in doubt as to the true meaning of any part of the Plans, Specifications or other proposed

Contract Documents, it should submit a written request for an interpretation thereof to TUA.

The person making the request will be responsible for its prompt delivery. Any interpretation of the Contract Documents will be made only by written addenda duly issued and mailed or delivered to each person receiving a set of such documents. TUA will not be responsible for explanations or interpretations of the proposed documents except as issued in accordance herewith.

7. Telegraphic Modification

Any Bidder may modify its bid by telegraphic communications at any time prior to the scheduled closing time for receipts of bids, provided such telegraphic communication is received by TUA prior to the closing time and, provided further, TUA is satisfied that a written confirmation of the telegraphic modification over the signature authorized by the Bidder was mailed prior to the closing time. The telegraphic communication should not reveal the bid price but should provide the addition or subtraction or other modification so that the final prices or terms will not be known by TUA until the sealed bid is opened. If written confirmation is not received within two days from the closing time, no consideration will be given to the telegraphic modification.

8. Secondhand and Salvaged Materials

The use of secondhand and/or salvaged materials will not be permitted unless specifically provided for in the Specifications.

9. Materials, Convict Made

No materials manufactured or produced in a penal or correctional institution shall be incorporated in the project under this Contract.

10. Materials, Domestic and Foreign

Only such unmanufactured articles, materials and supplies as have been mined or produced in the United States of America, and only such manufactured articles, materials and supplies as have been manufactured in the United States of American substantially all from articles, materials, or supplies mined, produced or manufactured (as the case may be) in the United States of American, shall be employed under this Contract in the construction of the project, except in such cases as specific reference is made in the Detailed Specifications to foreign products or in such cases as the bidders may receive specific written approval in the form of Addenda previous to the bid date.

11. Award of Contracts

TUA reserves the right to reject all bids and to waive informalities. Unless the bids are rejected, the Contract will be awarded to the lowest responsible bidder.

In determining the lowest responsible bidder, the following elements will be considered: 1) if the Bidder has a satisfactory performance record; 2) if the Bidder has a suitable financial status to meet obligations incidental to the work; 3) if the Bidder maintains a permanent place of business; 4) if the Bidder has adequate plant and equipment to perform the work properly and expeditiously; and 5) if the Bidder has appropriate technical experience. In addition, TUA may consider in making its determination: 1) the selection of equipment (or materials); 2) alternate equipment (or materials); and 3) deductions or other modifications listed in the Proposal.

12. Execution of Contracts

The Construction Contract and Performance and Payment Bond(s) shall be executed by the successful Bidder within the times specified in the Proposal. The number of copies to be executed will be specified in the Proposal.

13. Liquidated Damages for Failure to Enter into Contract

The successful Bidder, upon its failure or refusal to execute and deliver the Contract and Bonds required within ten (10) days after receipt of mailed, registered notice of the acceptance of its bid, shall forfeit to TUA, as liquidated damages for such failure or refusal, the security deposit with its bid.

14. Insurance, Contractor's coverage and Cancellation Provision

The Contractor will not be permitted to commence work until it has obtained all insurance required by these documents, five copies of Proof of Carriage have been submitted, and such insurance has been approved by TUA; nor shall the Contractor allow any subcontractor to commence work on its subcontract until all similar insurance required of the subcontractor has been so obtained and approved. If a subcontractor does not take out insurance in its own name and its principal contractor wishes to provide insurance protection for such subcontractor and such subcontractor's employees, an endorsement must be attached to the principal contractor's policy, which endorsement must identify the persons thereby covered, or else the principal contractor must take out appropriate policies in the name of the subcontractor. Each policy of insurance covering the Contractor's or subcontractor's operations under the Contract shall provide, either in the body of the policy or by appropriate endorsement to the policy, that such policy cannot be altered or canceled in less than ten (10) days after the mailing of written notice of such alteration or cancellation to the assured (insured) and the Engineer, or not less than five (5) days after actual receipt by the assured (insured) and the Engineer, of written notice of such pending alteration or cancellation. Certificates of insurance coverage shall include a statement of the alteration or cancellation provisions of the policy, sufficient to show definitely that such provisions comply with the requirements stated herein. The contractor shall be fully responsible for maintaining the insurance herein required and

shall save harmless TUA and/or Engineer in the event it neglects or fails to do so for any reason.

15. Insurance, Public Liability

The Contractor shall take out and maintain during the life of this Contract a Commercial General Liability Insurance Policy that shall protect itself and any subcontractor performing work covered under this Contract from claims for damages because of bodily injury, including accidental death, and from claims for property damage which may arise from operations under this Contract, whether such operations be by it or by any subcontractor, or by anyone directly or indirectly employed by either of them. The Contractor's insurance shall likewise protect TUA and Engineer and save them or either of them harmless for acts of the Contractor. Minimum limits of coverage shall be as follows:

Commercial General Liability

1. General Aggregate.....	\$1,000,000
2. Products/Completed Operations.....	\$1,000,000
3. Bodily Injury or Death – Each Person	\$1,000,000
4. Bodily Injury or Death – Each Accident.....	\$1,000,000
5. Property Damage – Each Accident	\$1,000,000
6. Property Damage Aggregate	\$1,000,000
7. Excess or Umbrella Liability.....	\$5,000,000

Automobile & Truck Liability

(Including Owner, Not Owned and/or Hired Vehicles)

1. Bodily Injury or Death – Each Person	\$1,000,000
2. Bodily Injury or Death – Each Accident.....	\$1,000,000
3. Property Damage – Each Accident	\$1,000,000

In the event blasting operations are required in performance of the work, the contractor's insurance shall specifically cover all blasting operations.

16. Insurance, Workmen's Compensation

The Contractor shall take out and maintain during the life of this Contract Workmen's Compensation Insurance, including occupational disease provisions, for all of its employees employed at the site of the project and, in case any work is sublet, the Contractor shall require the subcontractor similarly to provide Workmen's Compensation Insurance, including occupational disease provisions, for all the latter's employees unless such employees are covered by the protection afforded by the Contractor.

In case any class of employees engaged in hazardous work under this Contract at the site of the project is not protected under the Workmen's Compensation statute, the Contractor shall provide, and shall cause each subcontractor to provide adequate coverage for the protection of its employees not otherwise protected. The insurance

policy shall contain a clause of endorsement to save the Engineer and TUA harmless for any acts of the Contractor.

17. Insurance, Builder's Risk

The Contractor shall provide Builder's Risk Insurance (all hazards coverage) upon 100% of the insurable portion of all work in place and/or materials stored at the site, where there is any considerable risk from such causes. Such insurance shall provide coverage at all times for the full cash value of all complete construction and/or materials stored and shall remain in effect until the covered facilities are accepted by TUA. Unless otherwise noted, all portions of the construction, except buried piping systems, shall be covered on a 100 percent complete value based for the benefit of TUA, the Contractor and all subcontractors as their interest may appear.

18. Certificate of Insurance

As a minimum, the Certificate of Insurance shall contain the following information: 1) name of insurance company; 2) policy number and liability limits on all policies; 3) date of expiration of all policies; 4) statement that ten days' notice of cancellation will be given to TUA and the Engineer; 5) statement that coverage that will hold TUA and Engineer harmless for acts of the Contractor is included.

19. Sanitary Facilities

The Contractor shall furnish, install and maintain ample sanitary facilities for the workmen. As the needs arise, enclosed temporary toilets, in sufficient number, shall be placed as directed by the Engineer. Permanent toilets installed under this Contract shall not be used during construction. Drinking water shall be provided from an approved safe source, so piped or transported as to be kept clean and fresh and served from single service containers of satisfactory types. The inclusion of this article in no way obligates TUA to make verification of or to inspect the sanitary facilities and the Contractor shall save TUA harmless from any claims arising therefrom.

20. Lands and Rights-of-Way

It is anticipated that all easements and land required for the construction of this project will be acquired before the issuance of a Work Order or within the period stipulated in the Advertisement for Bids during which contractors are not allowed to withdraw their bids. Unless the land(s) and/or easements are obtained or the Contractor agrees to either an extension or a Work Order stipulating the limitations of work, it may withdraw its bid at the end of such period stipulated in the Advertisement for Bids.

21. Commencement and Completion of Work

The Contractor shall commence work on a date to be specified in a written order of the Engineer, and shall fully complete all work under the Contract within the number of days

set out in the Proposal and/or Contract. Contractor shall commence work within the time set forth by TUA.

22. Funds for Partial Payment Estimates

Funds for partial payment estimates have been provided by TUA so that they may be paid in cash as set forth in the General Conditions.

The Contractor must understand that in handling the financing of such work, delays in meeting the partial payments beyond the control of TUA are possible and a reasonable delay on the part of TUA in making payment to the Contractor for any period shall not be construed as a breach of contract on the part of TUA.

23. Projects Involving Federal Funds

Not applicable to this project.

24. Construction Records and Reports

The Contractor shall, upon request, furnish TUA with proof that all payrolls for services rendered and invoices for materials supplied have been duly paid as herein required, and such other pertinent data as TUA may require.

TUA or its authorized representatives and agents shall be permitted to inspect all payrolls, records of personnel, invoices of materials, and other relevant data and records.

On projects involving federal funds, the federal agency or agencies participating in the project shall be considered representatives of TUA.

25. Wages and Hours and Non-Discrimination

The Contractor shall not pay less than the wage scale shown in the Wage Determination Decision, if such a Decision is included in the Specifications, and shall conform in every respect to applicable rules, regulations, and statutes pertaining to wages, hours of work, and non-discrimination. The Section entitled "Supplemental General Conditions" and the applicable federal regulations set forth specific requirements and reporting procedures.

26. Payment of Employees

The Contractor and each of its subcontractors shall pay each of its employees engaged in work on the project in full (less deductions made mandatory by law) in cash (or check), and not less often than once each week.

27. Extra Work

Any departure from the original contract will be made at the Contract unit price shown in the Proposal if ordered by the Engineer or by Change Order as provided in the appropriate paragraphs of the General Conditions.

28. Final Payment

Final payment to the Contractor will be made in accordance with the details set out hereinafter under General Conditions

29. Laws and Regulations

The Bidder's attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full.

30. Subcontracts

The Bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this Contract:

- 1) Must be acceptable to TUA and any federal agency involved; and
- 2) Must submit any compliance forms or certificates required by the federal agency. Approval of the proposed subcontractor award cannot be given by TUA unless and until the proposed subcontractor has submitted the certification or compliance form(s) and/or other evidence showing that it has fully complied with any reporting requirements to which it is or was subject.

31. Ownership of Contractor's License

In addition to the requirements of the laws of the state in which the project is located, no bid will be accepted from any contractor who does not propose to accomplish the major portion of the work with its own forces and under its own supervision. No bids shall be submitted with the intent that an unlicensed subcontractor will be utilized to construct the major portion of the work. No Bidder shall prepare and submit a bid under the license of another contractor. Any misrepresentation which involves the submittal of a bid by one contractor with the intent that another contractor will accomplish the work shall be considered grounds for rejection of the Proposal.

GENERAL CONDITIONS

1. Contract and Contract Documents

The Plans, Specifications and Addenda shall form part of this Contract and the Provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth. The table of contents, titles, headings, running headlines and marginal notes contained herein and in said documents are solely to facilitate reference to various provisions of the Contract Documents and in no way affect, limit or cast light on the interpretation of the provisions to which they refer.

2. Definitions and Meaning of Terms

Whenever in these Specifications and Contract Documents the following terms or pronouns referring to them are used, the intent and meaning shall be interpreted as follows:

- a. The “Contract” or “Agreement” shall mean the Contract Documents executed by TUA and the Contractor, of which the Plans and Specifications form a part.
- b. The Term “Owner” shall mean the Tullahoma Utilities Authority or TUA, who is obligating itself through the Contract to pay for the work performed thereunder.
- c. The term “Contractor” shall mean the party who is obligated under the Contract and the Proposal to perform the work.
- d. The term “Engineer” or “Engineers” shall mean that person, persons, or firm so designated by TUA, its successors, or duly authorized representatives.
- e. The term “Surety” shall mean the Corporate Surety Company furnishing the bid guaranty and/or executing the Contract Bond(s) as Surety.

3. Notice and Service Thereof on Contractor

Any notice to the Contractor from TUA or Engineer relative to any part of this Contract shall be in writing and considered delivered and the service thereof completed, when said notice is posted, by certified or registered mail, to the said Contractor at its last given address, or delivered in person to said Contractor or its authorized representative on the work.

Any notice to TUA from the Contractor relative to any part of this Contract shall be in writing and considered delivered and the service thereof completed when said notice is posted by certified or registered mail, with the original copy to TUA at the address shown in the Contract and a duplicate copy to the Engineer at its address as shown in Paragraph 2 above.

4. Plans and Specifications

TUA, without charge, will furnish to the Contractor one copy of the Plans and Specifications for the proper handling of the work. The contractor shall keep the Plans and Specification at the work site at all times. This set shall be kept current by the addition of all approved changes, addenda and amendments thereto.

The Plans and Specifications are intended to be explanatory to each other; should any discrepancy appear or any misunderstanding arise as to the import of anything contained in either, the Engineer shall decide the true intent and decision shall be binding. Any corrections or errors or omissions or explanations of items not completely clear may be made by the Engineer to such an extent as required to fulfill the true intent. All work or materials shown on the Plans and not mentioned in the Specifications or any work specified and not shown on the Plans, shall be furnished performed and done by the Contractor as though the same were shown and/or mentioned in both.

All discrepancies, errors or omissions shall be reported to TUA immediately and the Contractor shall not avail itself of such discrepancy, error or omission to its advantage and/or to the disadvantage of TUA. TUA shall decide fairly and promptly on such matters, examine whether such item or items (1) could be reasonably foreseen by the Contractor, (2) affects the scope of work to such extent a Change Order may be required, and (3) is consistent with the true intent of the Plans and Specifications.

5. Shop or Setting Drawings

The Contractor shall check, correct, and submit promptly to TUA two copies of each shop or setting drawings. The Contractor shall carefully check the said drawings and make notation thereof; the Engineer will examine the drawings only for conformance with the general design.

After examination of such drawings by TUA and the return thereof, the Contractor shall make such corrections to the drawings as have been indicated or are required and shall furnish TUA with five corrected copies. If requested by TUA, the Contractor must furnish additional copies. Regardless of corrections made in or approval given to such drawings by TUA, the Contractor will nevertheless be responsible for the accuracy of such drawings and for their conformity to the Plans and Specifications, unless it notifies TUA in writing of any deviations at the time it furnishes such drawings and said deviations is approved in writing. All work at the site shall be performed by use of approved shop drawings.

Rejection of the same shop drawings on three separate occasions will constitute grounds for total rejection of the proposed equipment or supplier as being unable or unwilling to meet the Specifications.

6. Materials, Services, Construction Equipment and Facilities

It is understood that except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to execute, complete and deliver the work within the specified time. The Contractor shall furnish such construction equipment and employ such labor as is necessary for the proper performance of the work. The Engineer will determine proper performance.

Any work necessary to be performed after regular working hours, on Sundays, or legal holidays, shall be performed without additional expense to TUA.

7. Contractor's Title to Materials

No materials or supplies for the work shall be purchased by the Contractor or by any subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants that it has good title to all materials and supplies used by it in the work, free from all liens, claims or encumbrances.

8. Inspection and Testing of Materials

The details of inspection and testing are set forth in the Detailed Specifications.

9. "Or Equal" Clause

Whenever the words "or approved equal" or "or equal" appear in the Specifications or on the Plans, they shall be interpreted to mean an item of material or equipment that in the opinion of TUA is similar to that named, suited to the same use, and as capable of performing the function as that named. TUA's decision as to the equality of any material or equipment to that specified shall be final, but the approval of TUA shall not relieve the Contractor from its responsibility concerning such material or equipment, or affect the guarantee covering all parts of the work.

10. Character of Workmen

The Contractor shall employ only workmen skilled in their various duties and shall dismiss, at the request of TUA, any person employed in, about, or upon the work, whom misconducts himself or is incompetent or negligent in the performance of duties assigned to him.

11. Patents

The Contractor shall hold and save TUA and its officers, agents (which includes the Engineer), servants and employees harmless from liability of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the Contract, including its use by TUA, unless otherwise specifically stipulated in the Contract Documents.

If the Contractor uses any design, device or materials covered by letters, patent or copyright, it shall provide for such use by suitable agreement with TUA of such patented or copyrighted design, device or materials. It is mutually agreed and understood that, without exception, the contract prices shall include all royalties or costs arising from the use of such design, device or materials in any way involved in the work. The Contractor and/or its Sureties shall indemnify and save harmless TUA of the project from any and all claims for infringement by reason of the use of such patented or copyrighted design, device or materials or any trademark or copyright, in connection with work agreed to be performed under this Contract, and shall indemnify TUA for any cost, expense, or damage which it may be obligated to pay by reason of such infringement at any time during the prosecution of the work or after completion of the work.

12. Laws and Regulations

The Contractor shall inform itself and abide by all Federal, State and Local laws, ordinances, decrees or regulations affecting the work, or those employed thereon or the materials used therein. It shall save TUA and Engineer harmless from damages or claims arising from any violations or alleged violations by the Contractor, its subcontractors or employees of such laws, ordinances, decrees or regulations.

