



PHENIX CITY *Alabama*

DEPARTMENT OF
ENGINEERING / PUBLIC WORKS

601 12th Street | Phenix City, AL 36867 | Ph: 334-448-2760 | Fx: 334-291-4848 | phenixcity.us

DR. R. GRIFF GORDY
Mayor Pro Tem / At Large

STEVE BAILEY
Councilmember District 1

EDDIE N. LOWE
Mayor

VICKEY CARTER JOHNSON
Councilmember District 2

ARTHUR L. DAY, JR.
Councilmember District 3

WALLACE B. HUNTER, City Manager
MELONY LEE, City Clerk
ANGEL MOORE, P.E., City Engineer
Director of Engineering / Director of Public Works

BID FORM

THIS IS AN INQUIRY - NOT AN ORDER

Date: _____ Bids Close On: July 14, 2022 Time: 10:00 AM

Bids to be delivered to: **Finance Department, City of Phenix City, Alabama, 601 12th Street, Second Floor, Phenix City, Alabama 36867**

Please quote us prices on the articles or services listed below. The right is reserved to accept or reject all or any part of your offer, and to accept the offer the City Council considers the most advantageous to the City. Any suggestions as to quantity to secure a better price are welcome.

Item No.	Quantity	Item	Unit Price	Total
		Please see attached documents		

BIDS MUST BE RETURNED IN A SEALED ENVELOPE TO THE ADDRESS ABOVE. MARKED: E22-03 Shotcrete Lining of Storm Drainage Pipes

IF YOU MAIL YOUR BID BY FED EX OR AIRBORNE, ETC., PLEASE WRITE ON THE ENVELOPE ALSO: E22-03 Shotcrete Lining of Storm Drainage Pipes. NO BIDS WILL BE ACCEPTED AFTER 9:30 AM ON THE BID OPENING DATE. PLEASE NOTE THAT THE TIME IS EASTERN (GEORGIA). BIDS WILL BE OPENED IN THE MARTIN IDLE HOUR PARK COMMUNITY CENTER LOCATED AT 3743 MOON LAKE DRIVE, PHENIX CITY, ALABAMA.

FOR ADDITIONAL INFORMATION, CALL: Engineering Department (334) 448-2760

GENERAL CONDITIONS OF BIDDING - READ CAREFULLY

- Quote on alternates if unable to furnish items listed. State on face of bid exactly what you are furnishing. (Brand or Manufacturer's Name).
- Any catalog, or manufacturer's reference in this proposal is descriptive, but not restrictive, and is used only to indicate type and grade.
- Furnish specifications on all items bid.
- The City of Phenix City is exempt from all Federal Excise Taxes. DO NOT include tax in your bid price or invoice.
- PRICE MUST BE ITEMIZED. The City of Phenix City reserves the right to award item or total bid.
- In case of a discrepancy between the unit price and the extension, the unit price will be taken.
- Due to legal requirements of the City for processing payments, cash discounts should be quoted ten days after end of month, when possible.
- In the event no bid is to be submitted note same on invitation and return with the general provisions included herein. Also advise whether future invitations for type of supplies or services covered by the inquiry are desired.
- The successful bidder will be required to have all applicable state and city business licenses.
- This original request for proposal, along with any attachments, **MUST BE SUBMITTED IN DUPLICATE.**
- A 10% bid bond or cashier's check must be submitted with all bids

The undersigned hereby offers to furnish and deliver the articles or services as specified above at the prices and terms there stated and in strict accordance with the specifications and general conditions of bidding, all of which are made a part of this offer. This offer is not subject to withdrawal.

Delivery can be made _____ Cash discount _____ % _____ Days

Name of Business _____

By: _____
Authorized Representative - Must sign by hand

Business Telephone: _____

THE CITY OF PHENIX CITY, ALABAMA
Engineering Department



***SHOTCRETE LINING OF
STORM DRAINAGE PIPES***

EDDIE LOWE, MAYOR

WALLACE B. HUNTER, CITY MANAGER

ANGEL MOORE, CITY ENGINEER

INVITATION TO BID
City of Phenix City Engineering Department

SEALED BIDS FOR SHOTCRETE LINING OF STORM DRAINAGE PIPES

shall be received by Purchasing Agent, at The City of Phenix City, 601 12th Street, Phenix City, Alabama 36867, at the Office of Finance, until 10:00 A.M. E.S.T., on Thursday, July 14, 2022, and then publicly opened and read aloud at the Martin-Idle Hour Community Center, 3743 Moon Lake Drive Phenix City, Alabama. All interested parties are invited to attend. Only bids from competent general contractors will be considered. At the time of contract award, the successful bidder must be a properly licensed general contractor in the State of Alabama.

Scope of Work and Specifications are included within this document.

Bid documents may be purchased from the Office of the City Engineer upon payment of \$25.00 per printed set. Any unsuccessful bidder, upon returning such set promptly and in good condition, will be refunded his/her payment, and any non-bidder upon so returning such a set will be refunded \$25.00.

The bidder's proposal must be submitted on the complete original Bid furnished to him/her by the City of Phenix City. All information in the Bid must be completed by the bidder for the Bid to be accepted.

A Bid Bond in the amount of ten (10) percent of the bid amount made payable to the City of Phenix City must accompany each bid. Performance and Payment Bonds for the full contract sum will be required of the successful bidder. The right is reserved by the Owner to reject all Bids and to waive irregularities.

CONTACT INFORMATION
ANGEL MOORE, CITY ENGINEER
CITY OF PHENIX CITY
1206 7th AVENUE
PHENIX CITY, ALABAMA 36867
PH: (334) 448-2760

BID DOCUMENT
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CONTRACT FORM

THIS AGREEMENT, made this _____ day of _____, 2022, by and between _____ The City of Phenix City _____, herein called "Owner" acting herein through its _____ Mayor and City Manager _____, and

STRIKE OUT (a corporation) (a partnership) (an individual)
INAPPLICABLE
TERMS

doing business as _____, City of _____, County of _____, and State of _____, hereinafter called "Contractor."

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the OWNER, the CONTRACTOR hereby agrees with the OWNER to commence and complete the construction described as follows

The City of Phenix City is accepting sealed bids for the purpose of Shotcrete Lining of various storm drainage pipes located throughout the City. The Scope of Work for this the project will include the following:

- 3608 Kelly Court 48+/- lf. x 48" CMP and 240 lf x 36" CMP
- 2747 Summerfield Place 170+/- lf x 48" CMP, Form and Fill w/ concrete beneath existing headwall
- Stadium Drive North 90+/- lf x 72" CMP
- 2106 Stadium Drive 64+/- lf x 72" CMP
- 1305 Crawford Road 70+/- LF x 52" RCP and 134+/- lf x 48" RCP
- 399 Mimosa Road 180+/- lf 42" CMP

for the sum of:
Bid Amount:

Dollars (\$_____)

and all extra work in connection therewith, under the terms as stated in the General and Special Conditions of the Contract; and at his (its or their) own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories as specified in the plans and contract documents and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, the General Conditions, Supplemental General Conditions and Special Conditions of the Contract, the plans, which include all maps, plats, blue prints, and other drawings and printed or written explanatory matter thereof, the specifications and contract documents therefore as prepared by The City of Phenix City ; and as enumerated in Paragraph 1 of the Supplemental General Conditions, all of which are made a part hereof and collectively evidence and constitute the contract.

The Contractor, by making his bid, represents that he has read and understands the Bid and Contract Documents, that he has visited the sites, examined each site carefully to fully understand the conditions and repairs required.

The Contractor hereby agrees to commence work under this contract on or before a date to be specified in a written "Notice to Proceed" by the Owner and to fully complete the project within 90 consecutive calendar days thereafter.

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 has not been completed within the time herein specified, it is agreed that from the compensation otherwise to be paid to the Contractor, the second party may retain the sum of \$500.00 per day for each day thereafter, Sundays and holidays included, that the Work remains uncompleted, which sum shall represent the actual damages which the Owner 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 the second party will have sustained in the event of such default by the first party.

It is further mutually agreed between the parties hereto that if at any time after the execution of this agreement and the surety bond hereto attached for its faithful performance, the second party shall deem the surety or sureties upon such bond to be unsatisfactory, or if, for any reason, such bond ceases to be adequate to cover the performance of the Work, the first party shall, at its expense, within five (5) days after the receipt of notice from the second party to do so, furnish an additional bond or bonds in such form and amount and with such surety or sureties as shall be satisfactory to the second party. In such event, no further payment to the first party 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 the second party.

It is also mutually agreed between the parties hereto, for any claim, the method of binding dispute resolution shall be litigation in a court of competent jurisdiction in Russell County, Alabama.

Section 9 of Act 2012-491 amends Section 31-13-9, Code of Alabama 1975 with regard to providing proof of enrollment with the E-Verify program administered by the U.S. Department of Homeland Security. Act 2012-491 requires that all state, county and municipal contracts and agreements contain the following language:

By signing this contract, the contracting parties affirm, for the duration of the agreement, that they will not violate federal immigration law or knowingly employ, hire for employment or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom.

The Owner agrees to pay the Contractor in progress payments on account of the Contract Sum to the Contractor. The period covered by each Application for Payment shall be one calendar month ending on the last day of the month. Provided that an Application for Payment is received by the Owner not later than the 2nd day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the 30th day of the same month. If an Application for Payment is received by the Owner after the 2nd day of a month, payment shall be made by the Owner not later than Thirty (30) days after the Owner receives the Application for Payment.

Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment. Once these percentages are verified by the Owner, payment shall be made by the Owner as stated above.