13. Contractor's Obligations

The Contractor shall and will, in good workmanlike manner, do and perform all work and furnish all supplies and materials, machinery, equipment, facilities and means, except as herein otherwise expressly specified, necessary or proper to perform and complete all the work required by this Contract, within the time herein specified, in accordance with the provisions of this Contract and said Specifications and in accordance with the Plans and Specifications covered by this Contract and any and all supplemental plans and shop drawings and in accordance with the directions of the Engineer as given from time to time during the progress of the work. It shall furnish, erect, maintain and remove such construction plant and such temporary works as may be required. The Contractor shall observe, comply with and be subject to all terms, conditions, requirements, and limitations of the Contract and Specifications, and shall do, carry on, and complete the entire work to the satisfaction of the Engineer and TUA.

At the site of the work the Contractor shall employ a construction superintendent or foreman who shall have full authority to act for the Contractor. It is understood that

such Representative shall be acceptable to the Engineer and shall be one who can be continued in that capacity for the particular job involved unless he ceases to be on the Contractor's payroll.

14. Weather Conditions

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

15. Protection of Work and Property--Emergency

The Contractor shall at all times safely guard TUA's property from damage or loss in connection with this Contract. It shall at all times safely guard and protect its own work, and that of adjacent property, from damage. The Contractor shall replace or make good any such damage, loss or injury unless such be caused directly by errors contained in the Contract or by TUA, or its duly authorized representatives.

In case of an emergency which threatens loss or injury of property and/or safety of life, the Contractor will be allowed to act, without previous instructions from TUA, in a diligent manner. The Contractor shall notify TUA immediately thereafter. Any claims for compensation by the Contractor due to such extra work shall be promptly submitted to TUA for approval.

Where the Contractor has not taken action but has notified TUA of an emergency threatening injury to persons or damage to the work or any adjoining property, it shall act as instructed or authorized by TUA.

The amount of reimbursement claimed by the Contractor on account of any emergency action shall be determined in the manner provided in Paragraph 16 of these General Conditions.

16. Changes in Work

No changes in the work covered by the approved Contract Documents shall be made without having prior written approval of TUA. (Where unit bid prices shown in the Proposal cover the classification of the work, they shall be used to establish the charges or credits.) Charges or credits for the work covered by the approved changes shall be determined by one or more, or a combination of the following methods:

- a. Unit bid prices shown in the Proposal;

- b. An agreed lump sum;
- c. The actual cost of:
 - (1) Labor, including foremen;
 - (2) Materials entering permanently into the work;
 - (3) The ownership or rental cost of construction plant and equipment during the time of use on the extra work;
 - (4) Power and consumable supplies for the operation of power equipment;
 - (5) Insurance;
 - (6) Social Security and Old Age and Unemployment Contributions.

The lump sum order (b.) shall be supported by a detailed breakdown of materials and labor.

To the cost under (c.) above, there should be added a fixed fee to be agreed upon but not to exceed fifteen percent (15%) of the estimated cost of the work. The fee shall be compensation to cover the cost of supervision, overhead, bond, profit and any other general expenses.

17. Extras and Claims for Extra Cost

Without invalidating the Contract, TUA may order extra work or make changes by altering, adding to or deducting from the work, the contract sum being adjusted accordingly, and the consent of the Surety being first obtained where necessary or desirable. All of the work of the kind bid upon shall be paid for at the price stipulated in the Proposal and no claims for any extra work or materials shall be allowed unless the work is ordered in writing by TUA or its Engineer, acting officially for TUA, and the price is stated in such order.

No claim for extra work or cost shall be allowed unless the same was done in pursuance of a written order of the Engineer approved by TUA, as aforesaid, and the claim presented with the first estimate after the changed or extra work is done. In the event TUA and Engineer are not satisfied that the lump sum price submitted under Subparagraph 16.b. is fair, TUA may require the work to be performed under Subparagraph 16.c. When work is performed under the terms of Subparagraph 16. c. of these General Conditions, the Contractor shall furnish satisfactory bills, payrolls and vouchers covering all items of cost and, when requested by TUA, give TUA access to accounts relating thereto.

18. Time for Completion and Liquidated Damages

It is hereby understood and mutually agreed, by and between the Contractor and TUA, that the date of beginning and the time for completion as specified in the Contract of the work to be done hereunder are essential conditions of this Contract; and it is further mutually understood and agreed that the work embraced in this Contract shall be commenced on a date to be specified in the work order.

The Contractor agrees that said work shall be prosecuted regularly, diligently and uninterruptedly at such rate of progress as will ensure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and TUA, that the time for the completion of the work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

If the said Contractor shall neglect, fail, or refuse to complete the work within the time herein specified, or any proper extension thereof granted by TUA, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to TUA the amount specified in the Contract, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contractor shall be in default after the time stipulated in the contract for completing the work.

The said amount is fixed and agreed by and between the Contractor and TUA because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages TUA would in such event sustain. If and when the completion date is exceeded, an amount will be deducted from monthly estimates equal to the number of days exceeded through the partial estimate period multiplied by the amount per day specified.

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

- a. to any preference, priority or allocation order duly issued by the Government;
- b. to unforeseeable cause beyond the control and without the fault or negligence of the contractor, including, but not restricted to, acts of God, or of the public enemy, acts of TUA, acts of another Contractor in the performance of a contract with TUA, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; and

- c. to any delays of subcontractors or suppliers occasioned by any of the causes specified in subsections a. and b. above.

Provided, further, that the Contractor shall, within ten days from the beginning of such delay, unless TUA shall grant a further period of time prior to the date of final settlement of the Contract, notify TUA, in writing, of the causes of the delay. TUA shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter.

19. Correction of Work

All work, all materials, whether incorporated in the work or not, all processes of manufacture, and all methods of construction shall be at all times and places subject to the inspection of TUA who shall be the final judge of the quality and suitability of the work, materials, process of manufacture, and methods of construction for the purposes for which they are used. Should they fail to meet its approval they shall be forthwith reconstructed, made good, replaced and/or corrected, as the case may be, by the Contractor at its own expense. Rejected materials shall immediately be removed from the site. If, in the opinion of TUA, it is undesirable to replace any defect or damaged materials or to reconstruct or correct any portion of the work injured or not performed in accordance with the Contract Documents, the compensation to be paid to the Contractor hereunder shall be reduced by such amount as in the judgment of TUA shall be equitable.

20. Subsurface Conditions Found Different

Should the Contractor encounter subsurface and/or latent conditions at the site materially differing from those shown on the Plans or indicated in the Specifications, it shall immediately give notice to TUA of such conditions before they are disturbed. TUA will thereupon promptly investigate the conditions and, if it finds that they materially differ from those shown on the Plans or indicated in the Specifications, it will at once make such changes to be adjusted in the manner provided in Paragraph 16 of these General Conditions.

21. Arbitration

a. Demand for Arbitration

Any decision or action of TUA which is subject to arbitration shall be submitted to arbitration upon the demand of either party to the dispute.

The Contractor shall not cause a delay of the work because of the pendency of the arbitration proceedings, except with the written permission of TUA, and then only until the arbitrators shall have an opportunity to determine whether or not the work shall continue until they decide the matters in dispute.

The demand for arbitration shall be delivered in writing to TUA and adverse party, either personally or by registered mail to the last known address of each, within ten days of the receipt of TUA's decision, and in no case after final payment has been accepted. If TUA fails to make a decision within a reasonable time, a demand for arbitration may be made as if its decision has been rendered against a demanding party.

b. Arbitrator

No one shall be nominated or act as an arbitrator who is in any way financially interested in this Contract or in the business affairs of TUA or the Contractor, or otherwise connected with any of them. Each arbitrator shall be a person in general familiar with the work or the problem involved in the dispute submitted to arbitration, preferably a recognized Engineer, contractor or Attorney experienced in or having intimate knowledge of the type of construction in question.

Unless otherwise provided by controlling statutes, the parties may agree upon one arbitrator; otherwise, there will be three; one named by each party to this Contract in a written communication to the other party, and the third chosen by these two arbitrators; or, if they should fail to select a third within fifteen days, then he shall be appointed by the presiding officer, if a disinterested party, of the Bar Association nearest to the location of the work. Should the party demanding arbitration fail to name an arbitrator within ten days of its demand, its right to arbitration shall lapse. Should the other party fail to name an arbitrator within said ten days, then said presiding officer shall appoint such arbitrator within ten days and, upon its failure to do so, then such arbitrator shall be appointed, on the petition of the party demanding arbitration, by a judge of the Federal Court in the District where such arbitration is to be held.

The said presiding officer shall have the power to declare the position of any arbitrator vacant by reason of refusal or inability to act, sickness, death, resignation, absence or neglect. Any Vacancy shall be filled by the party making the original appointment, and unless so filled within five days after the same has been declared vacant, it shall be filled by the said presiding officer.

If testimony has been taken before a vacancy has been filled by the said presiding officer, the matter must be reheard unless a rehearing is waived in the submission or by the written consent of the parties.

If there be one arbitrator, his decision shall be binding; if three, the decision of any two shall be binding in respect to both the matters submitted to arbitration and the procedure followed during the arbitration. Such decision shall be condition precedent to any right of legal action.

c. Arbitration Procedure

The arbitrators shall deliver a written notice to each of the parties, either personally or by registered mail to the last known address of each, of the time and place for the beginning of the hearing of the matters submitted to them. Each party may submit to the arbitrators such evidence and arguments as it may desire and the arbitrators may consider pertinent. The arbitrators shall, however, be the judges of all matters of law and fact relative to both the subject matters of and the procedures during arbitration and shall not be bound by technical rules of law or procedure. They may hear evidence in whatever form they desire. The parties may be represented before them by such person as each may select, subject to the disciplinary power of the arbitrators if such representative shall interfere with the orderly or speedy conduct of the proceedings.

Each party shall supply the arbitrators with such papers and information as they may demand or with any witness whose movements are subject to their respective control, and upon refusal or neglect to comply with such demands, the arbitrators may render their decision without the evidence which might have been elicited therefrom and the absence of such evidence shall afford no ground for challenge of the award by the party refusing or neglecting to comply with such demands.

The submission to arbitration (the statement of the matters in dispute between the parties to be passed upon by the arbitrators) shall be in writing duly acknowledged before a notary. Unless waived in writing by both parties to the arbitration, the arbitrators, before hearing testimony, shall be sworn by an officer authorized by law to administer an oath, faithfully and fairly to hear and examine the matters in controversy and to make a just award according to the best of their understanding.

The arbitrators, if they deem the case demands it, are authorized to award to the party whose contention is sustained such sums as they shall consider proper for the time, expense, and trouble incident to the arbitration, and if the arbitration was demanded without reasonable cause, damages for delay and other losses. The arbitrators shall fix their own compensation unless otherwise provided by agreement, and shall assess the costs and charges of the arbitration upon either or both parties.

The award of the arbitrators shall be in writing and acknowledged like a deed to be recorded, and a duplicate shall be delivered personally or by registered mail forthwith upon its rendition, to each of the parties to the controversy. Subject to the provisions of the controlling statutes, judgment may be rendered upon the award by the Federal Court or the highest State Court having jurisdiction to render same.

The award of the arbitrators shall not be open to objection on account of the form of proceedings of the award, unless otherwise provided on any matter covered by this Article otherwise that as hereinbefore specified, the method of procedure throughout and the legal effect of the award shall be wholly in accordance with said statutes, it being the intention hereby to lay down a principle of action to be followed, leaving its local application to be adapted to the legal requirements of the jurisdiction having authority over the arbitration.

The Engineer shall not be deemed a party to the dispute. It is given the right to appear before the arbitrators to explain the basis of its decision and give such evidence as they may require.

22. Right of TUA to Terminate Contract

In the event that any of the provisions of this Contract are violated by the Contractor, or by any of its subcontractors, TUA may serve written notice upon the Contractor and the Surety of its intention to terminate the contract. Such notice shall contain the reasons for such intention to terminate the Contract and unless, within ten days after the serving of such notice upon the Contractor, such violations or delays shall cease and satisfactory arrangements of correction be made, the Contract shall, upon the expiration of said ten days, cease and terminate. In the event of any such termination TUA shall immediately serve notice thereof upon the Surety and the Contractor, and the Surety shall have the right to take over and perform the Contract. Provided, however, that if the Surety does not commence performance thereof within ten days from the date of the mailing to such Surety of notice of termination, TUA may take over the work and prosecute the same to completion by contract or by force account for the account and at the expense of the Contractor; and the Contractor and its Surety shall be liable to TUA for any excess cost occasioned TUA thereby; and, in such event, TUA may take possession of and utilize in completing the work such materials, appliances, and plant as may be on the site of the work and necessary therefore.

23. Construction Schedule and Periodic Estimates

Immediately after execution and delivery of the Contract, and before the first partial payment is made, the Contractor shall deliver to TUA an estimated construction progress schedule in form satisfactory to TUA, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the Contract Documents and the anticipated amount of each monthly payment that will become due the Contractor in accordance with the progress schedule.

The Contractor shall also furnish on forms acceptable to TUA: a) a detailed estimate giving a complete breakdown of the contract price; and b) periodic itemized estimates of work done for the purpose of making partial payments thereon. The costs employed in making up any of these schedules will be used only for

determining the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the contract price.

24. Quantities of Estimate

Wherever the estimated quantities of work to be done and materials to be furnished under this Contract are shown in any of the documents, including the Proposal, they are given for use in comparing bids and the right is especially reserved except as herein otherwise specifically limited to increase or diminish them as may be deemed reasonably necessary or desirable by TUA to complete the work contemplated by this Contract, and such increase or diminution shall in no way vitiate this Contract, nor shall any such increase or diminution give cause for claims or liability for damages. The Engineer will compile and record the actual unit quantities completed and this compilation shall be the basis for payment of partial payment estimates and the final estimate.

25. Contractor's Responsibility for the Submission of Partial Estimates

Prior to the submission of the first estimate, the Contractor shall submit and obtain TUA's approval of a Progress Schedule and a detailed breakdown of the Contract price as provided in Paragraph 23 of these General Conditions.

The Contractor shall be responsible for the submission to TUA of two copies of a claim for a partial payment estimate on or before the fifth day of each month covering work performed the previous month. Said claims shall be on forms acceptable to TUA and shall bear the approval of the TUA's representative having inspection authority over the project covered by the estimate (Resident Engineer or Inspector).

26. Partial Payment Estimates

Once each calendar month, not later than ten days after receipt of an estimate duly approved by TUA, TUA will make a partial payment to the Contractor in an amount equal to ninety-five percent (95%) (less any other deductions provided for in the Contract Documents) of the work performed during the preceding calendar month by the Contractor. When requested by the Contractor, retained funds will be handled as required by Chapter 345, Senate Bill No. 1111 enacted by the General Assembly of the State of Tennessee.

27. Payment for Materials Stored at Site of Project

~~Payment for materials or equipment stored at the site of the project will be allowed by TUA to the extent of ninety percent (90%) of the cost of such materials or equipment upon specific recommendations of the Engineer.~~

~~— Glass, small hardware, clay or concrete pipe less than eight inches in diameter, expendable materials such as caulking, etc., and any items improperly stored will not be considered for payment.~~

28. Owner's Right to Withhold Certain Amounts and Make Application Thereof

The Contractor agrees that it will indemnify and save TUA, (including the Engineer) harmless from all claims growing out of the lawful demands of subcontractors, laborers, workmen, mechanics, material suppliers, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies including commissary, incurred in the furtherance of the performance of this Contract.

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

29. Payments by Contractor

The Contractor shall pay; a) for all transportation and utility services not later than the 20th day of the calendar month following that in which services are rendered; b) for all materials, tools, and other expendable equipment to the extent of ninety percent (90%) of the cost thereof, not later than the 20th day of the calendar month following that in which such materials, tools, and equipment are delivered at the site of the project, and the balance of the cost thereof not later than the 30th day following the completion of the part of the work in or on which such materials, tools, and equipment are incorporated or used; and c) to each of its subcontractors, not later than the fifth day following each payment to the Contractor, the respective amounts allowed the Contractor on account of the work performed by its subcontractors to the extent of each subcontractor's interest therein.

30. Assignments

The Contractor shall not assign the whole or any part of this Contract or any monies due or to become due hereunder without written consent of TUA. In case the Contractor assigns all or any part of the monies due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the

effect that it is agreed that the right of the assignee in and to any monies due or to become due to the Contractor shall be subject to prior claims of all persons, firms, and corporations for services rendered or materials supplied for the performance of the work called for in this Contract.

31. Mutual Responsibility of Contractors

If, through acts of neglect on the part of the Contractor, any other contractor or any subcontractor shall suffer loss or damage on the work, the Contractor agrees to settle with such other contractor or subcontractor by agreement or arbitration. If such other contractor or subcontractor shall assert any claim against TUA or its agents on account of any damage alleged to have been sustained, TUA shall notify the Contractor, who shall indemnify and save harmless TUA or its agents against any such claim.

32. Separate Contracts

The Contractor shall coordinate its operations with those of other contractors. Cooperation will be required in the arrangement for the storage of materials and in detailed execution of the work. The Contractor, including its subcontractors, shall keep informed of the progress and the detail work of other contractors and shall notify TUA immediately of lack of progress or defective workmanship on the part of other contractors. Failure of a Contractor to keep informed of the work progressing on the site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by it of the status of the work as being satisfactory for proper coordination with its own work.

33. Subcontracting

- a. The Contractor may utilize the services of specialty subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty subcontractors.
- b. The Contractor shall not award any work to any subcontractor without prior written approval of TUA, which approval will not be given until the contractor submits to TUA a written statement concerning the proposed award to the subcontractor, which statement shall contain such information as the Engineer may require.
- c. The Contractor shall be as fully responsible to TUA for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons it directly employs.
- d. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by

the terms of the General Conditions and other Contract Documents insofar as applicable to the work of subcontractors and to give the Contractor the same power as regards terminating any subcontract that TUA may exercise of the Contractor under any provision of the Contract Documents. The Contractor shall supply copies of Certification of Insurance for each subcontractor to TUA before allowing any work to begin. Each subcontractor shall possess insurance coverage to the same limits as is required by the Contractor.

- e. Nothing contained in this Contract shall create any contractual relation between any subcontractor and TUA.

34. Inspection of Work

TUA, its representatives, and any agencies participating in the project shall at all times have full access to the work and to all materials intended for use in the work, as well as to plants where such materials are produced and the Contractor shall provide proper facilities for such access and inspection. If the work should be covered up without the approval of TUA, it must, if directed by TUA, be uncovered at the Contractor's expense for examination.

35. Use of Premises and Removal of Debris

The Contractor expressly undertakes at his own expense:

- a) to take every precaution against injuries to persons or damage to property;
- b) to store its apparatus, materials, supplies, and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of this work or the work of any other contractors;
- c) to place upon the work or any part thereof only such loads as are consistent with the safety of that portion of the work;
- d) to clean up frequently all refuse, rubbish, scrap materials, and debris caused by its operations to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance;
- e) before final payment to remove all surplus material, false-work, temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from its operations, and to put the site in a neat orderly condition;
- f) to affect all cutting, fitting or patching of its work required to make the same to conform to the Plans and Specifications and, except with the consent of the Engineer, not to cut or otherwise alter the work of any other contractor.

36. Required Provisions Deemed Inserted

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

37. Protection of Lives and Health

In order to protect the lives and health of its employees under the Contract, the Contractor shall comply with all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc., and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under the Contract. The Contractor alone shall be responsible for the safety, efficiency and adequacy of its plant, appliances and methods, and for any damage which may result from their failure or their improper construction, maintenance, or operation. In addition to other requirements of the General Conditions, the Contractor shall comply with the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1979 (PL 91-596) and under Section 107 of the Contract Work Hours and Safety Standards Act. (PL 91-54).

38. Other Prohibited Interests

No official of TUA who is authorized in such capacity and on behalf of TUA to negotiate, make, accept, or approve, or to take part in negotiation, making, accepting, or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this Contract, or in any part hereof. No officer, employee, architect, attorney, engineer, or inspector of or for TUA who is authorized in such capacity and on behalf of TUA to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of this project, shall become directly or indirectly interested personally in this Contract or in any part thereof, any material supply contract, insurance contract, or any other contract pertaining to the project.

39. Use and Occupancy Prior to Acceptance by Owner

The Contractor agrees to the use and occupancy of a portion or unit of the project before formal acceptance by TUA, provided TUA:

- a) secures written consent of the Contractor except in the event, in the opinion of TUA, the Contractor is chargeable with unwarranted delay in final cleanup of correction (punch) list items or other contract requirements;
- b) secures endorsement from the insurance carrier and consent of the Surety permitting occupancy of the building or use of the project during the remaining period of construction; or
- c) when the project consists of more than one building, and one of the buildings is occupied, secures permanent fire and extended coverage insurance, including a permit to complete construction. Consent of the Surety must also be obtained.

In the case of contracts involving extensive water and/or sewer line systems, it is expressly agreed that, where practical, and to serve the public need, individual lines or sections of lines may be put into service as they are completed, tested and approved by the Engineer.

40. Suspension of Work

Should TUA be prevented or enjoined from proceeding with work or from authorizing its prosecution either before or after its prosecution, by reason of any litigation, the Contractor shall not be entitled to make or assert claims for damage by reason of said delay; but time for completion of the work will be extended to such reasonable time as TUA may determine will compensate for time lost by such delay, with such determination to be set forth in writing.

41. Cleaning Up and Removal of Rubbish

The Contractor shall at all times keep the premises free from accumulations of waste material or rubbish caused by its employees or work, and at the completion of the work it shall remove all its tools, scaffolding and surplus materials and shall leave its work in a clean and usable condition, satisfactory to TUA, unless more exactly specified. In case of dispute, TUA may remove the rubbish and charge the cost to the several contractors as the Engineer shall determine to be just.

The Contractor shall direct its forces to clean up streets, sidewalks, drainage channels or private property affected by its construction operations when, in the opinion of TUA, such cleanup is needed promptly.

The Contract shall not be considered complete until all construction structures and equipment and rubbish from construction are cleaned from the site of the work. All damage to existing paving, grounds and structures caused by the Contractor's operations must be repaired or owners compensated for such damage before Contract will be considered complete. This includes removal of rock from blasting and the broom sweeping or water removal of dirt from paving.

42. Correction of Work Before Final Payment

The Contractor shall promptly remove from the premises all materials condemned by the Engineer as failing to conform to the Contract, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute its own work in accordance with the Contract and without expense to TUA and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement. If the contractor does not remove such condemned work and materials within a reasonable time, fixed by written notice, TUA may remove them and may store the materials at the expense of the Contractor. If the Contractor does not pay the expense of such removal within ten days thereafter, TUA may, upon ten days written notice, sell such materials at auction or at private sale and shall account for the net proceeds thereof after deducting all the costs and expenses that should have been borne by the Contractor. The Surety shall be as fully responsible as the Contractor

43. General Warranty for One Year After Completion of Work by Contractor

For a period of at least one year after the final acceptance of the Contract by the Engineer, the Contractor warrants the fitness and soundness of all work done and materials and equipment put in place under the Contract and neither the final certificate of payment nor any provision in the Contract Documents nor partial or entire occupancy of the premises by TUA shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work and pay for any damage to other work resulting therefrom which shall appear within a period of one year from the date of final acceptance of the work unless a longer period is specified. TUA will give notice of observed defects with reasonable promptness.

44. Acceptance and Final Payment

Upon written notice by the Contractor that the work is ready for final inspection, TUA shall make such inspection within ten days and shall give the Contractor a correction (punch) list, if corrections are necessary.

When TUA finds the work acceptable under the Contract and the Contractor fully performed, it shall promptly provide letters with copies to the contractor and its Surety that the work under the Contract has been satisfactorily completed and is acceptable.

The balance due the Contractor, including the percentage retained during the construction period, will then be paid to the Contractor by TUA. This final payment will be made within sixty days after date of the Engineer's "Final Acceptance", and

said final payment shall evidence TUA's acceptance of work unless it is accepted in writing prior to said final payment.

Before issuance of the "Final Payment", the Contractor shall submit to TUA a final release as described in Paragraph 45 of these General Conditions.

In making final payment to the Contractor, all charges for liquidated damages or other charges, as are provided for in the Contract and these Specifications, that may be due TUA will be deducted.

45. Contractor's Final Release

Before TUA pays to the Contractor its final payment for the work, the Contractor will be required to sign a final release in the form of an affidavit acceptable to TUA's attorney. This final release shall be notarized and shall state that all claims against TUA on the Contractor's part have been met in full; it shall further state that the Contractor has satisfied all accounts for labor performed, accounts for materials, liens, judgments, and claims of every nature against it on account of the work. The final release shall further state that all materials and workmanship were performed and are in accordance with the Plans, Specifications, and approved change orders and shall reiterate the twelve months "guarantee" contained in Paragraph 43 herein before. It shall further state that any obligation whatsoever which may be presented or suits arising therefrom in connection with the work after the settlement is to be borne by the Contractor. In case the Contractor is unable to settle any claim that may be in dispute or litigation, TUA may allow it to furnish a proper bond to indemnify TUA against the lien and then release the final estimate to the Contractor.

46. Acceptance of Final Payment as Release

The acceptance by the Contractor of final payment shall be and shall operate as a release to TUA of all claims and all liability to the Contractor for all things done or furnished in connection with this work and for every act and neglect of TUA and others relating to or arising out of this work. No payment, however, final or otherwise, shall operate to release the Contractor or its Sureties from any obligations under this Contract or the Contract Bonds.

47. Reduction of Retainage

TUA may retain a portion of the amount otherwise due the Contractor. Except as provided in Subparagraph c) of this Section, the amount retained by TUA shall be limited to the following:

- a) Withholding of not more than five percent of the payment claimed;

- b) When the work is substantially complete (operational or beneficial occupancy), the withheld amount may be further reduced below five percent to only that amount necessary to assure completion.
- c) TUA may reinstate up to five percent withholding if TUA determines at its discretion that the Contractor is not making satisfactory progress or there is other specific cause for withholding.
- d) TUA may accept securities negotiable without recourse, condition or restrictions, as release of retainage bond, or an irrevocable letter of credit provided by the Contractor in lieu of all or part of the case retainage.

48. Funds Withheld Pending Expiration of Warranty

In order to ensure that defects occurring during the warranty period are promptly and properly corrected, TUA may withhold from the contractor's final estimate following final acceptance of the project and until the expiration of the one year warranty an amount not to exceed two percent (2%) of the contract price for the first \$100,000 and 1% for any amount over \$100,000. Where defects are known, the cost of repair of which can be ascertained to exceed the amount calculated by the foregoing formula, TUA may, upon written notice of the Engineer, withhold an amount sufficient to protect TUA. TUA or the Engineer will promptly notify the Contractor in writing of any observed defects. If such defects are not repaired within 15 days of receipt of written notice, unless the Contractor shall have requested and received a time extension from the Engineer, it shall be the prerogative of TUA to make the necessary repairs or have a third party make the repairs and utilize the withheld funds to pay for such repairs. If equipment or materials requiring delivery times longer than ten days are involved, the 15 day period will be extended by the Engineer upon receipt of a reasonable schedule for the repairs.

In emergency situations TUA may have to proceed with repairs of defects prior to notifying the Contractor, in which case TUA will account for any expenditures of the withheld funds.

Within 30 days prior to the expiration of the one-year warranty, after due notice to the Contractor, an on-site inspection will be held with representatives of TUA, Engineer and Contractor present. Any defects noted at that time or within the remaining period of the warranty shall be promptly repaired by the Contractor.

Within 30 days following the expiration of the warranty, TUA will release to the Contractor the withheld funds less the amount used by TUA to repair defects, if any. Accrued interest on the amount released to the Contractor will be paid.

SECTION 1

GENERAL SCOPE AND SPECIAL PROVISIONS

1. Scope of the Work

The work to be accomplished under these Specifications consists of the installation of approximately 5,800 lineal feet of 8 inch water main and 2,000 lineal feet of 6 inch water main, tie-ins to existing water mains, installation of erosion control items, and other related work. An existing water main will be abandoned in place.

2. Occupational Safety and Health Act

All work described under this Contract shall be done in strict compliance with the Occupational Safety and Health Act of 1970 (P.L. 91-596) under Section 107 of the Contract Work Hours and Safety Standards Act (P.L. 91-54) as currently amended. It is not the intention of these Specifications to conflict with these Acts in any way, and where conflicts arise, the Act shall govern.

TUA and/or Engineer shall not and will not be considered in charge of or responsible for acts of the Contractor(s), methods of construction, construction, construction progress, construction forces or equipment or safety procedures.

3. Execution and Coordination of the Work

It is intended that the work covered by this Contract be done so as to cause the minimum interference with the normal operations of the Tullahoma Utilities Authority. The Contractor will be required to organize and schedule its work so as to keep the existing facilities in full operation during the construction period insofar as is consistent with the nature of the construction work to be performed.

The manner in which shutdowns will be made and the Contractor's work schedule will be subject to the approval of TUA. Although every effort will be made to cause the minimum amount of interference with the Contractor's work, the interest of TUA in regard to the existing facilities must always take precedence over the work. Therefore, the right is reserved by TUA to put any lines or other facilities that may be shut down for the work back into service should an emergency arise.

4. Order of Work and Time of Completion

Work on all the project shall be prosecuted in a timely manner.

The Contractor will coordinate its work with TUA to minimize the time when the TUA's facilities are out of service.

The time for completion of the Contract is 250 calendar days and includes all work performed. Delays due to wet weather will not be counted in the 250 calendar days at the discretion of TUA.

5. Field Office

No field office will be required for this project. However, the Contractor must have a designated Superintendent on the job who can be reached by telephone and who can officially receive instructions from TUA. He shall check with the TUA daily for instructions or messages.

6. Work on Public and on or Adjacent to Private Property

In connection with work performed on public and on or adjacent to private property, the Contractor shall take every precaution to avoid damage to the property owner's buildings, grounds and facilities and shall be completely responsible for the repair of damage to same. When construction is completed, all facilities and grounds shall be restored to as good as or better than their original condition.

7. Permits, Codes, Agreements and/or Contracts with Private Utilities

The Contractor shall make application for, obtain and pay for all licenses, permits, agreements and/or contracts with private utility companies and shall pay all fees and charges in connection therewith.

8. Materials or Equipment to be Furnished

Where materials or equipment are specified by a trade or brand name, it is not the intention of TUA to discriminate against an equal product of another manufacturer, but rather to set a definite standard of quality or performance, and to establish an equal basis for the evaluation of bids. Where the words "equivalent", "proper" or "equal to" are used, they shall be understood to mean that the thing referred to shall be proper, the equivalent of, or equal to some other thing, in the opinion or judgment of TUA. Unless otherwise specified, all materials shall be the best of their respective kinds and shall be in all cases fully equal to approved samples. Even though the words "or equal to" or other such expressions may be used in these Specifications in connection with a material, manufactured article, or process, the material, article or process specifically designated shall be used, unless a substitute is approved in writing by TUA, and TUA shall have the right to require the use of such specifically designated material, article, or process.

9. Utilities Required by Contractor

All electric current and/or any utility service required by the Contractor shall be furnished at its own expense except as otherwise noted in these Specifications.

10. Testing

Testing shall be in accordance with the requirements these specifications.

11. Shop Drawings

Shop drawings, if required, shall be checked by the Contractor and evidence of such checking shall be indicated thereon. The contractor shall be completely responsible for accuracy, completeness, compliance with Plans and Specifications, and compatibility, TUA's approval notwithstanding. Two copies of all shop drawings shall be submitted.

12. Basis of Payment

The items listed in the Proposal constitute all of the pay items on the project. Any other items of work listed in the Specifications shall be incidental to the items listed in the Proposal.

Payments will be made on estimates as follows:

The Contractor will submit an estimate of the work performed at the end of the first month and payment will be made for the amount of the estimate less five percent of the estimated amount.

At the completion of the work, the full amount of the contract price less five percent will be paid.

The remaining five percent will be paid after the work has been found to be in accordance with the specifications and Contract Documents.

13. Guarantee

The Contractor shall guarantee all materials and work for a period of one year after acceptance of the project by TUA, and shall make, at its expense, any repairs or adjustments required during the guarantee period.

SECTION 2

PRODUCTS

1. Polyvinyl Chloride (PVC) Pipe

1. All plastic pressure pipe shall be made from Class 12454-B polyvinyl plastic PVC 1120) as defined by ASTM D1784.
2. All PVC pipe shall be Class 200 (SDR 21), Class 250 (SDR 17), or Class 315 (SDR 13.5) pipe, as indicated on the drawings. All PVC pipe shall have NSF approval and be manufactured in accordance with ASTM D2241, except that the following tests shall be run at least once each hour per machine on each size and type of pipe being produced.
 - a. Flattening Test: A specimen at least 2" long shall be flattened between moving parallel plates in a suitable press until the opposite inside surface touch and 100% flattening has occurred. The rate of loading shall be uniform and such that the compression (100% flattening) is complete within 2 to 3 minutes. Upon completion of the test, the specimen shall not be split, cracked, or broken.
 - b. Extrusion Quality Test: The method of testing shall be in accordance with ASTM D2152. There shall be no flaking, peeling, cracking, or visible deterioration on the inside or outside surface after completion of the tests.
 - c. Quick Burst Test: This test shall be performed in accordance with ASTM D1599. The PVC pipe specimen shall be pressurized to burst between 60 and 70 seconds. The burst pressure must exceed the minimum burst pressure requirements given below:

Minimum Bursting		
<u>SDR</u>	<u>Pressure Rating</u>	<u>Pressure, psi</u>
13.5	315	1,200
17	250	1,000
21	200	800
 - d. Impact Test: All SDR 13.5 to 21 (315 to 200 pound pressure rated) pipe shall be tested. The manufacturer shall also provide results of impact tests conducted.
3. If any specimen fails to meet any of the above mentioned tests, all pipe of that size and type manufactured between the test periods must be scrapped.

4. The pipe manufacturer shall furnish a certificate stating that he is fully competent to manufacture PVC pipe of uniform texture and strength and in full compliance with these specifications and further stating that he has manufactured such pipe and done so in sufficient quantities to be certain that it will meet all normal field conditions. In addition, the manufacturer's equipment and quality control facilities must be ensure that each extrusion of pipe is uniform in texture, dimensions, and strength. The manufacturer shall also certify that the pipe furnished for this project meets the requirements of these specifications.
5. All pipe shall be manufactured in the United States of America. All pipe for any one project shall be made by the same manufacturer.
6. All 6" and larger pipe shall be furnished in 20' lengths. The storing and handling of the pipe shall be done in a manner acceptable to TUA. All pipe shall be supported within 5' of each end; in between the end supports, there shall be another additional support. The pipe shall be stored away from heat or direct sunlight. The practice of stringing pipe out along the proposed water line routes will not be allowed.
7. Certain information shall be applied to each piece of pipe. At the least, this shall consist of:
 - a. Nominal size
 - b. Type of material
 - c. SDR or class
 - d. Manufacturer
 - e. NSF Seal of Approval
8. Pipe that fails to comply with the requirements set forth in these specifications shall be rejected.
9. The pipe shall have push-on joints designed with grooves in which continuous molded rubber ring gaskets can be placed and shall conform to ASTM D3139. Gaskets shall be made of vulcanized natural or synthetic rubber; no reclaimed rubber will be allowed. The gaskets shall be of the manufacturer's standard design dimensions and of such size and shape as to provide a positive seal under all combinations of joint and gasket tolerance. The gasket and annular groove shall be designed and shaped to that when the joint is assembled, the gasket will be radically compressed to the pipe and locked in place against displacement, thus forming a positive seal.
10. The spigot end of each pipe shall be beveled so that it can be easily inserted into the gasket joint, which in turn shall be designed so that the spigot end may move in the socket as the pipe expands or contracts. The spigot end shall be striped to indicate the distance into which it should be inserted into

the socket. Each joint shall be able to accommodate the thermal expansions and contractions experienced with a temperature shift of at least 75 degrees F.