IN WITNESS WHEREOF, the parties to these presents have executed this contract in six (6) counterparts, each of which shall be deemed an original, in the year and day first above mentioned.

(Seal)
ATTEST:

By _____
Eddie N. Lowe
Mayor, City of Phenix City

Melony Lee
City Clerk

By _____
Wallace B. Hunter
City Manager, City of Phenix City

(Seal)

By _____
(Contractor)

(Secretary)

By _____

(Witness)

(Title)

(Address and Zip Code)

NOTE: Secretary of the Owner should attest. If a Contractor is a corporation, Secretary should attest.

Contractor's Federal Tax Identification Number: _____

**OWNER'S INSTRUCTIONS TO CONTRACTOR CONCERNING
BONDS AND INSURANCE FOR CONSTRUCTION**

PROJECT: SHOTCRETE LINING OF STORM DRAINAGE PIPES DATE: 2022

OWNER: CITY OF PHENIX CITY, ALABAMA

ATTENTION: CONTRACTORS

The following are your instructions with respect to the requirements for Bonds and Insurance to be included in the Contract Documents for the above Project.

I. BONDS

- A. A Construction Performance Bond in an amount equal to the Contract Price to extend through Construction and one year after the anticipated Date of Completion as set forth in the Contract Documents. The Performance Bond shall be extended by the Successful Bidder if actual Date of Completion occurs after the anticipated Date of Completion. Performance Bond shall be submitted within 10 days after property acceptance and prior to Notice to Proceed Date.
- B. A Payment Bond in an amount equal to the Contract Price to extend through Construction as set forth in the Contract Documents. Payment Bond shall be submitted prior to Notice to Proceed Date.
- C. A Bid Bond in the amount of ten (10) percent of the bid amount made payable to the City of Phenix City must accompany each bid. Performance and Payment Bonds for the full contract sum will be required of the successful bidder. The right is reserved by the Owner to reject all Bids and to waive irregularities.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called PRINCIPAL, and
(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

hereinafter called SURETY, are held and firmly bound unto

**The City of Phenix City
601 12th Street
Phenix City, AL 36867**

hereinafter called OWNER, in the penal sum of _____ (\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THESE OBLIGATION is such that whereas, the Principal entered into in 2022, a copy of which is hereto attached and made a part hereof for the performance of:

SHOTCRETE LINING OF STORM DRAINAGE PIPES

NOW, THEREFORE, the condition of this obligation is such that if the Principal shall faithfully perform the terms and conditions of the Contract in all respects on its part, and shall fully pay all obligations incurred in connection with the performance of such Contract on account of labor and materials used in connection therewith, and all such other obligations of every form, nature and character, and shall save harmless the Owner from all and any liability of every nature, kind and character which may be incurred in connection with the performance or fulfillment of such Contract or other such liability resulting from negligence or otherwise on the part of such Principal, and further shall save harmless the Owner from all costs and damage which may be suffered by reason of the failure to fully and completely perform said Contract, and shall fully reimburse and repay the Owner from all costs and damage which may be suffered by reason of the failure to fully and completely perform said Contract, and shall fully reimburse and repay the Owner for all expenditures of every kind, character and description which may be incurred by the Owner in making good any and every default which may exist on the part of the Principal in connection with the performance of said Contract; and further that the Principal shall pay all lawful claims of all persons, firms, partnerships, or corporations for all labor performed and materials furnished in connection with the performance of the Contract, and that the failure so to do with such persons, firms, partnerships or corporations shall give them a direct right of action against the Principal and Surety under this obligation; and provided, however, that no suit, action, or proceeding by reason of any default whatever shall be brought on this bond after one (1) year from the date on which the final payment on the Contract falls due, and provided further that if any alterations or additions which may be made under the Contract, or in the work to be done under it, or the giving by the Owner of any extension of time for the performance of the Contract or any other forbearance on the part of either the Owner or the Principal shall not, in any way, release the Principal and Surety, or either of them, their heirs, executors, administrators, successors, or assigns from their liability hereunder, notice to the Surety of any such alterations, extensions or forbearance being expressly waived. This obligation shall remain in full force and effect until the performance of all covenants, terms and conditions herein stipulated and after such performance, it shall become null and void.

IN TESTIMONY WHEREOF witness the hands and seal of the parties hereto on this the day of _____, 2022.

Executed in two (2) counterparts.

ATTEST:

Contractor: _____

Witness: _____

By: _____
(PRINCIPAL)

Surety: _____

Witness: _____

By: _____
(PRINCIPAL)

PAYMENT BOND

_____, as contractor, of _____
a _____ (Corporation, Partnership, or Individual), hereinafter called Principal, and
_____, hereinafter called Surety, are held and firmly bound unto the **City of Phenix City**, of 601 12th Street, Phenix City, Alabama 36867, hereinafter called OWNER, in the penal sum of _____ Dollars, \$_____ in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 2022, a copy of which is hereto attached and made a part hereof for the construction of

SHOTCRETE LINING OF STORM DRAINAGE PIPES

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, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

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

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

IN WITNESS WHEREOF, this instrument is executed in four counterparts, each one of which shall be deemed an original, this the _____ day of _____, 2022.

Principal

Surety

By _____(s)

By _____(s)

Witness as to Surety

Attorney-in-fact

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

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

BID BOND

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

_____, as Principal, and _____, as Surety, are hereby held and firmly bound unto the **City of Phenix City, Alabama** as owner in the penal sum of \$ _____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

Signed this _____ day of _____, 2022.

The condition of the above obligation is such that whereas, the Principal has submitted to the City of Phenix City, Alabama a certain Bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for the

SHOTCRETE LINING OF STORM DRAINAGE PIPES

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 the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his/her 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 any extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and 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.

_____(L.S.)
Principal

Surety

SEAL

By: _____

NOTICE OF AWARD

To: _____

Date: _____

SHOTCRETE LINING OF STORM DRAINAGE PIPES

The OWNER has considered the PROPOSAL submitted by you for the above described WORK in response to Proposal Request and Information for Bidders.

You are hereby notified that your PROPOSAL has been accepted for items in the amount of \$ _____

You are required to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, and Certificates of Insurance within 10 calendar days from the date of this notice to you.

If you fail to execute said agreement and to furnish the BOND within fifteen days from the date on this notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your PROPOSAL as abandoned. The OWNER will be entitled to such other rights as may be granted by law.

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

City of Phenix City
Phenix City, Russell County

Eddie N. Lowe
Mayor, City of Phenix City

Wallace B. Hunter
City Manager, City of Phenix City

Melony Lee
City Clerk, City of Phenix City

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____,
This the _____ day of _____, 2022.

By _____

Title: _____

NOTICE TO PROCEED

To: _____

Date: _____

SHOTCRETE LINING OF STORM DRAINAGE PIPES

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 2022, on or before _____, 2022, and you are to complete the WORK within 90 consecutive calendar days thereafter. The date of completion of all WORK is therefor _____, 2022.

City of Phenix City
Phenix City, Russell County

Eddie N. Lowe
Mayor, City of Phenix City

Wallace B. Hunter
City Manager, City of Phenix City

Melony Lee
City Clerk, City of Phenix City

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____, this the _____ day of _____, 2022

By _____

Title _____

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GENERAL CONDITIONS
Including Federal Labor Standards Provisions

1. Contract and Contract Documents

The specifications and any 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

The following terms as used in this contract are respectively defined as follows:

- a. "Contractor": A person, firm or corporation with whom the contract is made by the Owner.
- b. "Subcontractor": A person, firm or corporation supplying labor and materials or only labor for work at the site of the project for, and under separate contract or agreement with, the Contractor.
- c. "Work on (at) the project": Work to be performed at the location of the project, including the transportation of materials and supplies to or from the location of the project by employees of the Contractor and any Subcontractor.

3. Additional Instructions and Detail Drawings

The Contractor will be furnished a map showing the locations of the storm drainage pipes to be lined. The instructions supplied to the Contractor will coordinate with the Contract Documents and will be prepared so that they can be reasonably interpreted as part thereof. The Contractor shall carry out the work in accordance with the instructions. The Contractor shall provide the Owner with a schedule of order by which the pipes will be lined.

4. Materials, Services and Facilities

- a. It is understood that except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for as specified in the contract documents, 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.
- b. Any work necessary to be performed after regular working hours, on Sunday or Legal Holidays, shall be performed without additional expense to the Owner.

5. Contractor's Title to Materials

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

6. Inspection and Testing of Materials

- a. All materials and equipment used in the construction of the project may be subject to inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be selected by the Owner. The Contractor will pay for all

laboratory inspection service direct, and not as a part of the Contract.

- b. Materials of construction, particularly those upon which the strength and durability of the structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for uses intended.

7. "Or Equal" Clause

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

8. Patents

- a. The Contractor shall hold and save the Owner and its officers, agents, 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 the Owner, unless otherwise specifically stipulated in the Contract Documents.
- b. License or Royalty Fees: License and/or royalty fees for the use of a process which is authorized by the Owner of the project must be reasonable, and paid to the holder of the patent, or his authorized licensee, direct by the Owner and not by or through the Contractor.
- c. If the Contractor uses any design, device or materials covered by letters, patent or copyright, he shall provide for such use by suitable agreement with the Owner of such patented or copyrighted design, device or material. 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 his Sureties shall indemnify and save harmless the Owner 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 the Owner for any cost, expense or damage which it may be obliged to pay by reason of such infringement at any time during the prosecution of the work or after completion of the work.

9. Permits and Regulations

The Contractor shall procure and pay all permits, licenses and approvals necessary for the execution of his contract.

The Contractor shall comply with all laws, ordinances, rules, orders and regulations relating to performance of the work, the protection of adjacent property and the maintenance of passageways, guard fences or other protective facilities.

10. Contractor's Obligations

Pursuant to section 34-8-1(a) of the Code of Alabama, each contractor must submit with their Bid, proof of licensing through the Alabama State Board of Licensing for General Contractors, with approved maximum bid limits sufficient to cover the bid related to this specification. **Failure to comply will be cause for rejection of the bid.** A copy of the vendor's current year's license will

expedite the evaluation process.

The Contractor shall and will, in good workmanlike manner, do and perform all work and furnish as specified in plans and contract documents, 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 drawings covered by this Contract any and all supplemental plans and drawings, and in accordance with directions of the Owner as given from time to time during the progress of the work. He shall furnish, erect, maintain and remove such construction plant and such temporary works as may be required.

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

The Contractor shall warrant all work against defects in materials and workmanship for a period of one (1) year to ensure maximum performance of the lining. Warranty inspection will be performed one (1) year from the date of acceptance at the Contractor's expense by video inspection. Any defects will be corrected at the Contractor's expense.

11. Weather Conditions

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

12. Protection of Work and Property - Emergency

The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this Contract. He shall at all times safely guard and protect his 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 the Owner, or his 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 the Owner, in a diligent manner. He shall notify the Owner immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted to the Owner for approval. Where the Contractor has not taken action but has notified the Owner of an emergency threatening injury to persons or damage to the work or any adjoining property, he shall act as instructed or authorized by the Owner.

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 the General Conditions.

13. Inspection

The authorized representatives and agents of the Owner shall be permitted to inspect all work, materials, personnel, invoices of materials and other relevant data and records.

14. Reports, Records and Data

If requested, the Contractor shall submit to the Owner such schedule of quantities and costs, progress schedules, estimates, records and other data as the Owner may request concerning

work performed or to be performed under this Contract.

If requested, the Contractor shall submit satisfactory written certification of compliance with ASTM standards contained in this specification.

15. Superintendence by Contractor

At the site of the work, the Contractor shall employ a superintendent or foreman who shall have full authority to act for the Contractor. It is understood that such representative shall be acceptable to the Owner 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.

16. Changes in Work

No changes in the work covered by the approved Contract Documents shall be made without having prior written approval of the Owner. Charges or credits for the work covered by the approved change shall be determined by one or more, or a combination of the following methods:

- A. An agreed lump sum.
- B. The actual cost of:
 - 1. Labor, including foremen.
 - 2. Materials entering permanently into the work.
 - 3. The ownership or rental cost of equipment during the time of use on the extra work.
 - 4. Power and consumable supplies for the operation of power equipment.
 - 5. Insurance.

17. Extras

Without invalidating the Contract, the Owner 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 the work of the kind submitted in the Contractor's proposal 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 the Owner and the price is stated in such order.

18. Time for Completion and Liquidated Damages

It is hereby understood and mutually agreed, by and between the Contractor and the Owner, 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 "Notice to Proceed."

The Contractor agrees that said work shall be prosecuted regularly, diligently, and without interruption at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and the Owner, 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.

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 of the essence of this Contract; provided,

that the Contractor shall not be charged with liquidated damages or any excess cost when the Owner determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the Owner; provided, further, 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 the Owner, acts of another Contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes and severe weather.
- c) To any delays of Subcontractors or suppliers occasioned by any of the causes specified in Subsections (a) and (b) of this article.

Provided, further, that the Contractor shall, within ten (10) days from the beginning of such delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the Contract, notify the Owner, in writing, of the causes of the delay, who shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter.

It is further agreed between the parties, in the event the construction of the Work has not been completed within the time herein specified, it is agreed that from the compensation otherwise to be paid to the Contractor, the second party may retain the sum of \$500.00 per day for each day thereafter, Sundays and holidays included, that the Work remains uncompleted, which sum shall represent the actual damages which the Owner 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 the second party will have sustained in the event of such default by the first party.

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 the Owner who shall be the final judge of the quality and suitability of the work, materials, processes of manufacture and methods of construction for the purposes for which they are used. Should they fail to meet his approval they shall be forthwith reconstructed, made good, replaced and/or corrected, as the case may be, by the Contractor at his own expense. Rejected materials shall immediately be removed from the site. If, in the opinion of the Owner, it is undesirable to replace any defective 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 the Owner shall be equitable.

20. Subsurface Conditions Found Different

Should the Contractor encounter unsuitable subsurface material and/or latent conditions at the site, he shall immediately give notice to the Owner of such conditions before they are disturbed. The Owner will thereupon promptly investigate the conditions, and if he finds that they materially differ from those shown on the plans or indicated in the specifications, he will at once make such changes in the plans and/or specifications as he may find necessary, any increase or decrease of cost resulting from such changes to be adjusted in the manner provided in Paragraph 16 of the General Conditions.

21. Claims for Extra Cost

No claim for extra work or cost shall be allowed unless the same was done in pursuance of a written order of the Owner approved by the Owner, as aforesaid, and the claim presented with the

first estimate after the changed or extra work is done. When work is performed under the terms of subparagraph 16(c) of the General Conditions, the Contractor shall furnish satisfactory bills, payrolls and vouchers covering all items of cost and when requested by the Owner, give the Owner access to accounts relating thereto.

22. Right of Owner to Terminate Contract

Termination of Contract for Cause/Breach of Contract If through any cause, the Contractor shall fail to fulfill in a timely and proper manner his obligations under this Contract, or if the Contractor shall violate any of the covenants, agreements or stipulations of this Contract, the Owner shall thereupon have the right to terminate this Contract by giving written notice to the Contractor of such termination and specifying the effective date to such termination. In such event, all finished and unfinished documents, data, studies, drawings, maps, models, photographs, and reports or other materials prepared by the Contractor under this Contract shall, at the option of the Owner become its property and the Contractor shall be entitled to receive just and equitable compensation for any work satisfactorily completed on such documents or materials. Notwithstanding the above, the Contractor shall not be relieved of liability to the Owner for damages sustained by the Owner by virtue of any breach of the Contract by the Contractor, and the Owner may withhold any payments to the Contractor for the purpose of setoff until such time as the exact amount of damages due the Owner from the Contractor is determined.

Termination for Convenience of the Owner The Owner may terminate this Contract at any time by giving written notice to the Contractor of such termination and specifying the effective date thereof, at least thirty (30) days prior to the effective date of said termination. In such event, all finished or unfinished documents and other materials as described in the above clause, shall, at the option of the Owner, become its property.

If the Contract is terminated by the Owner as provided herein, the Contractor shall be entitled to receive just and equitable compensation for any work satisfactorily completed. The Contractor shall also be reimbursed (in addition to the above payment) for that portion of the actual out-of-pocket expenses (not otherwise reimbursed under this Contract) incurred by the Contractor during the Contract period which are directly attributable to the uncompleted portion of the services covered by this Contract. If this Contract is terminated due to the fault of the Contractor, the above clause relative to termination shall apply.

23. Payment to Contractor

Based upon Applications for Payment submitted to the Owner by the Contractor, the Owner shall make progress payments on account of the Contract Sum to the Contractor. The period covered by each Application for Payment shall be one calendar month ending on the last day of the month. Provided that an Application for Payment is received by the Owner not later than the 2nd day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the 30th day of the same month. If an Application for Payment is received by the Owner after the 2nd day of a month, payment shall be made by the Owner not later than Thirty (30) days after the Owner receives the Application for Payment.

Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment. Once these percentages are verified by the Owner, payment shall be made by the Owner as stated above.

24. Acceptance of Final Payment Constitutes Release

The acceptance by the Contractor of payment shall be and shall operate as a release to the Owner 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 the Owner and others relating to or arising out of this work. No payment, however, final or otherwise, shall operate to release the Contractor or his Sureties from any obligations under this Contract or the performance bond.

25. Insurance

The Contractor shall not commence work under this Contract until he has obtained all the insurance required under this paragraph and such insurance has been approved by the Owner, nor shall the Contractor allow any Subcontractor to commence work on this subcontract until the insurance required of the Subcontractor has been so obtained and approved.

- a. Compensation Insurance: The Contractor shall procure and shall maintain during the life of this Contract Workmen's Compensation Insurance as required by applicable State or territorial law for all of his employees to be engaged in work at the site of the project under this Contract and, in case of any such work sublet, the Contractor shall require the Subcontractor similarly to provide Workmen's Compensation Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Workmen's Compensation Insurance. In case any class of employees engaged in hazardous work on the project under this Contract is not protected under the Workmen's Compensation Statute, the Contractor shall provide and shall cause each Subcontractor to provide adequate employer's liability insurance for the protection of such of his employees as are not otherwise protected.
- b. Contractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance: The Contractor shall procure and shall maintain during the life of this Contract Contractor's Public Liability Insurance, Contractor's Property Damage Insurance and Vehicle Liability Insurance in the amounts specified in the Supplemental General Conditions.
- c. Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance: The Contractor shall either (1) require each of his Subcontractors to procure and to maintain during the life of his subcontract, Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance of the type and in the amounts specified in the Supplemental General Conditions specified in subparagraph (b) hereof, or (2) insure the activities of his policy, specified in subparagraph (b) hereof.
- d. Scope of Insurance and Special Hazards: The insurance required under subparagraphs (b) and (c) hereof shall provide adequate protection for the Contractor and his Subcontractors, respectively, against damage claims which may arise from operations under this Contract, whether such operations be by the insured or by anyone directly or indirectly employed by him and, also against any of the special hazards which may be encountered in the performance of this Contract as enumerated in the Supplemental General Conditions.
- e. Builder's Risk Insurance (Fire and Extended Coverage): Until the project is completed and accepted by the Owner, the Owner or Contractor (at the Owner's option as indicated in the Supplemental General Conditions) is required to maintain Builder's Risk Insurance (fire and extended coverage) on a 100 percent (100%) completed value basis on the insurable portion of the project for the benefit of the Owner, the Contractor, and Subcontractors as their interests may appear. The Contractor shall not include any costs for Builder's Risk Insurance (fire and extended coverage) premiums during construction unless the Contractor is required to provide such insurance; however, this provision shall not release the Contractor from his obligation to complete, according to plans and specifications, the project covered by the Contract, and the Contractor and his Surety shall be obligated to full performance of the Contractor's undertaking.
- f. Proof of Carriage of Insurance: The contractor shall furnish the Owner with certificates showing the type, amount, class of operations covered, effective dates and date of expiration of policies. Such certificates shall also contain substantially the following statement: The insurance covered by this certificate will not be cancelled or materially

altered, except after ten (10) days written notice has been received by the Owner.”