11. Enough lubricant shall be furnished with each order to provide a coat on the spigot end of each pipe. This lubricant shall be non-toxic, impart no taste or smell to the water, have no harmful effect on the gasket or pipe material, and support no bacterial growth. The lubricant containers shall be labeled with the manufacturer's name.
12. Joints shall be either integral bell and ring joints with rubber compression gaskets as manufactured by the Clow Corporation, twin gasket couplings as manufactured by the Certain-Teed-Products Corporation, gaskets as manufactured by John-Manville, or equal. However, the pipe and bell must be made by the same manufacturer.

2. Ductile Iron Fittings

1. Fittings: Ductile iron fittings shall conform to the requirements of the American Standard Specifications, ANSI A21.10/AWWA C110, Ductile-iron and Gray-iron Fittings, 3-inch through 48-inch for Water and Other Liquids, latest revision. Standard mechanical joint fittings shall be used. The gaskets shall be the proper kind for attachment with the type of pipe being used.
2. Coatings and Linings: All ductile iron fittings shall be given an outside bituminous coating, as stipulated in the ANSI specifications referred to above. Fittings shall be lined with Enameline or a thin cement lining in accordance with American National Standard ANSI A21.4/AWWA C104, latest revision. In addition, a bituminous seal coat or asphalt emulsion spray coat approximately 1 mil thick shall be applied to the cement lining in accordance with the pipe manufacturer's standard practices.

3. Valves and Accessories

1. Resilient Seat Gate Valves:
 - a. Resilient seat gate valves shall have a full opening equal to the size of the pipe on which they are installed and shall open by turning counterclockwise.
 - b. Resilient seat gate valves shall be iron body, machined surface, modified wedge disc, resilient rubber seat type valves. Resilient seat gate valves shall have the bronze stem nut cast integrally with the cast iron valve disc. The valve shall have machined seating surface and

capable of being installed and operated in either direction. Valves shall be furnished with mechanical joint ends in accordance with USA Standard A21.11 unless otherwise shown or directed.

- c. All valves installed below ground shall be non-rising stem type with two-inch square operating nut, marked to indicate the direction of opening. All underground valves which have nuts deeper than 30 inches below the valve box top shall have extended stems with nuts located within one foot of the valve box cap. All valves installed above ground shall be outside stem and yoke (OS&Y) type equipped with hand wheel for manual operation, marked to indicate the direction of opening.
- d. Valves shall be for working pressure up to 200 psi and shall be equal to latest specifications of AWWA C509 in all respects.
- e. Valves shall be suitable for installation in the vertical position in buried pipe lines. Stem shall consist of O-ring seals. Valves shall be manufactured by Mueller or equal.

2. Cutting-In Sleeve and Valves:

Cutting-In sleeve shall be Mueller H-840, M & H or approved equal, and the gate valves shall be Mueller H-862, M & H, or approved equal.

3. Tapping Sleeve and Valves:

Tapping sleeves and valves shall consist of Mueller H-304 stainless steel tapping sleeve, or approved equal, and Mueller T-2360 or M & H tapping valve, or approved equal.

4. Valve Box Frames, Covers and Collars

Valve Box frames and covers shall be made of cast iron and shall meet the requirements of ASTM A-48, Class 30.

All castings shall be made accurately to the required dimensions and shall be sound, smooth, clear and free of blemishes or other defects. Defective castings which have been plugged or otherwise treated to remedy defects shall be rejected. Contact surfaces of frames and covers shall be machined so that the covers rest securely in the frames with no rocking or movement. The cover shall be in contact with the frame for the entire perimeter of the contact surface.

The valve box frames and covers shall be as manufactured by John Bouchard and Sons Company, Nashville, Tennessee, No. 8004 Roadway Type, or approved equal. The cover shall be marked "WATER".

A minimum 2-foot square concrete collar shall be placed around the top of the valve box in non-paved areas to provide support of the box. The collar shall be a minimum of 4-inches thick and sloped to drain away from the box. If there is an annular space between the collar and the valve box it must be grouted.

5. Fire Hydrants

Fire hydrants shall be three-way, cast iron body, of the dry head, breakable traffic type with breakable safety flange at the ground line, shall have a working pressure of 250 pounds per square inch, and shall meet AWWA C502 Specifications for Fire Hydrants, of latest revision.

Threads on nozzles and operating nut, and direction of operation shall match existing hydrants in the City of Tullahoma. The main valve of the hydrant shall have a full opening of at least five and one-fourth inches (5-1/4") and the hydrant drain shall operate with the main valve. Fire hydrants shall have a 42-inch bury, bronze to bronze seating, a penta operating nut with one and one-half inch (1-1/2") point to flat and a mechanical joint shoe that incorporates a check valve located inside the hydrant inlet, allowing normal operation and access to the hydrant valve through the bonnet or ground flange. The check valve shall have a fabric and steel reinforced elastomeric flapper and be designed for full flow.

An integral four-inch Storz connector with a Knox® Storzguard cap shall replace the pumper nozzle.

Fire hydrants shall be Mueller® Super Centurion 250/HS High Security Model A-423 and shall be yellow in color.

6. Services

1. Main Connections: All tapping of mains shall be done in the upper half of the pipe and approximately at a 45° angle from the vertical. Tapping saddles shall be used for all taps on PVC pipe.
2. Materials for Service Connections: All corporation cocks, fittings, and curb cocks shall be made of brass. The following items shall be as hereinafter described:
 - a. Corporation stop with Mueller thread inlet and compression outlet -- Ford, Mueller, or equal.

- b. Tapping saddles, bronze.
 - c. Meter yoke, 5/8" x 3/4" - Ford 70 Series Coppersetter VB72-7W-41-33 or approved equal.
 - d. Meter yoke, 1" – Ford 70 Series Coppersetter VB74-10W-41-44 or approved equal.
 - e. Meter yoke, 2" – with bypass, Ford Coppersetter VBB77-15B-11-77 or approved equal.
3. Crosslinked Polyethylene (PEX) Water Service Tubing: Service line tubing shall be Rehau Municipex® crosslinked polyethylene (PEX) tubing, or approved equal. The tubing must meet or exceed the requirements of ASTM F876, F877, CSA B137.5 and PPI TR-3, and be certified to NSF Standards 14/61 and AWWA C904. The tubing shall meet the requirements of ASTM F2023 for chlorine resistance.

The tubing shall be produced in SDR 9 copper tube sizes allowing it to connect to standard compression-joint brass valves and fittings using inserts (required) per the recommendation of the fitting manufacturer.

7. Identification Tape and Detection Wire

The identification tape shall be metalized to allow location by a metal detecting device. The tape shall be color coded and labeled to identify the line as a water line. Tape shall be at least six inches wide and shall be as manufactured by Alarmtape, Allen Systems, or an equal approved by TUA. Detection wire shall be a 14 gauge insulated copper wire commonly called "bell wire".

SECTION 3
CONSTRUCTION

1. Inspection of Materials:

A careful field inspection shall be made of all material before installation, and any material found to be damaged in shipment or not meeting the requirements of the specifications will be rejected and replaced.

2. Alignment and Grade:

- a) All pipe shall be laid and maintained to the required lines and grades. Fittings, valves, and hydrants shall be at the required locations and with joints centered, spigots home, and all valves and hydrant stems plumb.
- b) Temporary support and adequate protection and maintenance of all underground and surface utility structures, drains, sewers, and other obstructions encountered in the progress of the work shall be furnished by the contractor.
- c) Where the grade or alignment of the pipe is obstructed by existing utility structures such as conduits, ducts, pipes, branch connections to main, or main drains, the obstruction shall be permanently supported, relocated, removed, or reconstructed by the contractor in cooperation with owners of such utility structures. The layout of the proposed line may be moved to allow for a better alignment, depending on field conditions.
- d) All pipe shall be laid to the depth shown on the contract drawings or as required by the Engineer in writing. The depth shall be measured from the established street grade or the surface of the permanent improvement to the top of the pipe barrel. This depth of cover shall not be less than thirty inches (30").

3. Excavation of Trench

- a) The trench shall be dug to the required alignment and depth shown on the contract drawings and/or as specified above only so far in advance of pipe laying as TUA shall permit. The trench shall be braced and drained when necessary, so that workmen may work therein safely and efficiently.
- b) The trench width at the ground surface may vary with, and depend upon, its depth and the nature of the ground encountered. The minimum clear width of unsheeted or sheeted trench measured at the horizontal diameter of the pipe shall be 18 inches, or one foot greater than the outside diameter of the barrel of the pipe, whichever is greater. The maximum clear width of trench at the top of the pipe shall be not more than the outside diameter of the barrel of the pipe plus two feet.

- c) The pipe shall be laid on firm soil, cut true and even to afford bearing for the full length of the barrel of the pipe, or on earth mounds.
- d) Any part of the trench excavated below grade shall be corrected with thoroughly compacted material approved by TUA.
- e) When an unstable sub-grade condition is encountered, an additional depth shall be excavated and refilled to pipe foundation grade with crushed stone or other suitable material as required to achieve a satisfactory trench bottom.
- f) Ledge rock, boulders, and large stones shall be removed to provide clearance to each side of, and below, all pipe and accessories. This clearance for pipe and accessories shall be six inches.
- g) Excavations below sub-grade in rock or in boulders shall be refilled to sub-grade with material approved and thoroughly compacted.
- h) Wherever necessary to prevent caving, trench excavations in soils such as sand, gravel, and sandy soil shall be adequately sheeted and braced. Where sheeting and bracing are used, the trench width shall not be less than that specified above. As backfill is placed, if sheeting is to be withdrawn, it shall be withdrawn in increments not to exceed one foot, and the void left by the withdraw sheeting shall be filled and compacted.
- i) All excavated materials shall be piled in a manner that will not endanger the work and will avoid obstructing sidewalks and driveways. Gutters shall be kept clear or other satisfactory provisions made for street drainage.
- j) The use of trench-digging machinery will be permitted except where its operations will cause damage to trees, buildings, or existing structures above or below the ground. At such locations, methods by hand shall be employed to avoid such damage.
- k) To protect persons from injury and to avoid property damage, adequate barricades, construction signs, torches, warning lights and guards as required shall be placed and maintained during the progress of the construction work and until it is safe for traffic use. Whenever required, watchmen shall be provided to prevent accidents. Rules and regulations of the local authorities regarding safety provisions shall be observed.
- l) Excavations for pipe laying operations shall be conducted to cause the least interruption to traffic: Hydrants under pressure, valve-pit covers, valve boxes, curb-stop boxes, fire or police call boxes, or other utility controls shall be unobstructed and accessible during the construction period.

- m) Adequate provisions shall be made for the flow in sewers, drains, and water courses encountered during construction. The structures which may have been disturbed shall be satisfactorily restored.

4. Preparation of Trench Bottom:

- a) Pipe shall be laid directly on a trench bottom containing coupling holes so as to provide a continuous contact with the pipe between coupling holes.
- b) Coupling Holes: Prior to lowering pipe into the trench, a coupling hole shall be dug in the trench bottom having a length, width, and depth to allow assembly and to maintain a minimum clearance of two inches (2") between coupling and undisturbed trench bottom.
- c) Shaping Trench Bottom: Prior to lowering pipe into the trench, the trench bottom between coupling holes shall be made flat and cut true and even to grade so as to provide continuous contact of the trench bottom with the pipe.
- d) Crushed stone will be required, at TUA's discretion, as bedding and above the pipe in areas where rocky soils exist. This does not preclude the requirement for proper excavation of trenches.

5. Lowering Pipe and Accessories into Trench:

- a) All pipe, fittings, valves, hydrants, and accessories shall be carefully lowered into the trench using suitable equipment in such a manner as to prevent damage to pipe and fittings. Under no circumstances shall pipe or accessories be dropped or dumped into the trench.
- b) The pipe and accessories shall be inspected for defects prior to lowering into trench. Any defective, damaged, or unsound material shall be repaired or replaced.
- c) All foreign matter or dirt shall be removed from the interior of pipe before lowering into position in the trench. Pipe shall be kept clean.

6. Installation of Pipe:

- a. The interiors of pipes, fittings and valves shall be protected from contamination. The pipe delivered for construction shall be strung so as to minimize the entrance of foreign material. If dirt enters the pipe, it shall be removed and the interior pipe surface swabbed with a 1 or 5 percent hypochlorite solution. The new water main must be isolated from the active water distribution system until bacteriological tests are satisfactorily completed.

- b. After a length of pipe has been placed in the trench with the spigot end forced home in the bell of the adjacent pipe, it shall be brought to the correct line and grade, and secured in place by tamping an approved backfill material around it.
- c. Whenever pipe-laying is not in progress, the open ends of pipe shall be closed either with a watertight plug or by other approved means. If there is water in a trench, this seal shall be left in place until the trench has been pumped completely dry.
- d. The pipe shall be cut so that valves, fittings, or closure pieces can be inserted in a neat and workmanlike manner and without any damage to the pipe. The manufacturer's recommendation shall be followed concerning how to cut and machine the ends of the pipe in order to leave a smooth end at right angles to the pipe's axis.
- e. Properly restrained bends shall be used for all major alignment changes. Joint deflections shall only be used for minor alignment changes necessary to avoid obstructions. Long radius curves by joint deflection shall only be used if approved by the TUA. In any event, joint deflectors shall not exceed manufacturer's recommendations, or that necessary for the joint to be satisfactorily made.
- f. No pipe shall be laid in water or when trench conditions are unsuitable. If crushed stone is used to improve trench conditions or as backfill for bedding the pipe, its use is considered incidental to the project, and no separate payment will be made for its use.
- g. Where a water line crosses over a sanitary sewer, a full length of pipe shall be used with its joints straddling the sewer. Where a water line is to be parallel to a sanitary or storm sewer, it shall be laid at least 10' from the sewer. If it is not practical for the water and sewer lines to be separated as described above, the water line shall be laid at least 18" above the top of the sewer.
- h. All pipe shall be joined in the exact manner specified by the manufacturer of the pipe and jointing materials.

7. Installing Pipe by Jacking and Boring Method:

Where water mains and laterals (except service lines) are to be installed in paved streets, roadways, sidewalks, etc., and it is undesirable to install pipe under this surface by means of an open cut trench, the contractor will install this pipe by jacking and boring.

8. Installing Identification Tape and Detection Wire:

A metalized identification tape shall be installed over the pipe and within one foot of finished grade.

A detection wire shall be installed with the pipe at the trench bottom. Wire shall be stubbed up at each valve location and left accessible inside the valve box. The wire shall form a continuous loop in the water system.

9. Thrust Blocks:

All reducers, caps, tees, eighth bends or greater, and such parts of the pipe work that will have a tendency to draw away or separate, shall be secured firmly by concrete thrust blocks poured as detailed on the plans or as directed by TUA.

10. Blow-Offs on Dead End Lines:

The contractor shall install a two-inch (2") blow-off on the end of each dead end line, except where fire hydrants are installed, to facilitate filling, sterilizing, and blowing-off of lines, both during construction and system operation.

11. Setting Hydrants:

- a. Hydrants shall be lowered into the trench, inspected, cleaned and connected to pipe, and reaction or thrust blocks provided as specified herein for installation of water mains, laterals and fittings.
- b. Each hydrant shall be connected to the main with a six-inch (6") pipe branch controlled by an independent six-inch (6") gate valve. Lengths of pipe and use of couplings between main and valve and hydrant shall be as shown on the drawings.
- c. Whenever hydrants are set in soil classified as impervious, a drainage pit two feet in diameter and two feet deep shall be excavated below each hydrant. The pit shall be filled compactly with coarse gravel or broken stone mixed with coarse sand, under and around the bowl of the hydrant to a level six inches (6") above the waste opening. No hydrant drainage pit shall be connected to a sewer.
- d. A reaction or thrust backing shall be provided at the bowl of each hydrant and shall be so placed as not to obstruct the drainage outlet of the hydrant, or the bowl of the hydrant shall be tied to the pipe main with rods.
- e. Hydrants shall be thoroughly cleaned of dirt or other foreign matter before setting.
- f. Hydrants shall be painted after installation with industrial quality paint. The barrel of the hydrant will be recoated with yellow paint and the bonnet color will be coated with a color specified by TUA.

12. Disinfection Procedures for New Water Mains

Calcium hypochlorite (HTH) granules that have been certified by the National Sanitation Foundation shall be used to disinfect newly installed water lines. The HTH granules shall be placed at the upstream end of the first section of pipe, at the upstream end of each branch main, at fire hydrant laterals and at 500 feet intervals of the new water system. The information in the table shown below lists the proper quantity of HTH for varying sizes of water mains.