26. 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 the Owner. 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 of services rendered or materials supplied for the performance of the work called for in this Contract.

27. 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 will so settle. If such other Contractor or Subcontractor shall assert any claim against the Owner on account of any damage alleged to have been sustained, the Owner shall notify the Contractor, who shall indemnify and save harmless the Owner against any such claim.

28. Separate Contracts

The Contractor shall coordinate his operations with those of other Contractors. Cooperation will be required in the arrangement for the storage of materials and in the detailed execution of the work. The Contractor, including his Subcontractors, shall keep informed of the progress and the detail work of other Contractors and shall notify the Owner 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 him of the status of the work as being satisfactory for proper coordination with his own work.

29. 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 be as fully responsible to the Owner for the acts and omissions of his Subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.
- c. 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 the Owner may exercise over the Contractor under any provision of the Contract Documents.
- d. Nothing contained in this Contract shall create any contractual relation between any Subcontractor and the Owner.

30. Owner's Authority

The Owner shall give all orders and directions contemplated under this Contract and specifications, relative to the execution of the work. The Owner shall determine the amount, quality, acceptability and fitness of the several kinds of work and materials which are to be paid for

under this Contract and shall decide all questions which may arise in relation to said work and the construction thereof. The Owner's estimates and decisions shall be final and conclusive, except as herein otherwise expressly provided. In case any question shall arise between the parties hereto relative to said Contract and specifications, the determination or decision of the Owner shall be a condition precedent to the right of the Contractor to receive any money or payment for work under this Contract affected in any manner or to any extent by such question.

The Owner shall decide the meaning and intent of any portion of the specifications and of any plans or drawings where the same may be found obscure or be in dispute. Any differences or conflicts in regard to their work which may arise between the Contractor under this Contract and other Contractors performing work for the Owner shall be adjusted and determined by the Owner.

31. 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 his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his 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 construction operations, and to maintain the work site in a neat and orderly fashion. Special attention shall be given to the cleanliness and function of the access driveway and City roads.
- 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 his operations, and to put the site in a neat, orderly condition.

32. General Guarantee

Neither the final certificate of payment nor any provision in the Contract Documents, nor partial or entire occupancy of the premises by the Owner, shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall 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. The Owner will give notice of observed defects with reasonable promptness.

33. Conflicting Conditions

Any provisions in any of the Contract Documents which may be in conflict or inconsistent with any of the paragraphs in these General Conditions shall be void to the extent of such conflict or inconsistency.

34. Notice and Service Thereof

Any notice to any Contractor from the Owner 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 his last given address, or delivered in person

to the said Contractor or his authorized representative on the work.

35. Protection of Lives and Health

"The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the site, which occur as a result of his prosecution of the work. The safety provisions of applicable laws and building and construction codes, in addition to specific safety and health regulations described by Chapter XIII, Bureau of Labor Standards, Department of Labor, Part 1518, Safety and Health Regulations for Construction, as outlined in the Federal Register, Volume 36, No.75, Saturday, April 17, 1971. Title 29 — LABOR, shall be observed and the Contractor shall take or cause to be taken, such additional safety and health measures as the Contracting Authority may determine to be reasonably necessary."

36. Other Prohibited Interests

No official of the Owner who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving any architectural, engineering, 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 the Owner who is authorized in such capacity and on behalf of the Owner to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part thereof, any material supply contract, subcontract, insurance contract or any other contract pertaining to the project.

37. Suspension of Work

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

38. Binding Dispute Resolution

For any claim, the method of binding dispute resolution shall be litigation in a court of competent jurisdiction in Russell County, Alabama.

General Specifications

General Notes:

1. Contractor's price shall include all items necessary to furnish and install all materials, including labor, equipment, mobilization and any overhead and profit, except items noted as excluded in Contractor's proposal.
2. The Phenix City Engineering Department shall be notified 72 hours prior to beginning work and 24 hours prior to resuming work. (Phenix City Engineering Department (334)-448-2760.)
3. Contractor shall not proceed with any construction when unforeseen conditions, obstructions and/or differences exist that may not have been known prior to construction. Such conditions shall be immediately brought to the attention of the Owner. The Contractor shall assume full responsibility for all necessary revisions due to failure to give such notification.
4. Contractor shall bring any discrepancies in site conditions and prior work to the Owner of record's attention before any additional work is performed. Contractor shall notify the engineer of record if any discrepancies are found in the field which may impede the progress of construction due to unforeseen circumstances. Clarification shall be in writing prior to proceeding with work. If contractor proceeds with work without prior written approval of clarification, work shall be corrected or replaced at contractor's time and expense.
5. Contractor is responsible for the repair of any property damage caused from construction including but not limited to right of way, buildings, public utilities, fences, curb, gutter, etc. Contractor is responsible for damage to any existing item and material inside or outside construction limits.
6. All construction and improvements shall be in accordance with all local city and/or county and utility companies' standards and specifications having jurisdiction.
7. Contractor shall maintain the site in a manner so that workmen and the public are protected from injury and so that OSHA regulations are being followed.
8. The contractor shall maintain full coordination with the Owner regarding the project sequences and schedule. Variation in sequences and schedule may warrant a change in the plans, and must be approved by the engineer of record.
9. All construction debris and other waste material shall be disposed of off-site by the contractor in accordance with applicable regulatory agency requirements.
10. Contractor shall restore all disturbed areas to existing conditions or better.
11. The contractor will be responsible for required repairs to public roads caused by his activities. It is the contractor's responsibility to meet with the City of Phenix City Engineering Department to agree upon and record the conditions of the roads before construction commences.
12. Site security and equipment storage shall be the responsibility of the contractor. Location of equipment storage shall be approved by the Phenix City Engineering Department.
13. NPDES Permit coverage is not required for this project.
14. Fuel tanks shall not be left on the right of way overnight. Trucks hauling chemicals, fertilizers, etc., shall not be left unattended.

Erosion and Sediment Control:

1. The Contractor shall perform construction so as not to adversely impact the local environment in violation of regulations enforced by the City of Phenix City, the Alabama Department of Environmental Management (ADEM), or the Environmental Protection Agency (EPA). If the Contractor is found to be in violation, the work will be stopped until conditions are restored to a satisfactory state.

Traffic Control:

1. Traffic control shall be furnished, installed, sequenced, and maintained by the contractor.
2. All black on orange construction signs shall be fabricated using types IV or VIII fluorescent orange reflective sheeting material for the sign background.
3. Where the location of a required sign falls in a driveway, sidewalk, bridge, etc. or where the visibility of a sign is limited to the traveling public, the location shall be adjusted as directed by the engineer.
4. The contractor is to remove, relocate or cover during construction and then reset or uncover upon completion of a particular section any conflicting in-place roadway signs and delineators, as directed by the engineer. Signs requiring removal shall be stockpiled as directed by the engineer.
5. The contractor shall place all advance warning signs before proceeding with his work. Signs shall be placed in order, in the direction of traffic and removed in reverse order.
6. All vehicles, equipment, personnel (except flaggers), and their activities, are restricted at all times to one side of the pavement unless otherwise authorized by the engineer.
7. Construction signs mounted on temporary supports shall be mounted at a minimum height of 5 feet.
8. Flaggers shall be properly attired, equipped with staff mounted stop/slow paddles in sight of each other, or have direct communication at all times. Flagger station location may be varied from those shown based on roadway alignment and conditions at the time of the lane closure.
9. Flaggers are to be used when directed by the engineer. Signs shall be placed at the appropriate time, and shall be covered or removed when flaggers are not on duty and during non-working hours.
10. All traffic control devices that are not applicable at any specific time shall be covered or removed as directed by the engineer.
11. The contractor shall make provisions for the safety of pedestrian traffic crossing the work zone during construction.
12. Signs on temporary supports are to be removed or covered when no work is being performed or at the completion of the day's operation.
13. Channelizing devices are to be extended to a point they are visible to approaching traffic.

Shotcrete Lining of Roadway Pipes/Culverts Specifications

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Shotcrete Lining of Roadway Pipes/Culverts Specifications

1. General Notes

- 1.1. All repairs should cause minimal loss in flow capacity and should increase the strength of the structure to maintain proper horizontal and vertical profiles of the roadway above.