<u>Pipe Diameter (in.)</u>	<u>Amount of Calcium Hypochlorite Granules (oz.)</u>
4	1.7
6	3.8
8	6.7
12	10.5
14 and larger	$D^2 \times 15.1$

(D is the inside diameter in feet)

TUA's water disinfection procedures that have been approved by TDEC DWR shall be used in cases in which water lines have been cut into whether by accident or design. TUA shall be made aware of any incidence of this type. The proper paperwork to record the disinfection procedures used shall be completed and filed by TUA.

13. Filling New Water Mains:

1. When the installation has been completed, the new water mains shall be filled so that the water in the mains has a velocity no greater than 1.0 ft/sec. The valves shall be manipulated so the highly chlorinated water will not flow back into the line that is supplying the water. Only TUA employees are allowed to operate the valves used to fill the new mains.
2. All air pockets must be eliminated. If fire hydrants or blow-off hydrants are not available at high points in the mains, the pipe shall be tapped at high points to vent the air.
3. The chlorinated water shall be retained in the lines for at least 24 hours, during which time all valves and hydrants in the line being treated shall be operated so that appurtenances can also be disinfected. After 24 hours, the treated water shall have a detectable free chlorine residual throughout the system.
4. After the applicable retention period, heavily chlorinated water should not remain in prolonged contact with the pipe. If there is high chlorine residual in the water, the water mains and laterals shall be flushed until the chlorine

residual level in the new lines is no higher than the level normally found in the water distribution system.

14. Backfilling Trenches:

Backfilling of trenches shall be performed in accordance with ANSI/AWWA C600, latest revision. All materials used for backfill must be approved by TUA.

15. Cleaning Up:

All excess excavated material, rubbish, and debris from adjacent street surfaces, gutters, sidewalks, parking areas, grass plots, etc., shall be removed and the project as a whole shall be left in a neat and acceptable condition.

16. Backfill and Repair of Street Cuts:

All cuts made in streets or other roadways shall be backfilled and repaired in a manner that meets all applicable local, State and/or Federal requirements.

Permits are required prior to all excavations made in any street, curb, alley, or public right-of-way, or tunnels under any street, curb, or public right-of-way before any work is initiated. Permits are to be obtained through the City of Tullahoma Public Works Department. All fees related to such permits shall be included in the per foot cost of the water line installation.

SECTION 4

TESTING AND ACCEPTANCE

1. Testing Water Distribution System:

1. The contractor shall provide all necessary equipment, gauges, labor tools, and services, and shall perform all work required in connection with testing water mains, laterals, and service lines. A representative of TUA must be present to witness the tests.
2. The contractor shall perform all pressure and leakage tests before backfilling the trenches.
 - a. Pressure Test:
 - i. Before TUA shall accept any water lines, these lines or each valved section shall be tested at a hydrostatic pressure of at least 150 pounds per square inch. In low areas of the system where the working pressure plus 50 percent (50%) of this working pressure exceed 150 pounds per square inch, the lines (in the low areas) shall be tested at the working pressure plus 50 percent (50%) of this working pressure.
 - ii. The duration of each pressure test shall be at least one hour.
 - iii. The specified test pressure (based on the elevation of the lowest point of the line or section under test and corrected to the elevation of the test gauge) shall be applied with a pump connected to the pipe.
 - iv. All exposed pipes, fittings, valves, and hydrants shall be carefully examined during the test. Any cracked or defective pipes, fittings, valves, or hydrants discovered in consequences of this pressure test shall be removed and replaced with sound material in the manner specified. Repeat the test until the results are satisfactory.
 - b. Leakage Test:
 - i. The leakage test shall be conducted after the pressure test has been satisfactorily completed.
 - ii. The duration of each leakage test shall be 2 hours.

- iii. During the test, the main shall be subjected to a pressure of 150 pounds per square inch.
- iv. Leakage is defined as the amount of water which must be supplied to the newly laid pipe or any valved section in order to maintain the specified leakage test pressure after the pipe has been filled with water and the air expelled.
- v. No pipe installation will be accepted until the leakage per 2-hour period is less than the number of gallons listed below:

Pipe Sizes	Gallons per 1,000 Feet of Pipe
2-1/4" and smaller	0.2
3"	0.5
4"	0.6
6"	0.9
8"	1.2
10"	1.5
12"	1.9
14"	2.2
16"	2.6
18"	2.9
20"	3.2
24"	3.8

- vi. For pressures exceeding the minimum of 150 pounds per square inch during the test period, the allowable leakage shall be based upon the following formula:

$$L = \frac{ND\sqrt{P}}{7400}$$

Where L = allowable leakage in gallons per hour
N = number of joints in length of pipe line tested
D = nominal diameter of pipe in inches
P = average test pressure during the leakage test in pounds per square inch.

- vii. Should any test of pipe laid disclose leakage greater than that specified, the defective joints shall be located and repaired until the leakage is within the specified allowance.

3. If water mains have previously been tested and the water system has not been utilized for a period of time to be specified by TUA, TUA, at its discretion, may require the contractor to retest the system.

2. Bacteriological Tests:

1. After a potable water line has undergone final flushing, following the disinfection but before it is placed into service, two consecutive sets of acceptable samples, taken 24 hours apart, shall be collected for bacteriological testing for every 1200 feet of pipe and at the end of each water main and lateral (not including fire hydrant laterals). All samples must pass the bacteriological testing before the lines are put into service
2. The samples will be collected by TUA personnel and taken to the DRUC laboratory to be tested for bacteriological quality in order to determine if they contain any bacteriological organisms. If the initial disinfection fails to produce satisfactory samples, disinfection shall be repeated until satisfactory samples are obtained.
3. When the samples tested are found to be satisfactory, the water lines may be placed in service.
4. If water mains have previously been sampled and passed bacteriological testing but the water system has not been utilized for a period of time to be specified by the Tullahoma Utilities, new bacteriological samples will be collected and tested. If the samples fail to pass the bacteriological testing TUA, at its discretion, may require the contractor to re-disinfect the water mains.

SECTION 5

MEASUREMENT AND PAYMENT

The Contractor shall furnish all labor, tools, equipment and materials to construct the proposed improvements complete as shown on the Drawings and described in these specifications. The work shall be measured for payment in accordance with applicable provisions of these specifications and payment shall be made on the basis of the unit prices or lump sum prices bid. The sum of payments for eligible pay items contained in the Proposal form shall be the compensation to be paid for the completed project; provided however, that changes in the work covered by written change orders, properly executed, may result in additions or deductions from the contract price.

The Contractor's attention is called to the fact that although the pay items shown shall be the basis for establishing the contract price, the description of the pay items do not necessarily reflect the extent of the work to be performed. The cost of incidental work such as clearing and grubbing, trenching, backfilling, testing curbs, curbs and gutters, sidewalks, etc. which is necessary but which is not specifically listed as one of the pay items, shall be included in the prices bid for the pay items to which the incidental work is most closely related.

PROPOSAL TO
TULLAHOMA UTILITIES AUTHORITY
TULLAHOMA, TENNESSEE

Full Name of Bidder _____

Business Address _____

Pursuant to and in compliance with the Advertisement for Bids and the Bidding Documents relating to construction of:

E. Lincoln Street Water Line Replacement Project

Including Addenda _____, _____, _____

The work to be accomplished under these Specifications consists of the installation of approximately 5,800 lineal feet of 8 inch PVC water main and 2,000 lineal feet of 6 inch PVC water main, fire hydrants, valves, tie-ins to existing water mains, erosion control items, and other related work. An existing water main will be abandoned in place. The cost of installing and maintaining erosion control items, permit fees, installing thrust blocks and restraint of valves and fittings shall be included in the unit prices for such work. TUA reserves the right to replace any or all water service lines with its own forces instead of allowing the contractor to replace them.

The contractor is responsible for the proper disinfection of the new water mains. TUA will obtain bacteriological samples. Temporary taps may be required to obtain samples at appropriate locations. The cost of these taps will be incidental to the work.

The undersigned, as bidder, having become thoroughly familiar with the terms and conditions of the bidding documents and with local conditions affecting the performance and cost of the proposed work at the place where the work is to be completed, and having inspected the site in all particulars, hereby proposes and agrees to fully perform the work within the stated time and in strict accordance with the bidding documents, including furnishing any and all labor and materials, and to do the work required to construct and complete said work in accordance with the bidding documents, for the following unit prices.

I. BID SCHEDULE

<u>Unit Price Construction Items for Water Mains</u>	<u>Est. Quantity</u>	<u>Unit</u>	<u>Price Per Unit</u>	<u>Total</u>
1. 8" Class 200 PVC water main with 6" detection tape and trace wire, outside roadway, including erosion control items	5,100	LF		
2. 6" Class 200 PVC water main with 6" detection tape and trace wire, outside roadway, including erosion control items	1800	LF		
3. 8" Class 200 PVC water main with 6" detection tape and trace wire, under roadway, including erosion control items	100	LF		
4. 6" Class 200 PVC water main with 6" detection tape and trace wire, under roadway, including erosion control items	200	LF		
5. 8" Class 200 PVC water main with 6" detection tape and trace wire, under roadway, paved driveway, or sidewalk by jack and bore method	900	LF		
6. 6" Class 200 PVC water main with 6" detection tape and trace wire, under roadway, paved driveway, or sidewalk by jack and bore method	500	LF		
7. 8" Class 52 Ductile Iron water with concrete encasement in stream	60	LF		
8. 8" Resilient seat gate valve (restrained) including valve box and 2' square concrete collar	4	EA		
9. 6" Resilient seat gate valve (restrained) including valve box and 2' square concrete collar	3	EA		
10. Fire hydrant assembly including connection to new water mains, valves, & thrust blocks	15	EA		
11. New 3/4"-1 service tap on new water main including service saddle, corp stop, and reconnection to service line; as ordered by TUA	75	EA		
12. 3/4"-1" Pex water service line including trace wire using TUA approved fittings, outside and under roadway; as ordered by TUA	1000	LF		
13. New 2" Pex service tap on new water main including service saddle, 2" gate valve and reconnection to existing service line; as ordered by TUA	1	EA		

14. New 2" air release valve, with service saddle, as ordered by TUA	3	EA		
15. Topsoil and seeding of trenches	6500	LF		
16. Pavement replacement for streets, driveways, & parking lots	600	LF		
17. Cut and cap existing 6" water main, including thrust block	15	EA		
18. Crushed stone backfill for driveways, under cuts	60	CY		
19. Class C concrete for cradle, blocking, & encasement	20	CY		
20. Miscellaneous DIP/CI fittings	2000	LB		
21. Connection of new 8" water main to existing 6" water main with 8" x 6" tee, 6"x6" tapping sleeve and valve, with valve box and collar, trust block, etc.	8	EA		
22. Connection of new 6" water main to existing 6" water main with 6" x 6" tee, 6"x6" tapping sleeve and valve, with valve box and collar, trust block, etc.	4	EA		
23. Connection of new 8" water main to existing 6" water mains with 6" x 6" tapping sleeve and valve, and 6"x8" increaser, with tee, valve box and collar, trust block, etc.	1	EA		
24. Removal of existing fire hydrants and delivered to TUA storage yard	8	EA		
25. Concrete sidewalk replacement	20	LF		

BID SCHEDULE AMOUNT

TOTAL OF UNIT PRICE AND LUMP SUM FOR CONSTRUCTION OF WATER MAINS AND ASSOCIATED WORK

The sum of Items Number 1 through 25 is

_____ Dollars and _____ Cents
(in writing) (in writing)

BID AMOUNT \$ _____
(in figures)

II. **PROPOSAL CONDITIONS**

- A. It is expressly understood that quantities in the Bidding Schedule for Unit Price and Lump Sum Items are approximate only and that payment on a Contract will be made only on the actual quantities of work completed in place, measured on the basis defined in the Contract Conditions and the Contract Specifications.
- B. The undersigned has carefully checked the above Bidding Schedule against the Contract Drawings and Specifications before preparing this Proposal and accepts the said quantities to be substantially correct, both as to classification and amount, and as correctly listing the complete work to be done in accordance with the Contract Drawings and Specifications.
- C. If this proposal is accepted and the undersigned shall fail to contract as aforesaid, and to give the bond for faithful performance required by the General Conditions of Contract and by law, and to provide all insurance as required by the Contract Documents within fifteen (15) days after the date of the award of the Contract, the Tullahoma Utilities Authority, at its option, determined that the bidder has abandoned this contract and thereupon this Proposal and the acceptance thereof, shall be null and void, and the forfeiture of such security accompany this Proposal shall operate and the same shall be the Tullahoma Utilities Authority.

BID GUARANTY

Attached hereto is a certified check on the _____
Bank of _____
or a Bid Bond for the sum of _____ Dollars (\$ _____),
made payable to the Tullahoma Utilities Authority, Tullahoma, Tennessee.

Name of Bidder

Address of Bidder

BY: _____
(Signature)

(Printed Name)

(Title)

ATTEST: (For Corporations)

(Signature)

(Printed Name)

(Title)

BID BOND

KNOW ALL MEN BY THESE PRESENT, that we, the undersigned _____
_____ as Principal, and _____
as Surety, are hereby held and firmly bound into the Tullahoma Utilities Authority, Tullahoma, Tennessee
as Owner in the penal sum of _____ (\$____) for the for the payment
of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors,
administrators, successors and assignees.

Signed, this _____ day of _____, 2024.

The Condition of the above obligation is such that whereas the Principal has submitted to the Tullahoma
Utilities Authority a certain Bid, attached hereto and hereby made a part hereof, to enter into a contract in
writing made a part hereof for the E. Lincoln Street Water Line Replacement Project.

NOW THEREFORE,

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

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

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

PRINCIPAL

(Firm Name)

BY: _____
(Signature)

(Printed Name)

(Title)

ADDRESS:

SURETY

(Firm Name)

BY: _____
(Signature)

(Printed Name)

(Title)

LATEST RATING:

ADDRESS:

Countersigned:

(Signature)

ADDRESS:

NOTE: Copies of Powers-of-Attorney of both the Surety's Principal and Resident Agent are required and the amount of the bond must not be less than five percent of the amount of bid. Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

TIME OF COMMENCEMENT AND COMPLETION

The Bidder further proposes and agrees hereby to commence the work with adequate force and equipment on the date to be specified in a written work order of TUA, and complete all work within one hundred twenty (250) calendar days from and including said date.

LIQUIDATED DAMAGES

The Bidder further understands that, if the work is not completed within the time specified, liquidated damages will be deducted at Two Hundred Dollars (\$200.00) per calendar day from the compensation otherwise due it in accordance with the Contract Documents for each day thereafter, Sundays and holidays included, that the work remains uncompleted.

TIME LIMIT FOR EXECUTION OF DOCUMENTS

The undersigned further agrees that, in case of failure on its part to execute the said Contract, the check or bid bond accompanying this bid and the monies payable thereon shall be paid into the funds of the Tullahoma Utilities Authority, Tullahoma, Tennessee, as liquidated damages for such failure; otherwise, the check or bid bond accompanying this Proposal shall be returned to the undersigned.

CONTRACT

THIS AGREEMENT made and entered into this the ____ day of _____, 2024,
by and between _____
_____ hereinafter called the Contractor, and the Tullahoma Utilities Authority,
Tullahoma, Tennessee, hereinafter called TUA;

WITNESSETH:

1. Scope of the Work

The work to be accomplished under these Specifications consists of the installation of approximately 5800 lineal feet of 8 inch PVC water main, 2,000 lineal feet of 6 inch PVC water main, fire hydrants, valves, tie-ins to existing water mains, erosion control items, permit fees, and other related and approved work. An existing water main will be abandoned in place.

2. Time for Commencement and Completion.

The work under this Contract shall be prosecuted in a timely manner and shall commence upon written order of the Engineer and shall be constructed in such a manner that portions of the system can be placed into service as soon as possible. The time for completion of Contract after issuance of Notice to Proceed is 250 calendar days from and including the established date of commencement.

3. Payments

TUA agrees to pay the Contractor for the faithful performance of this Agreement, subject to additions and deductions as provided in the Specifications and Contract Documents in the lawful money of the United States, as follows: the full sum of

4. Current Estimates

Monthly, within ten days after receipt of the Contractor's approved estimate for work performed during the preceding calendar month, TUA shall make partial payments to the Contractor on the basis of said duly certified and approved estimate for work performed during the preceding calendar month by the contractor, less five percent of the amount of such estimate, which is to be retained by TUA until all work has been performed strictly in accordance with this Agreement and until such work has been accepted by TUA.

5. Final Estimate

Upon submission by the Contractor of evidence satisfactory to TUA that all payrolls, material bills, and other costs incurred by the Contractor in connection with the construction of the work have been paid in full, final payment on account of this Agreement shall be made within sixty days after the completion by the Contractor of all work covered by this Agreement, and the acceptance of such work by TUA.

6. Liquidated Damages

It is mutually agreed between the parties hereto that time is the essence of this Contract and, in the event the construction of the work is not completed within the time specified herein, it is agreed that from the compensation otherwise to be paid to the Contractor, TUA may retain Two Hundred Dollars (\$200.00) per day for each day thereafter, Sundays and holidays included, that the work remains uncompleted, which sum shall represent the actual damages which TUA will have sustained per day by failure of the contractor to complete the work within the time stipulated, and this sum is not a penalty, being the stipulated damage TUA will have sustained in event of such default by the Contractor.

7. Additional Bond

It is further mutually agreed between the parties hereto that if, at any time after the execution of this Agreement and the Surety Bonds hereto attached for its faithful performance, TUA shall deem the Surety or Sureties upon such bonds to be inadequate to cover the performance of the work, the Contractor shall, at its expense, within five days after the receipt of notice from TUA so to do, furnish an additional bond or bonds in such form and amount, and with such Surety or Sureties as shall be satisfactory to TUA. In such event, no further payment to the Contractor shall be deemed to be due under this Agreement until such new or additional security for the faithful performance of the work shall be furnished in manner and form satisfactory to TUA.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and date first above written in three counterparts, each of which shall, without proof or accounting for the other counterparts, be deemed an original Contract.