2. Installation Crew

- 2.1. Foreman shall have experience including as an operator/applicator of the equipment/product required to meet the proposal.
- 2.2. Operators/applicators shall have experience in proposed construction within storm drainage systems and shall have successfully demonstrated all of the duties for which he/she shall be responsible on this project.
- 2.3. Operator/applicator responsibilities include but are not limited to the following:
 - 2.3.1. Ensure that all surfaces to be lined are clean and free of laitance and loose material, using air and water to blast debris from pipes/culverts.
 - 2.3.2. Regulate material content so as to provide a proper mix that will be plastic enough to give good compaction and low percentage of rebound without sagging.
 - 2.3.3. A procedure should be followed so that corners are filled with material to eliminate voids as much as possible in the lining and to prevent loss of drainage flow.
 - 2.3.4. Determine necessary operating procedures for placement of the lining material in confined areas, over extended distances and/or around unusual obstructions where placement methods may need to be adjusted to provide adequate structural function.
 - 2.3.5. Crews should be directed when to start and stop if material placement is not conformance to the placement guidelines.
 - 2.3.6. Ensure that any pockets of structurally unsound material are removed and replaced.
 - 2.3.7. The lining should be constructed neatly and in a workmanlike manner.
 - 2.3.8. Crews shall have successfully demonstrated all of the duties for which they shall be responsible on this project as specified by the product's required construction procedures.

3. Equipment Certification

- 3.1. The equipment to be used for applying the products should be manufactured or approved by the protective coating manufacturer and Applicator personnel should be trained and certified for proper use of the equipment.
- 3.2. Concrete batching and mixing equipment shall be used that is capable of proportioning and mixing all ingredients (except water in case of dry-mix equipment) at a rate that will provide adequate production and with an accuracy that will ensure uniformity of batches. Weighing equipment shall be capable of batching with the accuracy specified in ASTM C-94. Volumetric equipment shall be capable of batching with the accuracy specified in ASTM C-685.

4. **Testing Agency Qualifications**

- 4.1. Contractor shall secure, at his expense, the services of a testing laboratory meeting the requirements of ASTM E-329 for Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection. The testing laboratory shall be normally engaged in the testing of proposed materials required for the lining construction. The Contractor shall submit the qualifications of the testing agency to the owner for approval in accordance with the requirements for submittals contained in this specification. The materials testing laboratory shall make all test to provide the quality control that shows that the materials provided meet or exceed the requirements of this specification. As interpretations of the test results are required, contractor shall further be responsible for securing the services of an independent Professional Engineer licensed in the State of Alabama who shall review and certify the test results. Certified test results shall be submitted by contractor to owner in triplicate.

5. **Structural Design Parameters**

- 5.1. Structure condition should be considered a partially deteriorated gravity pipe.
- 5.2. Soil type should be considered saturated for maximum performance of the product.
- 5.3. Design thickness should be based on design requirements found in the design standards listed for each product/process throughout this document.
- 5.4. Ovality of the pipe shall not be greater than 10%.
- 5.5. The soil load used for design shall be 120 pounds per cubic foot.
- 5.6. The Traffic Load will be AASHTO HS-20-44 Highway.
- 5.7. Soil Modulus shall be 1000 psi.
- 5.8. The Factor of Safety shall be 2.0.
- 5.9. The soil cover shall be measured as the distance from grade to the crown of the pipe.
- 5.10. The water table shall be considered saturated condition (same elevation as the soil cover at the top of the pipe).
- 5.11. The design life shall be a minimum of 50 years.
- 5.12. All designs must be performed by a Professional Engineer licensed in the State of Alabama and submitted with calculations prior to performing the work. Calculations should be clear and should reference applicable the American Society for Testing and Materials (ASTM), American Concrete Institute (ACI), National Association of Corrosion Engineers (NACE), and the Society for Protective Coatings (SSPC) standards.
- 5.13. Designs calculations shall include Flexural Strength and Flexural Modulus capable of meeting all the load requirements based on the aforementioned design parameters and those required for this specific site.
- 5.14. Third party testing shall be used to confirm Flexural Strength used on this project.
- 5.15. Third party testing shall be used to confirm long term Flexural Modulus of Elasticity. This third party testing will verify the long term reduction factor (Creep Analysis) of a minimum of 50%
- 5.16. This long term reduction factor verification shall be conducted utilizing ASTM D2990-01 via a third party independently certified laboratory.

6. **Approved Lining**

6.1. Shotcrete

7. **Product**

7.1. Materials used in Shotcrete shall conform to ASTM C-1436 with further designations.

7.2. Portland Cement conforming to ASTM C-150, Type 1, unless otherwise designated.

7.3. Aggregate shall be naturally siliceous sand conforming to the requirements of ASTM C-33; unless otherwise designated.

7.4. Aggregate shall not contain less than 3% not more than 6% moisture.

7.5. The combined gradation of coarse and fine aggregates shall conform to the following unless otherwise designated:

Sieve Size (U.S. Standard) <u>Square Mesh</u>	Percent by Weight Passing <u>Individual Sieve</u>
1 inch	---
¾ inch	---
½ inch	100
3/8 inch	95-100
No. 4	72-85
No. 8	52-73
No. 16	36-55
No. 30	20-38
No. 50	7-20
No. 100	2-12
No. 200	0-5

**Once the concrete mix is batched, it shall be passed through a sieve to remove all large particles before placing the hopper of a cement gun. Each batch shall be completely discharged before recharging is begun.

7.6. Only fresh, potable water shall be used in mixing.

7.7. Water shall not be added to the mix before it enters the cement gun. Quantities of water shall be controlled by a valve at the nozzle of the gun. Water content shall be adjusted as required for proper placement, but shall in no case exceed four gallons per sack of cement, including the water contained in the aggregate. Contractor shall not add water other than at the nozzle.

7.8. Admixtures shall comply with ASTM C-1141 and shall be subject to the approval of Engineer. Admixtures containing calcium chloride or triethanolamine shall not be used. Admixtures used in combination shall be physically and chemically compatible and shall be so certified by the manufacturer. Admixtures shall be products of a single manufacturer who shall provide, as necessary, assistance and advice to the Engineer on the proper use of admixtures at no increase in contract price.

7.9. Time of setting shall be determined by contractor in accordance with ASTM C-266, except that the accelerator shall be added to 50 grams of cement, together with the water to produce a water to cement ratio of 0.40, in varying percentages expected to be used in the concrete installation. The minimum possible time interval shall be used to attain the proper mixing without disturbing the initial set of the paste.

- 7.10. The compressive strength shall be determined by contractor in accordance with ASTM C-109, except that the accelerator in varying percentages expected to be used in the concrete mix design shall be added to the mortar prepared with water cement ratio of 0.40. In order to accomplish the molding of the specimen without disturbing the initial setting of the mortar, the intervals of time in the above specification are hereby waived.
- 7.11. Mixed material shall be used within 45 minutes after adding cement or shall be disposed of at contractor's expense. Rebound materials shall not be reused.
- 7.12. The accelerating additive shall be added immediately prior to depositing the materials in the placing equipment or if in liquid form may be accurately proportioned into the water supply at the application nozzle. Dry additives shall be accurately proportioned and thoroughly mixed with the other ingredients.
- 7.13. Remixing or tempering shall not be permitted.
- 7.14. Mix proportions shall be controlled by weight batching or volume batching meeting the requirements of ASTM C-685. Other volume batching procedures may be used, if approved by owner, provided a minimum of one weight batching is made every 4 hours for control purposes to ensure that the specified mix design is being achieved.
- 7.15. Ready mix concrete shall comply with ASTM C-94 except when Shotcrete equipment is capable of adding water and mixing the materials in the dry state, in which case it shall comply with ASTM C-685.
- 7.16. Reinforcing steel shall meet the requirements of ASTM A-615, Grade 60 unless otherwise designated.
- 7.17. Welded wire fabric or wire mesh shall conform to ASTM A-185. Unless otherwise specified, the wire mesh shall be 2 inches by 2 inches – 12/12 gauge galvanized welded wire fabric. Unless otherwise specified, welded wire fabric shall be used as reinforcement. Equivalent deformed bars will be acceptable if the minimum depth of concrete required over the reinforcement will be obtained.
- 7.18. Metal accessories, including all spacers, ties, fasteners, and other devised shall be provided for properly spacing, placing, and supporting the reinforcement.
- 7.19. Wire fabric shall be rolled into cylinders and placed circumferentially on hook bolts or support anchors. Anchors shall be 24-inch centers each way.
- 7.20. Laps shall be tied with 16 gauge wire at 12 inch spacing.
- 7.21. The full area of reinforcement shall be held firmly in position by means of 16 gauge wire ties in a rigid position to withstand impact of the concrete application without displacement.
- 7.22. Reinforcement shall not be less than 1 inch from the surface on which the concrete is to be placed, and there shall not be less than 1 inch between the reinforcement and the final surface of the gunite.
- 7.23. Mesh or fabric shall be lapped at least one full mesh longitudinally and the same width in inches transversely.
- 7.24. Installation of reinforcement shall be inspected and approved by the Engineer prior to the commencement of any concrete placement operations. This shall not, however, release the contractor in any way from his responsibility of ensuring the proper performance of the work.
- 7.25. Contractor shall provide mechanical connections that develop at least 125 percent of the specified yield strength of the steel in tension.

- 7.26. Install #4 reinforcing steel bars at 8" center, 24" long and 2-#4 reinforcing steel bars longitudinally at the crown for the entire length of sewer segments tied to the wire mesh. Reinforcing steel shall be placed in accordance with CRSI "Recommended Practice for Placing Reinforcing Bars." Reinforcing placement shall be reviewed by the owner's representative before concrete is placed. (Note: Typical language for installation including steel bar reinforcement-Engineer shall specify the use of steel bars and steel placement on project specific basis.)
- 7.27. Reinforcement shall be clean and free from loose mill scale, loose rust, oil or other coatings that interfere with bonding.
- 7.28. Fiber reinforcement shall be steel fibers or polypropylene fibrillated fibers conforming to the requirements of ASTM C-1116 for fiber-Reinforced Concrete and Shotcrete. Unless otherwise designated by the Engineer, polypropylene or steel fiber shall be added to the concrete mix at a rate recommended by the manufacturer of fiber.
- 7.29. Unless otherwise specified by the Engineer, steel fibers shall be 0.016 inch diameter, and between ½ and 1 ½ inches long in amounts up to 2 percent by volume of concrete; and collated polypropylene fibers in amounts greater than 0.1 percent by volume of fiber added.

8. **Delivery, Storage, and Handling of Materials**

- 8.1. Contractor shall be solely responsible for the proper delivery, storage, and handling of materials to prevent contamination, segregation, extreme temperature exposure or damage as prohibited by the manufacturer, deformation of the product that reduces the strength and durability of the material.
- 8.2. Damaged or unsuitable products shall be promptly removed from the job site and shall be replaced with suitable materials.

9. **Execution**

9.1. Flow Control

- 9.1.1. Contractor shall provide for maintenance of flow in the affected portions of the drainage system during installation of the lining.

10. **Cleaning**

- 10.1. Prior to the installation of the lining, contractor shall thoroughly clean the pipe/culvert designated to receive the liner. Cleaning shall constitute removal of all solids, roots, deposits and other matter which would preclude the installation of the concrete liner into the sewer line.

11. **Inspection of Pipelines**

- 11.1. Prior to the installation of lining, contractor shall inspect the pipe/culvert designated to be lined.

12. **Surface Preparation**

- 12.1 Contractor shall remove all unsound and loose material before applying lining. Contractor shall chip or scarify any area to be repaired to remove offsets which would cause an abrupt change in thickness without suitable reinforcement. All edges shall be tapered so as to leave no square shoulders at the perimeter of a cavity. After all chipping work has been completed, the entire surface shall be thoroughly sandblasted and cleaned with compressed air blast and jet water blast using a cement gun or comparable tool to remove all dirt, debris and loose particles to permit a satisfactory bond between the existing surface and the lining. Air pressure in the cement gun or comparable tool shall be less than 50 psi.

- 12.2 Contractor shall sandblast existing surfaces that do not require chipping to remove paint, oil, grease, silt, slime and other contaminants, and provide a roughened surface for proper bonding of the lining. Blasting of steel surfaces shall be in compliance with SSPC-SP6.
- 12.3 The chipped and blasted surfaces shall be dampened but without visible free running water. Lining shall not be placed on any area where free running water exists.
- 12.4 Loose bricks, in areas that are not specifically mentioned, shall be removed and the void filled with concrete material. This shall apply only to isolated situations where only a few (one to ten) are loose.
- 12.5 Void areas that extend beyond the outside plane of the sewer or manhole into the surrounding soil shall be filled and stabilized using pressure injected grout to the outside plane of the sewer barrel.
- 12.6 Contractor shall fill all voids in the sewer and manhole barrel with concrete or other material approved by the Engineer.
- 12.7 Contractor shall repair any damage to the existing structure resulting from his cleaning or void filling operations at no cost to the owner.
- 12.8 Contractor shall remove and properly dispose of, as approved by the Engineer, all debris and rebound from the pipe/culvert that results from his cleaning and lining operations. No debris shall be permitted to wash down into the drainage system.
- 12.9 The contractor shall contact utilities to identify all pipe and conduit in the pipe/culvert to be rehabilitated.

13. Placement of Lining

- 13.1 Contractor shall place concrete using suitable delivery equipment and procedures that will result in concrete in place with a thickness as determined by a Professional Engineer licensed in the State of Alabama.
- 13.2 Contractor may use either wet mix or dry mix method of applying concrete. Contractor shall control thickness, method of support, air pressure and/or water content of concrete to preclude sagging or sloughing off. Contractor shall discontinue concreting or provide suitable means to screen the nozzle stream if wind or air currents cause separation of the nozzle stream during placement.
- 13.3 Contractor shall dampen absorptive substrate surfaces prior to placement of concrete to facilitate bond and to reduce the possibility of shrinkage cracking developing from premature loss of mixing water.
- 13.4 Contractor shall broom or scarify the surface of freshly placed concrete to which, after hardening, additional layers of concrete are to be bonded. All surfaces shall be dampened just prior to application of succeeding layers.
- 13.5 Contractor shall fill with sound material all corners and any areas where rebound cannot escape or be blown free. Contractor shall complete the corners between the web and the flanges of structural steel before application to the flat areas.
- 13.6 Contractor shall provide a supply of clean, dry air adequate for maintaining sufficient nozzle velocity for all parts of the work and , if required, for simultaneous operation of suitable flow pipe for cleaning away rebound.
- 13.7 Rebound losses shall not exceed and average of 25% by weight of the material passing through the nozzle. Rebound shall be removed and disposed of at contractor's expense on a daily basis.

- 13.8 If the flow of material at the nozzle is not uniform and slugs, sand spots or wet sloughs result, the nozzle man shall direct the nozzle away from the work until the faulty conditions are corrected. Such defects shall be replaced as the work progresses at no increase in contract price.
- 13.9 Concreting shall be suspended if air velocity separates the cement from the sand at the nozzle.
- 13.10 The nozzle shall be held at the proper distance (minimum of 3 feet except in close quarters) and at the proper angle to secure maximum compaction with minimum loss of material. This angle shall be as near perpendicular to the surface as work permits.
- 13.11 Construction joints or end of day's work joint shall be sloped off to a thin, clean 45 degree slope. Before placing the adjoining work, clean the sloped portion and adjacent concrete and then moisten and scour with an air jet.
- 13.12 Contractor shall not place concrete through more than one layer of reinforcing steel rods or mesh in one application. Contractor shall test to ascertain if any voids or sand pockets have developed around or behind the reinforcement by probing with an awl or other pointed tool after the concrete has achieved its initial set, by removal of randomly selected bars or by coring or other suitable means.
- 13.13 Prior to the application of the first layer of concrete, contractor shall furnish and install adequate ground wires, measuring pins or other approved means to establish the thickness, surface places and finish lines of the concrete. Contractor shall maintain specified tolerances by keeping ground wires secure and taut.
- 13.14 Pins shall be non-corrosive and so designed as not to cause infiltration of water through the concrete. Pins shall be installed on 5-foot centers in each direction and at other locations as may be directed by the Engineer.
- 13.15 Contractor shall not place concrete if drying or stiffening of the mix takes place at any time prior to delivery to the nozzle. No rebound or previously expended material shall be used in the concrete mix.
- 13.16 Contractor shall remove all overspray ore rebound prior to final set and before placement of concrete material on such adjacent surface.
- 13.17 Contractor shall not apply concrete against surfaces where frost is present or when the air temperature is below 40°F. Contractor shall provide for measuring the air temperature within the sewer at no less than once every 30 minutes at all locations where concrete is to be placed during freezing weather.
- 13.18 Contractor shall not apply concrete in areas where running water exists.
- 13.19 Contractor shall protect concrete from freezing during installation and during the curing period.
- 13.20 Contractor shall protect in-place reinforcing from excessive construction traffic and other work.
14. **Surface Finish**
- 14.1 Contractor shall bring the lining material to an even plane and well-formed corners where applicable.
- 14.2 After the body coat has been placed, the surface shall be trued to remove high areas and expose low areas. Low areas must be filled to ensure a true, flat surface.
- 14.3 After the surface has been trued, the entire surface shall receive a treatment providing a smooth finish surface with any brush finish (if concrete) to be finished parallel to the flow.

16. **Index of Specifications**

16.1 Shotcrete Lining shall adhere to the applicable specifications and procedures set forth in the following to achieve the design life and structural qualities aforementioned for pipe lining:

- (a) ACI 506R – Guide to Shotcrete
- (b) ACI 506.1R – Guide to Fiber-Reinforced Shotcrete
- (c) ACI 506.2 – Specification for Materials, Proportioning, and Application of Shotcrete
- (d) ACI 506.4R – Guide for the Evaluation of Shotcrete
- (e) ACI 506.5R – Guide for Specifying Underground Shotcrete
- (f) ACI C-06 – Application and Use of Shotcrete
- (g) ASTM C1116 – Standard Specification for Fiber-Reinforced Concrete
- (h) ASTM C1385 – Standard Practice for Sampling Materials for Shotcrete
- (i) ASTM C1398 – Standard Test Method for the Laboratory Determination of the Time of Setting of Hydraulic Cement Mortars Containing Additives for Shotcrete by the Use of Gillmore Needles
- (j) ASTM C1480 – Standard Specification for Packaged, Pre-Blended, Dry, Combined Materials for Use in Wet or Dry Shotcrete Application
- (k) ASTM C1609 – Standard Test Method for Flexural Performance of Fiber-Reinforced Concrete (Using Beam With Third-Point Loading)

Pipe Repairs in Phenix City

Legend

Pipe Work Locations

2747 Summerfield Place

3608 Kelly Court

Stadium Drive (North)

2106 Stadium Drive (South)

399 Mimosa Road

1305 Crawford Road

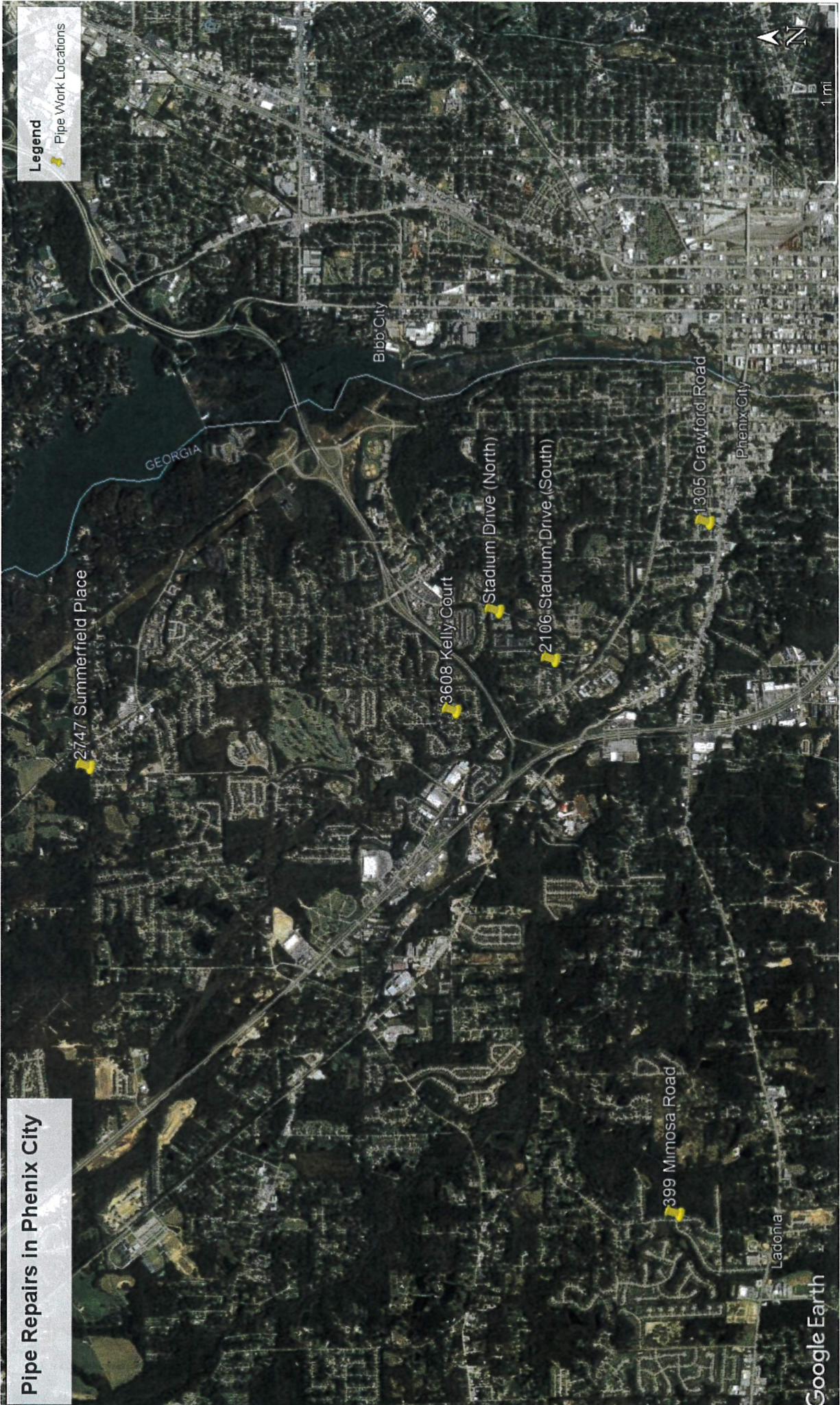
Bibb City

Phenix City

Ladonia

Google Earth

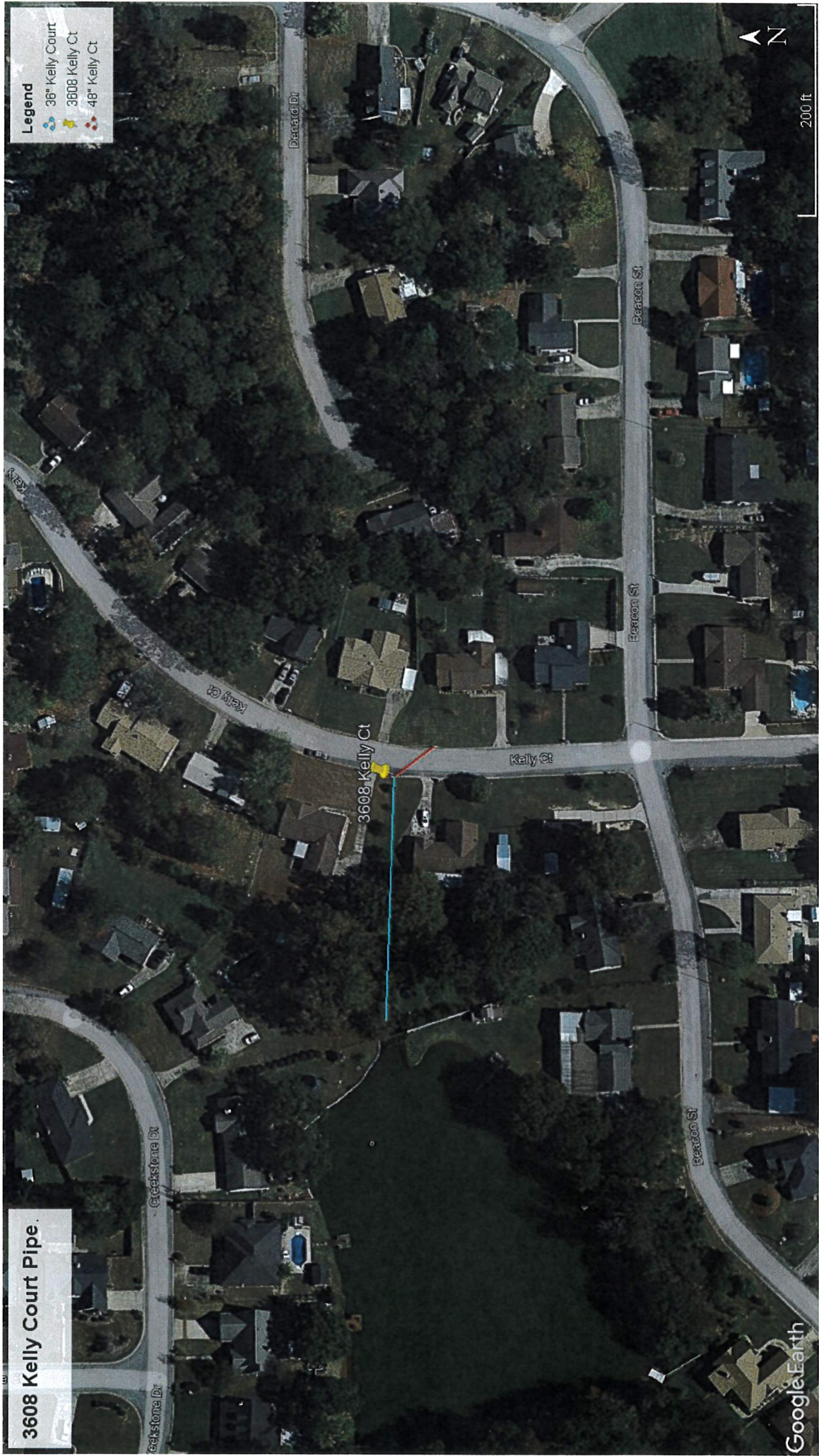
1 mi



3608 Kelly Court Pipe

Legend

- 36" Kelly Court
- 3608 Kelly Ct
- 48" Kelly Ct



2747 Summerfield Place

Legend

- 2747 Summerfield Place
- 48" CMP Pipe

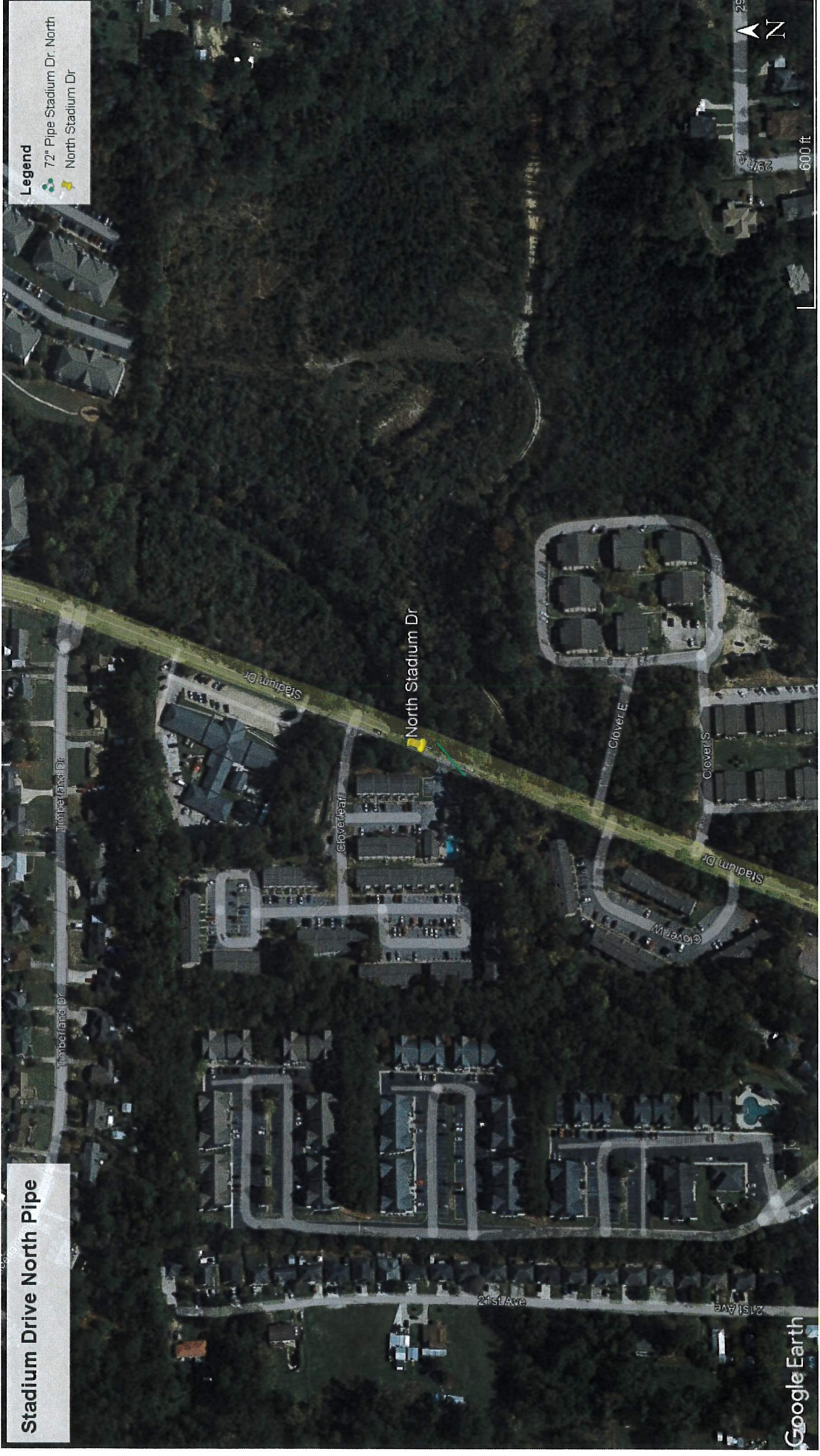


500 ft.

Stadium Drive North Pipe

Legend

- 72" Pipe Stadium Dr. North
- North Stadium Dr



600 ft

Stadium Drive South Pipe

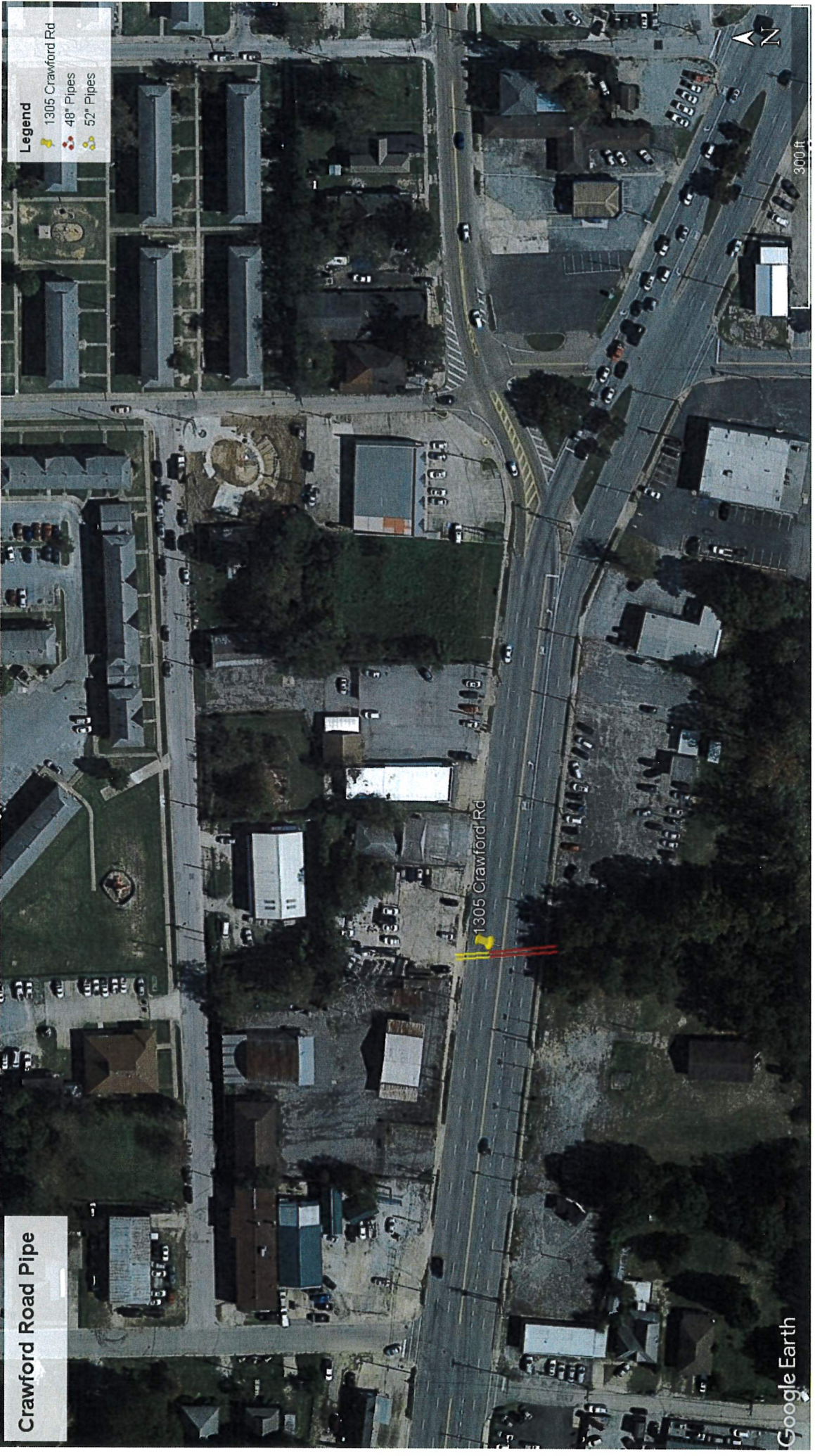
- Legend**
- 72" Stadium Dr South
 - Stadium Dr South



Crawford Road Pipe

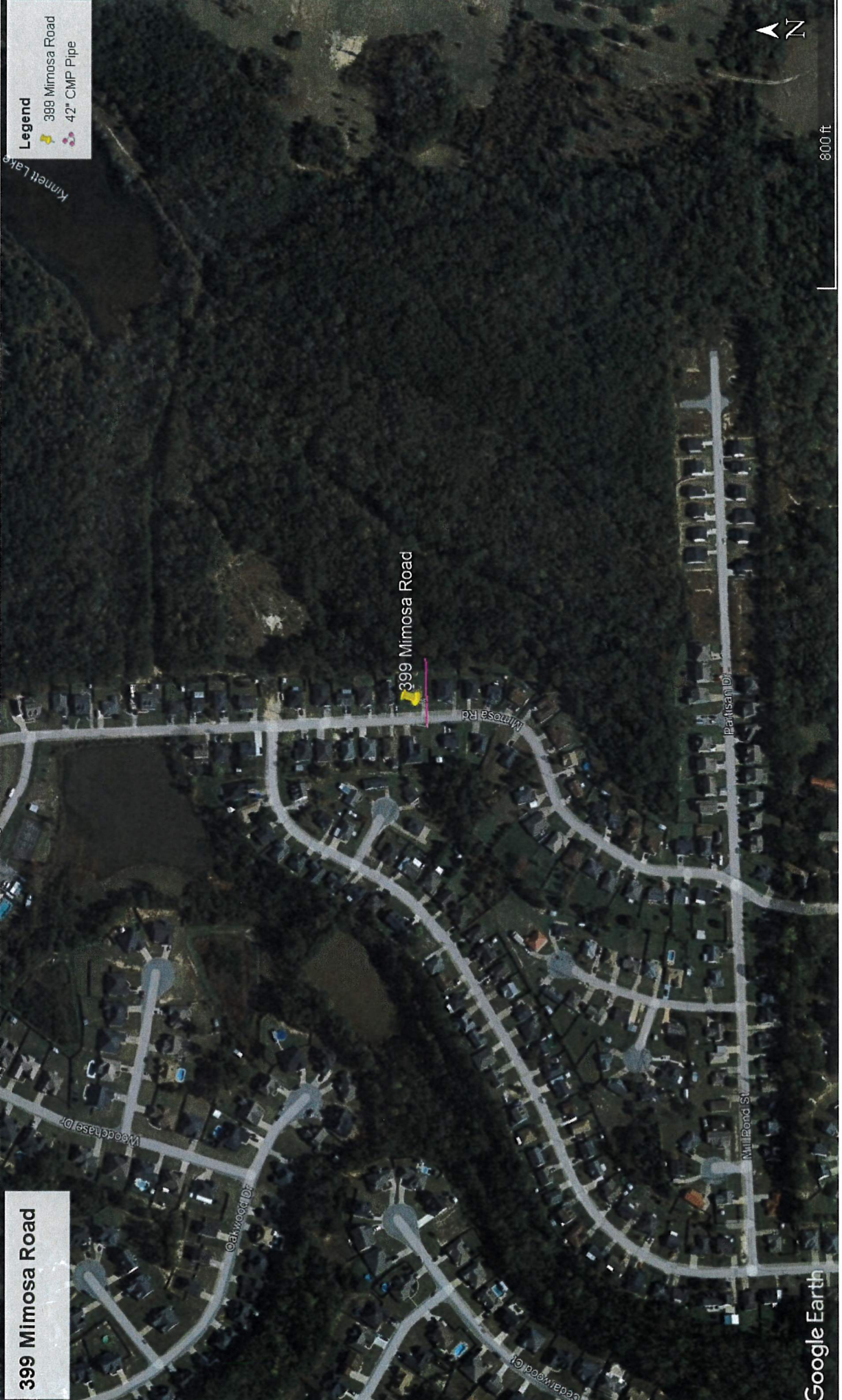
Legend

- 1305 Crawford Rd
- 48" Pipes
- 52" Pipes



399 Mimosa Road

Legend
399 Mimosa Road
42" CMP Pipe



800 ft

Google Earth