Contractor: _____

By: _____

Printed Name: _____

Title: _____

Date: _____

Witnesses:

Owner: **TULLAHOMA UTILITIES AUTHORITY**

By: _____

Printed Name: _____

Title: _____

Date: _____

Witnesses:

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENT: That I (we) _____
a _____ of _____, State of _____ hereinafter
called "Principal" and _____
a _____ of _____, State of _____ hereinafter
called the "Surety", are held and firmly bound unto the Tullahoma Utilities Authority
hereinafter called "Owner", in the penal sum of _____ Dollars _____
Cents, (\$ _____) in lawful money of the United States, for the payment of
which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators,
successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered
into a certain contract with TUA dated the _____ day of _____, 2024, a copy of
which is hereto attached and made a part hereof for the construction of:

The work to be accomplished under these Specifications consists of the installation of
approximately 5,800 lineal feet of 8 inch water main, 2,000 lineal feet of 6 inch water main,
tie-ins to existing water mains, erosion control items, and other related work. An existing water
main will be abandoned in place.

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

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

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

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one
of which shall be deemed an original, this, the _____ day of _____, 2024.

Principal

WITNESSES:

(Seal)

By:

Address:

Surety

RATING

WITNESSES:

By:

Attorney-in-Fact

COUNTERSIGNED:

Address:

Title

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENT: That we _____,
a _____ of _____ State of _____ hereinafter
called "Principal" and _____
a _____ of _____ State of _____ hereinafter
called the "Surety", are held and firmly bound unto the Tullahoma Utilities Authority,
hereinafter called "Owner", in the penal sum of _____ Dollars _____
Cents (\$ _____) in lawful money of the United States, for the payment of
which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators,
successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered
into a certain contract with TUA dated the _____ day of _____ 2024, a copy of
which is hereto attached and made a part hereof for the construction of:

The work to be accomplished under these Specifications consists of the installation of
approximately 5,800 feet lineal feet of 8 inch water main, 2,000 feet of 6 inch water main, tie-
ins to existing water mains, erosion control items and other related work. An existing water
main will be abandoned in place.

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

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

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

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of which shall be deemed an original, this the _____ day of _____, 2024.

Principal

WITNESSES:

(Seal)

By:

Address:

Surety

RATING

WITNESSES:

By:

Attorney-in-Fact

COUNTERSIGNED:

Address:

Title

TULLAHOMA UTILITIES AUTHORITY TULLAHOMA, TENNESSEE

E. LINCOLN STREET WATER MAIN REPLACEMENT

MARCH 2024

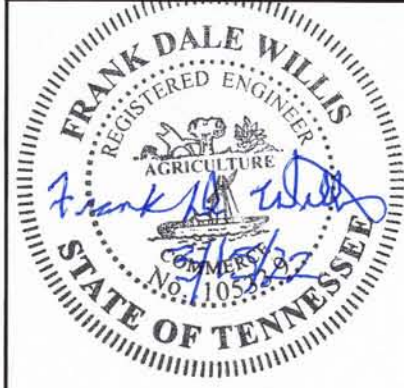




GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL SERVICE SADDLES, FITTINGS AND RECONNECT EXISTING SERVICES TO NEW WATER MAIN AS DIRECTED BY TUA. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE ESTABLISHED UNIT PRICE ITEMS FOR RECONNECTING SERVICES. TUA, AT ITS DISCRETION, MAY PERFORM PART OF THE WORK SUCH AS SERVICE LINE RECONNECTION, ETC. UNTIL NEW WATER MAIN HAS BEEN COMPLETED, TESTED AND PLACED IN SERVICE, THE CONTRACTOR SHALL MAINTAIN SERVICE ON THE EXISTING WATER MAIN AND WATER SERVICES TO CUSTOMERS SERVED BY THE EXISTING WATER MAIN.
2. ALL EXISTING WATER LINE SHUT-DOWNS, TIE-INS TESTING, AND DISINFECTION OF NEW WATER MAINS SHALL BE PREFORMED IN COMPLIANCE WITH ALL REGULATIONS AND REQUIREMENTS OF THE STATE OF TENNESSEE AND TUA.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL CONSTRUCTION TAPS OR CONNECTIONS REQUIRED FOR FILLING, FLUSHING, SAMPLING AND MAINTAINING WATER SERVICE IN THIS PROJECT. NO SEPARATE PAYMENT SHALL BE MADE. TUA SHALL CHARGE \$500 FOR EACH MAIN TAP IT MAKES THROUGH THE CONTRACTOR'S TAPPING SLEEVE AND VALVE.
4. ALL VALVES, FITTINGS, FIRE HYDRANTS, VALVE BOXES, ETC. REMOVED ON THIS PROJECT SHALL BE DELIVERED BY TO CONTRACTOR TO TUA'S STORAGE YARD UNLESS OTHERWISE DIRECTED BY TUA.
5. THE CONTRACTOR SHALL REPLACE ALL EXISTING WATER SERVICES TO THE EXISTING WATER METERS ON EACH SIDE OF THE STREET AS DIRECTED BY TUA.
6. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING TENNESSEE 811 PRIOR TO ANY EXCAVATION.
7. THE CONTRACTOR SHALL PROVIDE ADEQUATE SIGNS AND/OR BARRICADES REQUIRED TO PROVIDE SAFETY TO THE PUBLIC. TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS OF THE 'MANUAL OF UNIFORMED TRAFFIC CONTROL DEVICES' (MUTCO). OBTAIN NECESSARY LOCAL PERMITS. ALL COST FOR THESE ITEMS OF WORK WILL BE MERGED INTO UNIT PRICE CONSTRUCTION ITEMS.
8. THE EXISTING FIRE HYDRANTS THAT WILL BE REMOVED AT THE CONCLUSION OF THE PROJECT ARE TO REMAIN IN SERVICE UNTIL THE PROPOSED WATER MAINS AND NEW FIRE HYDRANTS HAVE BEEN INSTALLED, TESTED AND ARE IN SERVICE. THIS IS TO PROVIDE UNINTERRUPTED FIRE PROTECTION THROUGHOUT THE PROJECT AREA.
9. WATER LINES SHALL BE ENCASED IN CONCRETE WHERE THEY CROSS STREAMS AND DITCHES, UNDER CULVERTS, WHERE THE DEPTH OF COVER IS LESS THAN 30 INCHES IN OPEN AREAS AND 36 INCHES UNDER OPEN CUT ROADWAYS, OR AS DIRECTED BY TUA.
10. NO PORTION OF THE NEW WATER LINE SHALL BE CONNECTED TO EXISTING LINES OR PLACED IN SERVICE UNTIL THE NEW WORK HAS BEEN TESTED, SAMPLED, AND RETURNED NEGATIVE BACTERIOLOGICAL TESTS.
11. THE CONTRACTOR SHALL RESTORE ALL CULVERTS, FENCES, WALLS, PLANTS AND SHRUBBERY, PROPERTY PINS, LIGHT AND POWER POLES, STREET SIGNS, MAIL BOXES, WATER LINES, GAS LINES, WATER AND GAS METERS AND BOXES. THE COST OF THIS WORK SHALL BE MERGED INTO THE UNIT PRICES FOR THE WATER MAIN INSTALLATION.

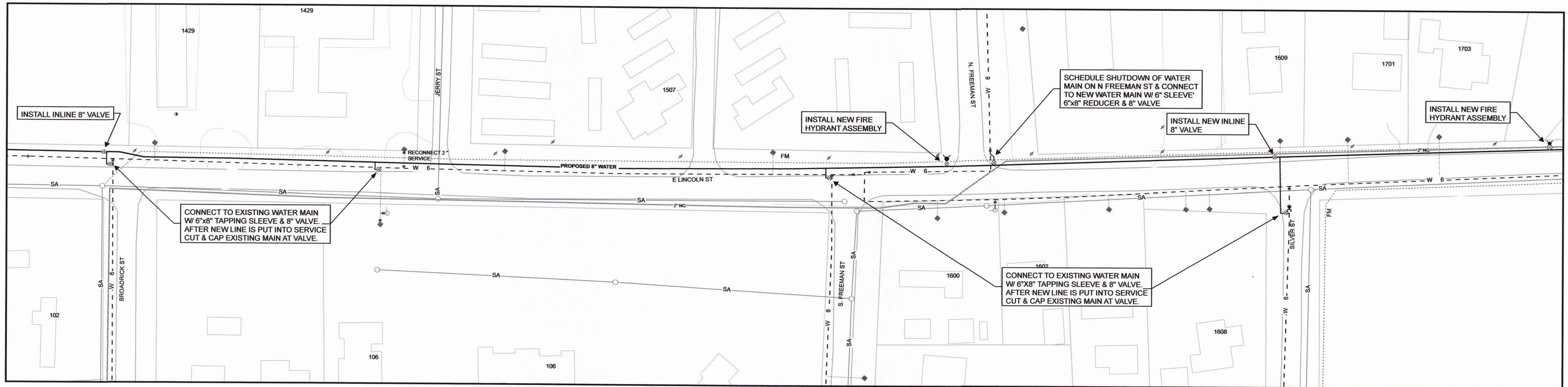
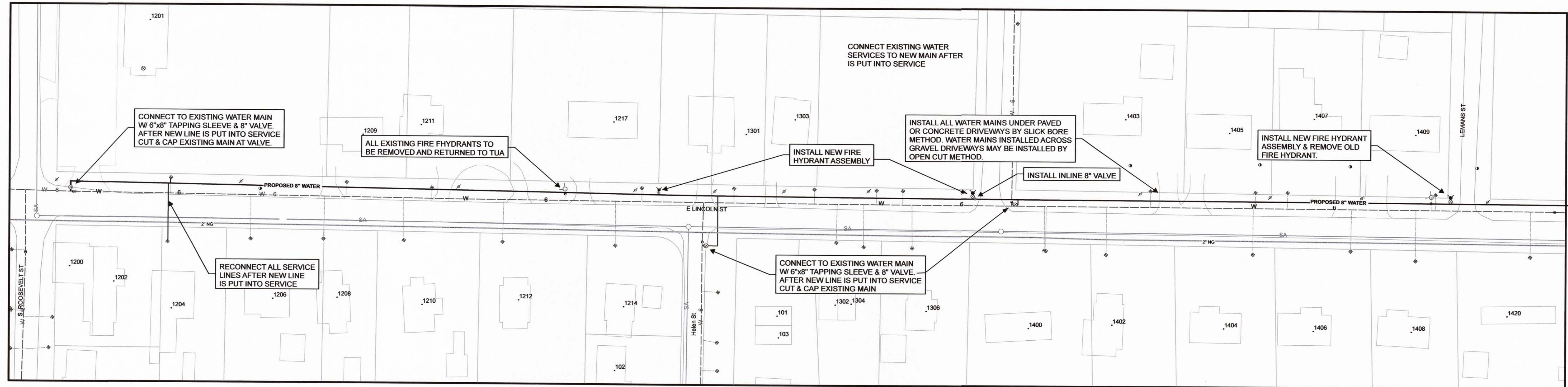
12. CONTRACTOR SHALL PROTECT AND RESTORE PROPERTY LOCATED IN EASEMENTS TO A CONDITION EQUAL TO OR BETTER THAN THAT EXISTING AT THE COMMENCEMENT OF CONSTRUCTION
13. THE CONTRACTOR SHALL OBTAIN ALL ADDITIONAL PERMITS FORM STATE AND/OR LOCATE ENTITIES TO CROSS ALL STREETS AND HIGHWAYS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MINOR GRADE AND/OR ALIGNMENT CHANGES NECESSARY TO CONSTRUCT THE PROPOSED WATER MAINS DUE TO CONFLICTS WITH EXISTING PIPE AND/OR UTILITIES ON OR ADJACENT TO THE SITE.
15. THE LOCATIONS AND SIZES OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK IN EACH AREA. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ALL DAMAGES THAT MIGHT OCCUR TO EXISTING UTILITIES.
16. ALL MATERIALS, CONSTRUCTION METHODS, TESTING AND WORKMANSHIP SHALL BE IN FULL COMPLIANCE WITH TUA'S SPECIFICATIONS, AWWA STANDARDS, AND THE STATE OF TENNESSEE REGULATIONS.
17. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO CONTROL EROSION AND WATER POLLUTION THROUGH THE CONSTRUCTION PERIOD INCLUDING THE ESTABLISHMENT OF GRASS ON THE DISTURBED AREAS.
18. PORTIONS OF THE PROPOSED WATER MAINS ARE TO BE CONSTRUCTED UNDER DRIVEWAYS, STREETS AND/OR PARKING LOTS. THE CONTRACTOR SHALL FURNISH AND PLACE COMPACTED CRUSHED STONE BACKFILL AT THESE LOCATIONS FROM THE WATER MAIN BEDDING TO THE ROADWAY SURFACE. ALL COSTS ASSOCIATED WITH CRUSHED STONE BACKFILL SHALL B E MERGED INTO THE UNIT PRICE FOR WATER MAINS UNDER ROADWAYS. NO SEPARATE PAYMENT SHALL BE MADE FOR CRUSHED STONE BACKFILL.
19. THE CONTRACTOR SHALL USE RUBBER TIRE EQUIPMENT WHEN WORKING IN PUBLIC STREETS AND ON DRIVEWAYS.
20. THE CONTRACTOR SHALL REMOVE TOPSOIL IN GARDENS, CULTIVATED AREA, AND LAWNS. UPON COMPLETION OF PIPELINE INSTALLATION, THE CONTRACTOR SHALL REPLACE TOPSOIL TO A DEPTH OF 8-INCHES IN LAWNS AND 24-INCHES IN GARDENS.
21. THE CONTRACTOR SHALL HAVE A SET OF STATE APPROVED DRAWINGS AND THE PROJECT SPECIFICATIONS AT THE JOB SITE AT ALL TIMES.
22. WORK DONE IN STREETS AND DRIVEWAYS SHALL BE DONE IN A MANNER TO MINIMIZE NUISANCE AND INCONVENIENCE TO PROPERTY OWNERS AND THE GENERAL PUBLIC. PROPERTY OWNERS SHALL BE GIVEN A MINIMUM OF 24-HOURS ADVANCE NOTICE OF DRIVEWAY CLOSURE AND PROVISIONS SHALL BE MADE TO PROVIDE ACCESS TO PROPERTY.



Tullahoma Utilities Authority
Tullahoma, Tennessee

E. LINCOLN STREET
WATER LINE REPLACEMENT

DESIGNED BY: FDW
Date: 02/14/22 Rev. 03/15/22
DRAWN BY: FDW
CHECKED BY:
SCALE: AS SHOWN

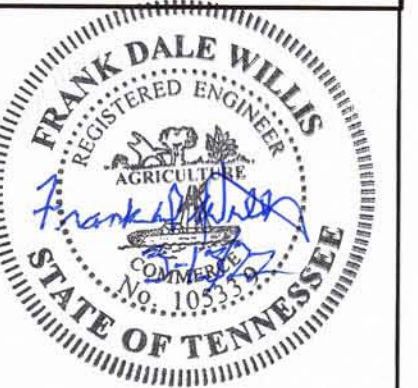


Legend

- Proposed Water Main
- ⋈ Proposed Fire Hydrant
- ⊗ Proposed Water Valve
- 4" NG
- - - Existing Water Main
- Existing Water Valve
- ⊗ Existing Fire Hydrant
- Existing Water Meter
- Sanitary Sewer
- Sanitary Sewer Manhole
- ⋯ Existing Pressure Sewer



1 inch = 50 feet



Tullahoma Utilities Authority
Tullahoma, Tennessee

**E. LINCOLN STREET
WATER LINE REPLACEMENT**

DESIGNED BY:
FDW

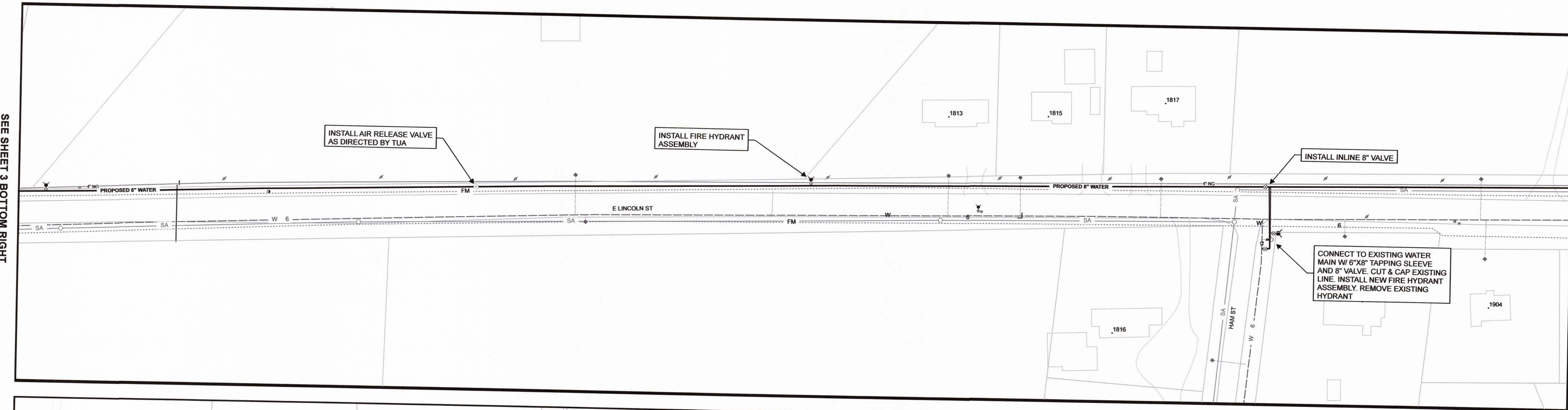
Date:
02/14/22 Rev. 03/15/22

DRAWN BY:
FDW

CHECKED BY:

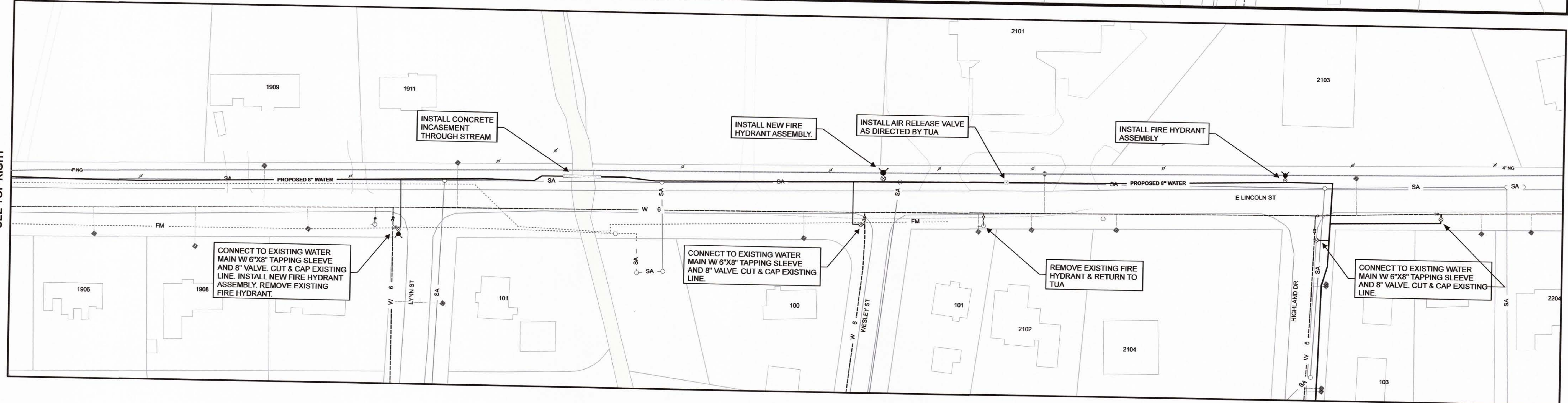
SCALE: 1"=100'

SEE SHEET 3 BOTTOM RIGHT



SEE BELOW LEFT

SEE TOP RIGHT

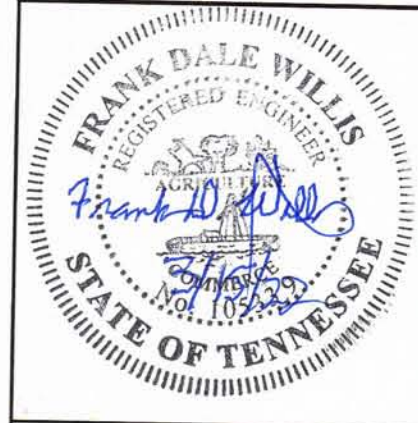


SEE SHEET 4 TOP LEFT



1 inch = 50 feet

Legend	
	Proposed Water Main
	Proposed Fire Hydrant
	Proposed Water Valve
	4" NG
	Existing Water Main
	Existing Water Valve
	Existing Fire Hydrant
	Existing Water Meter
	Sanitary Sewer
	Sanitary Sewer Manhole
	Existing Pressure Sewer



Tullahoma Utilities Authority
Tullahoma, Tennessee

E. LINCOLN STREET
WATER LINE REPLACEMENT

DESIGNED BY:
FDW
Date:
02/14/22 Rev. 03/15/22
DRAWN BY:
FDW
CHECKED BY:

SCALE: 1"=50'



Tullahoma Utilities Authority
Tullahoma, Tennessee

E. LINCOLN STREET
WATER LINE REPLACEMENT

DESIGNED BY:
FDW

Date:
02/14/22 Rev. 03/15/22

DRAWN BY:
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SCALE: 1"=100'

TULLAHOMA UTILITIES AUTHORITY TULLAHOMA, TENNESSEE

E. LINCOLN STREET WATER MAIN REPLACEMENT

NOI/SWPPP PLANS

MARCH 2024



GENERAL NOTES:

- THE CONTRACTOR SHALL PROVIDE AND INSTALL SERVICE SADDLES, FITTINGS AND RECONNECT EXISTING SERVICES TO NEW WATER MAIN AS DIRECTED BY TUA. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN THE ESTABLISHED UNIT PRICE ITEMS FOR RECONNECTING SERVICES. **TUA, AT ITS DISCRETION, MAY PERFORM PART OF THE WORK SUCH AS SERVICE LINE RECONNECTION, ETC.**
- UNTIL NEW WATER MAIN HAS BEEN COMPLETED, TESTED AND PLACED IN SERVICE, THE CONTRACTOR SHALL MAINTAIN SERVICE ON THE EXISTING WATER MAIN AND WATER SERVICES TO CUSTOMERS SERVED BY THE EXISTING WATER MAIN.
- ALL EXISTING WATER LINE SHUT-DOWNS, TIE-INS TESTING, AND DISINFECTION OF NEW WATER MAINS SHALL BE PERFORMED IN COMPLIANCE WITH ALL REGULATIONS AND REQUIREMENTS OF THE STATE OF TENNESSEE AND TUA.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL CONSTRUCTION TAPS OR CONNECTIONS REQUIRED FOR FILLING, FLUSHING, SAMPLING AND MAINTAINING WATER SERVICE IN THIS PROJECT. NO SEPARATE PAYMENT SHALL BE MADE. TUA SHALL CHARGE \$500 FOR EACH MAIN TAP IT MAKES THROUGH THE CONTRACTOR'S TAPPING SLEEVE AND VALVE.
- ALL VALVES, FITTINGS, FIRE HYDRANTS, VALVE BOXES, ETC. REMOVED ON THIS PROJECT SHALL BE DELIVERED BY TO CONTRACTOR TO TUA'S STORAGE YARD UNLESS OTHERWISE DIRECTED BY TUA.
- THE CONTRACTOR SHALL REPLACE ALL EXISTING WATER SERVICES TO THE EXISTING WATER METERS ON EACH SIDE OF THE STREET AS DIRECTED BY TUA.
- THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING TENNESSEE 811 PRIOR TO ANY EXCAVATION.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE SIGNS AND/OR BARRICADES REQUIRED TO PROVIDE SAFETY TO THE PUBLIC. TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS OF THE 'MANUAL OF UNIFORMED TRAFFIC CONTROL DEVICES' (MUTCO). OBTAIN NECESSARY LOCAL PERMITS. ALL COST FOR THESE ITEMS OF WORK WILL BE MERGED INTO UNIT PRICE CONSTRUCTION ITEM.
- THE EXISTING FIRE HYDRANTS THAT WILL BE REMOVED AT THE CONCLUSION OF THE PROJECT ARE TO REMAIN IN SERVICE UNTIL THE PROPOSED WATER MAINS AND NEW FIRE HYDRANTS HAVE BEEN INSTALLED, TESTED AND ARE IN SERVICE. THIS IS TO PROVIDE UNINTERRUPTED FIRE PROTECTION THROUGHOUT THE PROJECT AREA.
- WATER LINES SHALL BE ENCASED IN CONCRETE WHERE THEY CROSS STREAMS AND DITCHES, UNDER CULVERTS, WHERE THE DEPTH OF COVER IS LESS THAN 30 INCHES IN OPEN AREAS AND 36 INCHES UNDER OPEN CUT ROADWAYS, OR AS DIRECTED BY TUA.
- NO PORTION OF THE NEW WATER LINE SHALL BE CONNECTED TO EXISTING LINES OR PLACED IN SERVICE UNTIL THE NEW WORK HAS BEEN TESTED, SAMPLED, AND RETURNED NEGATIVE BACTERIOLOGICAL TESTS.
- THE CONTRACTOR SHALL RESTORE ALL CULVERTS, FENCES, WALLS, PLANTS AND SHRUBBERY, PROPERTY PINS, LIGHT AND POWER POLES, STREET SIGNS, MAIL BOXES, WATER LINES, GAS LINES, WATER AND GAS METERS AND BOXES. THE COST OF THIS WORK SHALL BE MERGED INTO THE UNIT PRICES FOR THE WATER MAIN INSTALLATION.
- CONTRACTOR SHALL PROTECT AND RESTORE PROPERTY LOCATED IN EASEMENTS TO A CONDITION EQUAL TO OR BETTER THAN THAT EXISTING AT THE COMMENCEMENT OF CONSTRUCTION
- THE CONTRACTOR SHALL OBTAIN ALL ADDITIONAL PERMITS FROM STATE AND/OR LOCATE ENTITIES TO CROSS ALL STREETS AND HIGHWAYS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MINOR GRADE AND/OR ALIGNMENT CHANGES NECESSARY TO CONSTRUCT THE PROPOSED WATER MAINS DUE TO CONFLICTS WITH EXISTING PIPE AND/OR UTILITIES ON OR ADJACENT TO THE SITE.
- THE LOCATIONS AND SIZES OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK IN EACH AREA. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ALL DAMAGES THAT MIGHT OCCUR TO EXISTING UTILITIES.
- ALL MATERIALS, CONSTRUCTION METHODS, TESTING AND WORKMANSHIP SHALL BE IN FULL COMPLIANCE WITH TUA'S SPECIFICATIONS, AWWA STANDARDS, AND THE STATE OF TENNESSEE REGULATIONS.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO CONTROL EROSION AND WATER POLLUTION THROUGHOUT THE CONSTRUCTION PERIOD INCLUDING THE ESTABLISHMENT OF GRASS ON THE DISTURBED AREAS.
- PORTIONS OF THE PROPOSED WATER MAINS ARE TO BE CONSTRUCTED UNDER DRIVEWAYS, STREETS AND/OR PARKING LOTS. THE CONTRACTOR SHALL FURNISH AND PLACE COMPACTED CRUSHED STONE BACKFILL AT THESE LOCATIONS FROM THE WATER MAIN BEDDING TO THE ROADWAY SURFACE. ALL COSTS ASSOCIATED WITH CRUSHED STONE BACKFILL SHALL BE MERGED INTO THE UNIT PRICE FOR WATER MAINS UNDER ROADWAYS. NO SEPARATE PAYMENT SHALL BE MADE FOR CRUSHED STONE BACKFILL.
- THE CONTRACTOR SHALL USE RUBBER TIRE EQUIPMENT WHEN WORKING IN PUBLIC STREETS AND ON DRIVEWAYS.
- THE CONTRACTOR SHALL REMOVE TOPSOIL IN GARDENS, CULTIVATED AREA, AND LAWNS. UPON COMPLETION OF PIPELINE INSTALLATION, THE CONTRACTOR SHALL REPLACE TOPSOIL TO A DEPTH OF 8-INCHES IN LAWNS AND 24-INCHES IN GARDENS.
- THE CONTRACTOR SHALL HAVE A SET OF STATE APPROVED DRAWINGS AND THE PROJECT SPECIFICATIONS AT THE JOB SITE AT ALL TIMES.
- WORK DONE IN STREETS AND DRIVEWAYS SHALL BE DONE IN A MANNER TO MINIMIZE NUISANCE AND INCONVENIENCE TO PROPERTY OWNERS AND THE GENERAL PUBLIC. PROPERTY OWNERS SHALL BE GIVEN A MINIMUM OF 24-HOURS ADVANCE NOTICE OF DRIVEWAY CLOSURE AND PROVISIONS SHALL BE MADE TO PROVIDE ACCESS TO PROPERTY.
- EROSION CONTROL ITEMS AND METHODS MUST TDEC AND THE CITY OF TULLAHOMA STANDARDS.

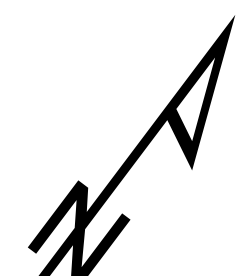
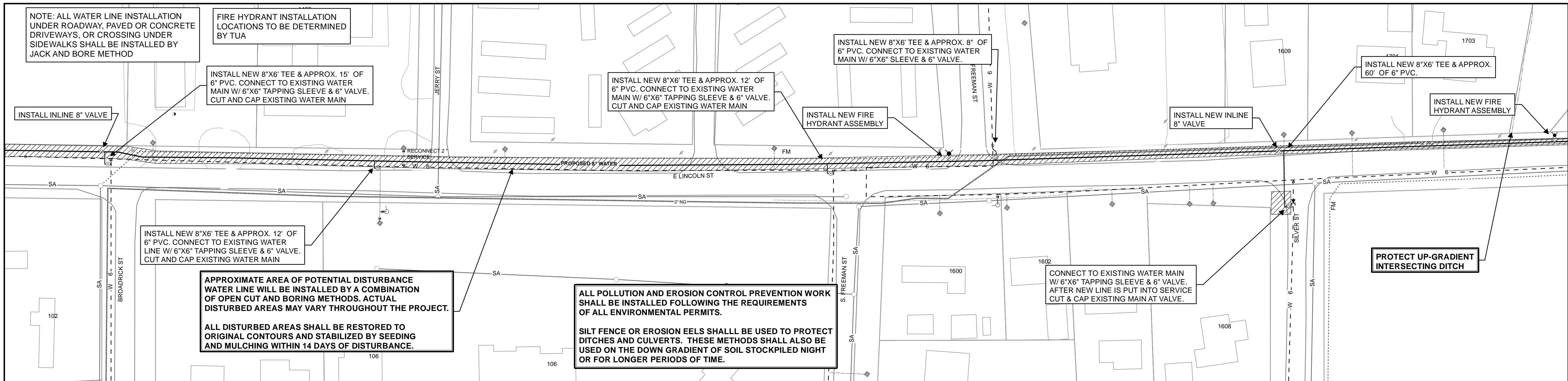
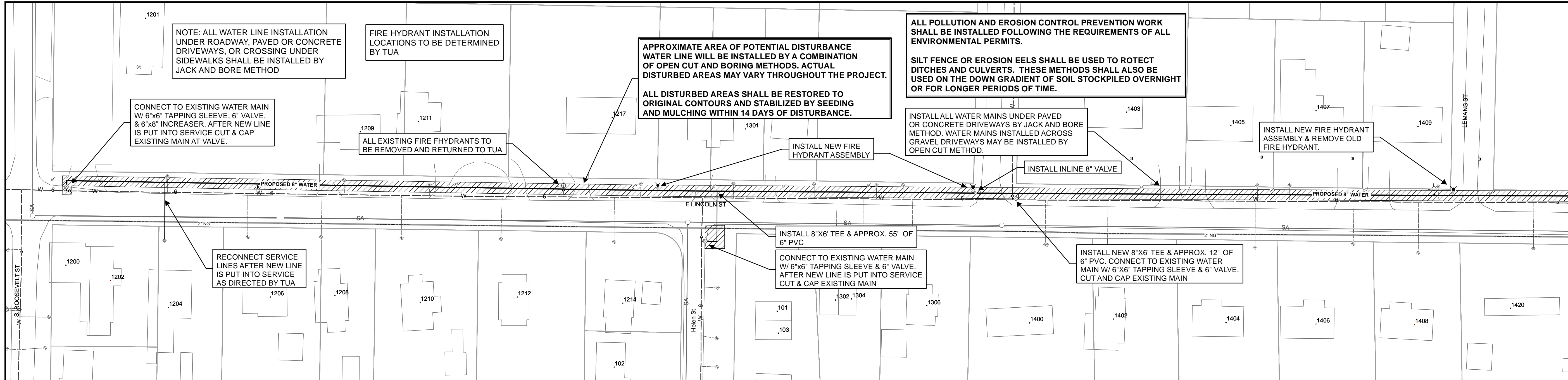
EROSION CONTROL NOTES

- THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO CONTROL EROSION AND WATER POLLUTION THROUGH THE CONSTRUCTION PERIOD. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE IN PLACE BEFORE EARTH MOVING OPERATIONS BEGIN. CLEARING AND EARTH DISTURBANCE SHALL BE HELD TO THE MINIMUM WIDTH NECESSARY.
- THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL EROSION CONTROL PROVISIONS AS SET FORTH IN THE STORMWATER POLLUTION PREVENTION PLAN AND IN ALL PERMITS ISSUED BY THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC), THE UNITED STATES ARMY CORP OF ENGINEERS; AND ANY OTHER REGULATORY AGENCIES.
- SILT FENCE OR EROSION EELS SHALL BE INSTALLED AS NECESSARY TO KEEP SEDIMENT FROM LEAVING THE CONSTRUCTION AREA. THE SWPPP DESCRIBES THOSE CONDITIONS UNDER WHICH SILT FENCE OR EROSION EELS MUST BE INSTALLED. ALL SOIL STOCKPILES THAT WILL BE LEFT OVERNIGHT MUST HAVE SILT FENCE OR EROSION EELS INSTALLED ON THE DOWN GRADIENT SIDE OF THE STOCKPILE.
- WHERE EXCAVATION IS OCCURRING PARALLEL TO WATERS OF THE STATE, ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UP GRADIENT SIDE OF THE TRENCH RATHER THAN BETWEEN THE TRENCH AND THE STREAM.
- SEDIMENTATION CONTROLS THAT ARE INSTALLED SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
- SEDIMENTATION CONTROLS SHALL BE MAINTAINED IN SUCH A MANNER THAT THEY ARE CLEANED OUT WHEN 50% OF THE SILT CARRYING CAPACITY HAS BEEN REACHED.
- ALL AREAS OF DISTURBANCE SHALL BE VEGETATED AS QUICKLY AS POSSIBLE AFTER FINAL GRADING HAS BEEN ACCOMPLISHED. IN ALL CASES, SEEDING AND MULCHING SHALL OCCUR WITHIN FIFTEEN DAYS OF FINAL GRADING OF THE CONSTRUCTION AREA. SEEDING AND MULCHING WILL NEED TO BE COMPLETED AS WATER LINE INSTALLATION PROGRESSES RATHER THAN AFTER ALL OF THE INSTALLATION IS COMPLETED.
- SEE THE SWPPP FOR SPECIFICATIONS OF BEST MANAGEMENT PRACTICES TO BE UTILIZED.
- SEE THE SWPPP FOR A DETAILED DESCRIPTION OF CONSTRUCTION METHODS TO BE UTILIZED TO KEEP SEDIMENTATION FROM OCCURRING DURING THE PROJECT. AS LONG AS THE SPECIFIED METHODS ARE FOLLOWED, IT WILL NOT BE NECESSARY TO LINE THE ENTIRE PROJECT WITH SEDIMENTATION CONTROLS. HOWEVER, THOSE AREAS THAT ARE IMMEDIATELY ADJACENT OR PARALLEL TO STREAMS OR DRAINAGE DITCHES WILL HAVE SEDIMENTATION CONTROLS INSTALLED UNTIL ALL DISTURBED AREAS ARE STABILIZED.
- THE SWPPP AND NOTICE OF COVERAGE (NOC) SHALL BE POSTED AT AN ACCESSIBLE AREA ON THE PROJECT SITE.
- PIPE STORAGE AREAS SHALL HAVE SILT FENCE OR EROSION EELS INSTALLED ON THE DOWN GRADIENT SIDE(S) OF THE STORAGE AREA UNLESS THE AREA IS GRAVELED OR OTHERWISE STABILIZED. PIPE STORAGE AREAS SHALL BE LABELED ON THIS PLAN AS THEY ARE OBTAINED.
- THE REQUIRED TWICE WEEKLY INSPECTIONS SHALL BE PERFORMED BY TUA.
- ANY SEDIMENT THAT IS TRACKED ONTO A ROADWAY OR THAT GETS INTO ROADSIDE DRAINAGE STRUCTURES MUST BE CLEANED UP BY THE END OF THE DAY IN WHICH IT WAS DISCOVERED.
- ONCE ALL AREAS OF THE PROJECT HAVE BEEN STABILIZED, THE NOTICE OF TERMINATION FORM LOCATED IN THE SWPPP SHALL BE COMPLETED AND SUBMITTED TO TDEC, DIVISION OF WATER RESOURCES.

Tullahoma Utilities Authority
Tullahoma, Tennessee

E. LINCOLN STREET
WATER LINE REPLACEMENT

DESIGNED BY: FDW
Date: 02/14/22 Rev. 03/15/22, Rev. 5/25/22
DRAWN BY: FDW
CHECKED BY:
SCALE: AS SHOWN



1 inch = 50 feet

Legend

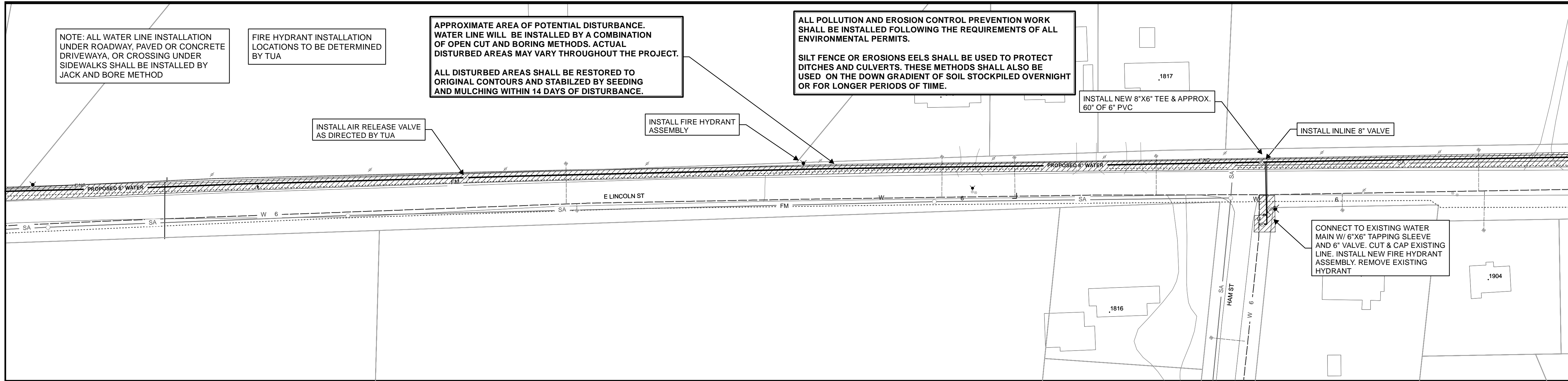
- Proposed Water Main
- Proposed Fire Hydrant
- Proposed Water Valve
- 4" NG
- Existing Water Main
- Existing Water Valve
- Existing Fire Hydrant
- Existing Water Meter
- Sanitary Sewer
- Sanitary Sewer Manhole
- Existing Pressure Sewer

Tulahoma Utilities Authority
Tulahoma, Tennessee

E. LINCOLN STREET
WATER LINE REPLACEMENT

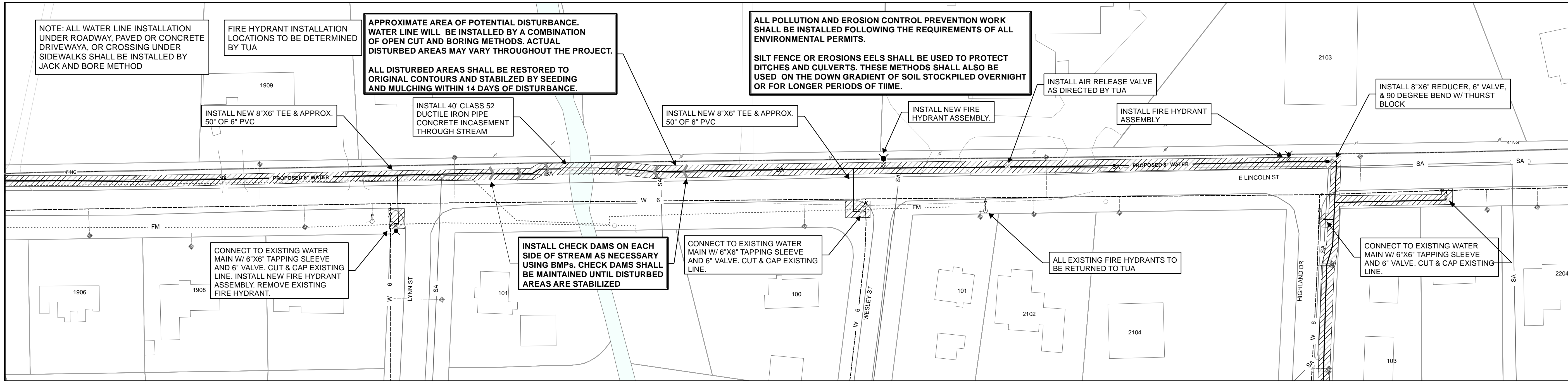
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SCALE: 1"=100'

SEE SHEET 3 BOTTOM RIGHT

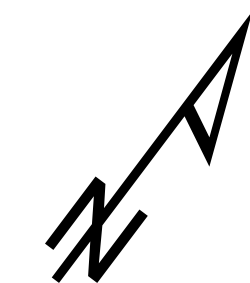


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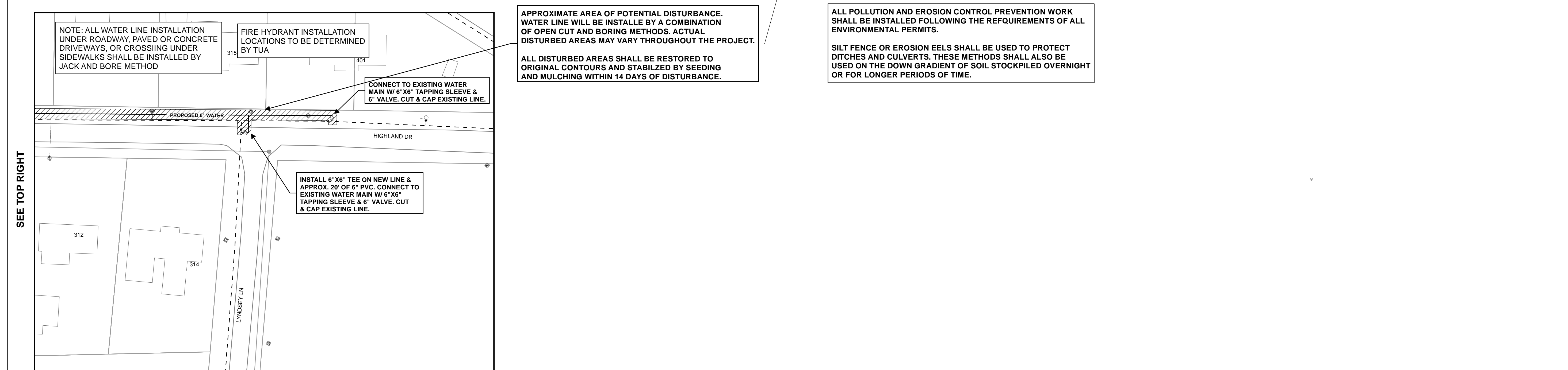
1 inch = 50 feet

Legend	
	Proposed Water Main
	Proposed Fire Hydrant
	Proposed Water Valve
	4" NG
	Existing Water Main
	Existing Water Valve
	Existing Fire Hydrant
	Existing Water Meter
	Sanitary Sewer
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Legend

-  Sanitary Sewer Manhole
-  Sanitary Sewer
-  Pressure Sewer
-  Water Main
-  Fire Hydrant
-  Water Valve

1 inch = 50 feet

STORMWATER POLLUTION PREVENTION PLAN

FOR THE

TULLAHOMA UTILITIES AUTHORITY

E. LINCOLN STREET WATER LINE REPLACE PROJECT

March 2024

Prepared by:

Tullahoma Utilities Authority

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I. GENERAL INFORMATION

This stormwater prevention plan (SWPPP) has been prepared to comply with the Tennessee General Permit for Stormwater Discharges from a construction activity. The activities being covered by this SWPPP include installation of 8 inch and 6 inch water mains.

The SWPPP and Notice of Intent (NOI) shall be kept onsite at all times during construction. Erosion control structures shall be constructed, inspected, and maintained per the requirements of this SWPPP/NOI and the project specifications. A Notice of Termination (NOT) shall be filed upon completion of the project. Construction shall be performed in such a manner as to prevent the discharge of polluted water into any stream or wetland. This plan may be amended by the owner, engineer, or as directed by TDEC to accommodate unforeseen circumstances during the course of the project. If amendments are made to the plan, the changes will be implemented within seven days.

II. PROJECT AND SITE DESCRIPTIONS

A. SUMMARY

The project consists of the installation of approximately 5,800 feet of 8 inch water main and 2,000 feet of 6 inch water main. The construction activities consist of trenching, backfilling trenches, digging bore and receiving pits, and excavation equipment traffic.

The project is located in Tullahoma on E. Lincoln Street and Highland Drive. The is located on E. Lincoln Street starting at N. Roosevelt Street, thence northeast along E. Lincoln Street to Highland Drive, thence southeast along Highland Drive to the intersection with Lindsey Lane.

B. CONSTRUCTION SEQUENCING

Construction will first consist of the installation of any necessary sediment controls for the areas where the water line is to be installed. The project area will not be lined with silt fence. The means by which sediment is controlled will vary along different areas of the route. Where the water line is located along a ditch line, check dams will be utilized within the down gradient of the disturbed area.

The amount erosion controls needing to be installed will be kept to a minimum by backfilling and stabilizing the trench as the project progresses. As the trench is excavated, all soil from the excavation shall be stored on the up gradient side of the trench to the extent possible. Areas where this cannot be accomplished may require the installation of additional sediment controls.

Work should generally proceed in the following sequence:

- Mobilization and delivery of equipment and materials to the site
- Installation of erosion control measure at known locations.
- Initial layout and/or staking if necessary
- Open cutting of trench, installation of water main pipe in the trench and backfilling

- Cleanup, grading, and seeding of disturbed areas
- Removal of sediment control upon stabilization of disturbed areas
- Final inspection

C. SITE DESCRIPTION AND TOPOGRAPHY

The total area expected to be disturbed is approximately 1.8 acres. The majority of the disturbance will be simple open cut trench and general construction activities that accompany water line installation. The slope of the disturbed areas varies from 0% to 3%. The entirety of the site is linear trench excavation. The impervious areas consisting of streets and driveways are less than 10 % of the project area and will not change after or during the project.

Drainage from portions of construction site will discharge to an unnamed tributary of Bobo Creek. There is be one crossing of this stream. The crossing will be made by open cut trenching. The stream is dry during dry weather and it expected that the work will be completed with these conditions. The stream will be backfilled with the existing soil and streambed material. Care will be returned the stream to near as possible to the preconstruction conditions. An ARAP application has been submitted to TDEC, Columbia EFO. There was no water quality assessment of this area of Bobo Creek.

D. SOILS INFORMATION

The soils in the project area are various silt loams. See Appendix A for soils data sheets. Due to the wide range of soil types, no effort has been made to represent specific soil types found within the project area.

III. STORMWATER MANAGEMENT

A. STRUCTURAL CONTROLS

Structural controls for this project may include, but are not limited to silt fence, erosion eels, check dams, etc. These devices will be properly installed using Best Management Practices and according to the manufacturer's recommendations as found in Appendix B of this SWPPP. Because the project is a linear project, it will not be feasible or necessary to line the entire project area with silt fence. There will be areas, however, where silt fence or an alternate sediment control such as erosion eels will be necessary. Sediment controls will be used where the construction activity is withing 50 feet of the stream. Sediment controls will also be utilized on the down gradient side of all soil stockpiles that will left in place overnight or for longer periods of time. Because the project will be moving in a linear fashion, it will be more practical to utilize erosion eels that can moved along with the project as work progresses.

Certain construction management practices must also be utilized to ensure that sedimentation does not occur as a result of the project. The material excavated from trenches shall not be left piled along the entire length of the project unless sediment controls are also going to be installed along

the entire length of the trench. If the excavated material is going to be used to backfill the trench, then the completed segments of trench shall be backfilled and rough graded at the end of work day. If the material that is removed from trenches is not to be used for backfill, then it shall be stockpiled with sediment controls installed on the downgradient side or removed from the site at the end of the work day. Trenches that are not ready to be backfilled at the end of the day shall have sediment controls installed at along the down gradient side of the trench. When possible, excavated material shall be placed on the upgradient side of the trench so that in the event of an unanticipated rainfall event, the material will flow back into the trench rather than off of the construction area.

B. STABILIZATION PRACTICES

Sound stabilization practices will be an integral part of the project from the onset of construction. This will include but not be limited to preserving natural turf, trees, and other vegetation whenever possible; careful placement of soil stockpiles within protected areas, geotextiles, sodding, and the use of riprap on stream banks.

Reseeding with vegetative cover will be the primary technique utilized by the contractor to control erosion from the disturbed area. Grass mixtures that will provide growth as well as a permanent cover will be used. Disturbed areas will be seeded and mulched within 14 days of final grading of the area.

C. INSPECTIONS AND MAINTENANCE

Inspection of erosion and sediment control structures will be performed at least twice every calendar week and at least 72 hours apart. Routine inspections are to include, at a minimum, an inspection of disturbed areas that have not been finally stabilized, areas used for storage of materials, structural control measures, and stormwater outfalls. The inspector must be certified to perform inspections.

Maintenance needs identified during inspections or at any time will be corrected before the next rain event, but not more than seven days after the problem is identified. Control structures are be cleaned out when 50% of the silt carrying capacity has been reached.

If sediment were to escape the sediment controls on the site and not reach the stream, it must be removed as a frequency sufficient to minimize offsite impacts. If small amounts of sediment were to reach the stream, then it will be removed with only hand tools. If larger accumulations of sediment were to enter the stream, the TDEC Columbia EFO should be informed and authorization obtained before any stream remediation or restoration is attempted.

Inspection records will be maintained on the project site. TDEC's Construction Stormwater Inspection Certification form will be used for inspections.

IV. SIGNATORY REQUIREMENTS

Owner/Developer: Tullahoma Utilities Authority
Address: 901 S. Jackson Street
P.O. Box 788
Tullahoma, TN 37388

Owner or Developer Certification (must be signed by president, vice-president or equivalent, or ranking		
I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.		
Owner or Developer name (print or type):	Signature:	Date:
Owner or Developer name (print or type):	Signature:	Date:

Contractor: _____
Address: _____

Contractor(s) Certification (must be signed by president, vice-president or equivalent, or ranking elected		
I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, and for failure to comply with these permit requirements. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.		
Contractor name (print or type):	Signature:	Date:
Contractor name (print or type):	Signature:	Date: