07/17/2025

TO: **All Potential Bidders**

SUBJECT: **DOCO Drainage Improvements 2025**

Bid Ref. **#25-081**

Bid Opening Date & Time: **July 30, 2025 @ 2:30 p.m.**

ADDENDUM NO. 2
The items contained in this addendum are added to and/or deleted from and become part of the specifications and proposal documents for the above-referenced Invitation to Bid. Bidders **must acknowledge receipt** of the Addendum on the Bid Form, located in the invitation to bid, when the bids are submitted.

QUESTIONS AND ANSWERS

1. Can we get an excel copy of the bid form? ***Answer: The bid form has been added to the link:*** https://www.dropbox.com/scl/fo/gtff4g8pqiiwjquv66qe6/AAqoQxWU-XuzCBMnMVQRhuk?rlkey=rf45t9dg6lni2nb7qxmiaqew8&st=s37u48yp&dl=0

2. What is the frequency of compaction testing for backfill. ***Answer: Per Specification Section 02317, Trench Excavation and Backfill, testing frequency for trenches and confined areas is 1 test per two-foot vertical lift.***

3. Plans show that the headwall at the "River Pointe Cartpath Drainage" location to be a straight wall headwall. Would the County rather have a headwall with wingwalls? ***Answer: The County would like to stay with the straight wall configuration as show on the plans. There is an existing watermain in the vicinity of the headwall and the alternative may come in conflict with it. Any scouring concerns will be addressed in the field during construction. Precast or cast in place headwalls are acceptable.***

End of Addendum 2

Ricky Gladney
Ricky Gladney, Buyer

Cc: Jeremy Brown, Engineering Project Manager
Darlene Hollis, Procurement Specialist
Jawahn Ware, County Clerk, Procurement Manager

07/02/2025

TO: **All Potential Bidders**

SUBJECT: **DOCO Drainage Improvements 2025**

Bid Ref. **#25-081**

Bid Opening Date & Time: **July 30, 2025 @ 2:30 p.m.**

ADDENDUM NO. 1
The items contained in this addendum are added to and/or deleted from and become part of the specifications and proposal documents for the above-referenced Invitation to Bid. Bidders **must acknowledge receipt** of the Addendum on the Bid Form, located in the invitation to bid, when the bids are submitted.

ADDITIONS TO SCOPE OF WORK
https://www.dropbox.com/scl/fo/gtff4g8pqiiwjquv66qe6/AAqoQxWU-XuzCBMnMVQRhuk?rlkey=rf45t9dg6lni2nb7qxmiaqew8&st=s37u48yp&dl=0
Link to project drawings.

End of Addendum 1

Ricky Gladney
Ricky Gladney, Buyer

Cc: Jeremy Brown, Engineering Project Manager
Darlene Hollis, Procurement Specialist
Jawahn Ware, County Clerk, Procurement Manager

CITY OF Albany GEORGIA

June 30, 2025

INVITATION TO BID
DOCO Drainage Improvements 2025
Bid Reference No. 25-081

Sealed Bids will be received by the City of Albany, Procurement Division, Suite 260, 222 Pine Avenue, Albany, Georgia, on behalf of the Dougherty County Board of Commissioners until **2:30 p.m., July 30, 2025,** for the **DOCO Drainage Improvements 2025**, in accordance with Drawings, Specifications and other Contract Documents. Bids will be opened and publicly read aloud at the above stated time and place. The scope of work is contained in the bid documents.

A **Mandatory Pre-Bid conference** will be held on **July 15, 2025, at 10:00 a.m.** in the Procurement Division, 222 Pine Avenue, Suite 260, Albany, Georgia 31701. **All interested vendors are required to attend.**

This project will be bid on a **unit price basis** for all specified work and will be awarded to the responsive and responsible bidder submitting the lowest total base bid.

5% Bid Bond is required of all bidders. Bid bond must be present for bid to be read or considered. 100% Performance and Payment bonds will be required of the successful bidder.

Bid documents are available at the Procurement Division, www.albanyga.gov and the Georgia Procurement Registry. Plans, specifications and contract documents may be inspected at the Procurement Division, 222 Pine Avenue, and the Dougherty County Public Works Department, 2038 Newton Road, Albany, Georgia. The City of Albany and Dougherty County strongly encourage Small Business firms to participate in this bid. Dougherty County Board of Commissioners reserves the right to reject any and all bids and to waive any informalities in the bidding process.

All corporations should provide the corporate seal, a copy of the Secretary of State Certificate of Incorporation, and a listing of the principals of the corporation with bid.

For additional information, contact Ricky Gladney, Buyer, at (229) 302-1455. Submit all questions via email to rgladney@albanyga.gov cc: jswilliams@albanyga.gov and kross@albanyga.gov. The deadline for questions is **July 22, 2025, at 2:30 p.m.** Questions received after this deadline may not be answered. Replies of substance will be in the form of written addenda and made available to all potential bidders.

City of Albany
Joshua Williams, CPPB
Procurement Manager

DOUGHERTY COUNTY
PROCUREMENT DIVISION
ALBANY, GEORGIA
INSTRUCTIONS TO BIDDERS

These instructions will bind bidders to terms and conditions herein set forth, except as specifically qualified in special bid and contract terms issued with any individual bid.

1. The following criteria are used in determining low responsible bidder.
   (a) The ability, capacity and skill of bidder to perform required service.
   (b) Whether bidder can perform service promptly or within specified time.
   (c) The character, integrity, reputation, judgment, experience and efficiency of bidder.
   (d) The performance of previous contracts.
   (e) The suitability of equipment or material for County use.
   (f) The ability of bidder to provide future maintenance and parts service.
2. Payment terms are Net 30 unless otherwise specified. Favorable term discounts may be offered and will be considered in determining low bids if they are deemed advantageous to the County.
3. All bids should be tabulated, totaled and checked for accuracy. The unit price will prevail in case of errors.
4. All requested information should be included in bid envelope. All desired information must be **signed** and included for your bid to receive full consideration**. Failure to submit any required form will be cause for bid to be rejected as non-responsive.**
5. All questions, inquiries and requests for clarification shall be directed to Procurement.
6. For multi-year contracts the following clauses pursuant to OCGA 36-60-13 apply: (1) The contract shall terminate absolutely and without further obligation on the part of the County at the close of the calendar year in which it was executed and at the close of each succeeding calendar year for which it may be renewed; (2) The contract may provide for automatic renewal unless positive action is taken by the County to terminate such contract, and the nature of such action shall be determined by the County and specified in the contract; (3) The contract shall state the total obligation of the County for the calendar year of execution and shall further state the total obligation which will be incurred in each calendar year renewal term, if renewed; and (4) The contract shall provide that title to any supplies, materials, equipment, or other personal property shall remain in the vendor until fully paid for by the County.
7. Quote all prices F.O.B. Albany, Georgia or our warehouse or as specified in bid documents.
8. Each bid or proposal shall be clearly marked on the outside of the envelope as a Sealed Bid whether using a County furnished envelope or other envelopes.
9. Bid/Proposal must be received and stamped by the Procurement Office before time stipulated in bid/proposal documents. No responsibility will attach to any County representative or employee for premature opening of bid not properly addressed or identified.
10. If only one bid is received, the bid may be rejected and/or re-advertised, except in the case of only one known source of supply.
11. Bids **must** be received and stamped by the Procurement Office before the date and time stipulated in bid documents. The City of Albany assumes no responsibility for submittals received after the advertised deadline or at any office or location other than that specified herein, whether due to mail delays, courier mistake, mishandling, or any other reason. No responsibility will attach to any City representative or employee for premature opening of bids not properly addressed or identified. Bids received late will not be accepted, and the County will not be responsible for late mail delivery.
12. Should a bid be misplaced by the County and found later it will be considered.
13. Bids requiring bid bonds **will not** be read or considered if bond is not enclosed. Bond may be in the form of cash, certified check, cashier's check or Surety Bond issued by a Surety Company licensed to conduct business in Georgia.
14. All bidders must be recognized and authorized dealers in the materials or equipment specified and be qualified to advise in their application or use. A bidder at any time requested must satisfy the Procurement Office and County Commission that he has the requisite organization, capital, plant, stock, ability and experience to satisfactorily execute the contract in accordance with the provisions of the contract in which he is interested.
15. Any alterations, erasures, additions or omissions of required information or any changes of specifications, or bidding schedule are done at the risk of the bidder. Any bid will be rejected that has a substantial variation, such as a variation that affects the price, quality or delivery date (when delivery is required by a specific time).
16. When requested, SAMPLES will be furnished free of expense, properly marked for identification and accompanied by list where there is more than one sample. The County reserves the right to mutilate or destroy any samples submitted whenever it may be in the best interests of the County to do so for the purpose of testing.
17. County will reject any material, supplies or equipment that do not meet the specifications, even though bidder lists the trade name or names of such materials on the bid or price quotation form.
18. The unauthorized use of patented articles is done entirely at the risk of the successful bidder.
19. The ESTIMATED QUANTITY given in the specifications or advertisement is for the purpose of bidding only. The County may purchase more or less than the estimated quantity, and the vendor must not assume that such estimated quantity is part of the contract.
20. Only the latest model equipment as evidenced by the manufacturer's current published literature, will be considered. Obsolete models of equipment not in production will not be acceptable. Equipment shall be composed of new parts and materials. Any unit containing used parts or having seen any service other than the necessary tests will be rejected. In addition to the equipment specifically called for in the

specifications, all equipment catalogued by the manufacturer as standard or required by the State of Georgia shall be furnished with the equipment. Where required by the State of Georgia Motor Vehicle Code, vehicles shall be inspected and bear the latest inspection sticker of the Georgia Department of Revenue.
21. The successful bidder on motor vehicle equipment shall be required to furnish with delivery of vehicle, Certificate of Origin and Georgia vendors shall provide Georgia Motor Vehicle form MV1.
22. Prospective bidders are responsible for examining the location of the proposed work or delivery and determining, in their own way, the difficulties, which are likely to be encountered in the prosecution of the same.
23. All materials, equipment and supplies shall be subject to rigid inspection, under the immediate supervision of the Procurement Office and/or the Department to which they are delivered. If defective material, equipment or supplies are discovered, the contractor, upon being instructed by the Procurement Office, shall remove, or make good such material, equipment or supplies without extra compensation. It is expressly understood and agreed that the inspection of materials by the County will in no way lessen the responsibility of the contractor or release him from his obligation to perform and deliver to the County sound and satisfactory materials, equipment or supplies. The contractor agrees to pay the cost of all tests on defective material, equipment or supplies or allow the cost to be deducted from any monies due him by the County.
24. Unless otherwise specified by the procurement office all materials, supplies or equipment quoted herein must be delivered within thirty (30) days from date of notification or exception noted on bid sheet.
25. A contract **will not** be awarded to any corporation, firm or individual who is, from any cause, in arrears to the County or who has failed in any former contract with the County to perform work satisfactorily, either as to the character of the work, the fulfillment of the guarantee, or the time consumed in completing the work.
26. Reasonable grounds for supposing that any bidder is interested in more than one proposal/bid for the same item will be considered sufficient cause for rejection of all bids/proposals in which he is interested.
27. Unless otherwise specified the County reserves the right to award each item separately or on a lump sum basis, whichever is in the best interest of the County.
28. The County reserves the right to waive any minor discrepancies, reject any or all bids or proposals, and to purchase any part, all or none of the services, materials, supplies, or equipment specified.
29. Failure of the bidder to sign the bid or have the signature of any authorized representative or agent on the bid/proposal **IN THE SPACE PROVIDED will** be cause for rejection of the bid. Signature must be written in ink.
30. Any bidder may withdraw his bid at any time before the time set for opening of bids. No bid may be withdrawn without cause in the 60-day period after bids are opened.
31. It is mutually understood and agreed that if any time the Procurement Office shall be of the opinion that the contract or any part thereof is unnecessarily delayed or that the rate of progress or delivery is unsatisfactory, or that the contractor is willfully violating any of the conditions or covenants of the agreement, or is executing the same in bad faith, the Procurement Office shall have the power to notify the aforesaid contractor of the nature of the complaint. Notification shall constitute delivery of notice, or letter, to address given in bid/proposal. If after three working days of notification the conditions are not corrected to the satisfaction of the Procurement Office, he shall thereupon have the power to take whatever action he may deem necessary to complete the work or delivery herein described, or any part thereof, and the expense thereof, so charged, shall be deducted from any paid by the County out of such monies as may become due to the said contractor, under and by virtue of this agreement. In case such expense shall exceed the last said sum, then and in that event, the bondsman or the contractor, his executors, administrators, successors, or assigns, shall pay the amount of such excess to the County on notice by the Procurement Office of the excess due.
32. If the bidder proposes to furnish any item of a foreign make or product, he should write "Foreign" together with the name of the originating country opposite such item on bid/proposal.
33. Any complaint from bidders relative to the Invitation to Bid or any attached specifications should be made prior to the time of opening of bids, otherwise such complaint cannot be properly considered.
34. No vendor writing restrictive specifications for the County will be allowed to bid on the project.
35. Contracts may be cancelled by the County with or without cause with 30-day written notice.
36. Dougherty County has an equal opportunity purchasing policy. The County seeks to ensure that all segments of the business community have access to supplying the goods and services needed by the County programs. The County affirmatively works to encourage utilization of minority business enterprises in our procurement activities. The County provides equal opportunities for all businesses and does not discriminate against any vendors regardless of race, color, religion, age, sex, national origin, or handicap.
37. **All Corporations must provide the corporate seal and a copy of the Secretary of State's Certificate of Incorporation upon request.**
38. Local bidder (domiciled in Dougherty County) will receive bid in the event of tie bids. In the case of tie bids between out-of-town companies or between local concerns, evaluated as equal, bid will be recommended or awarded by chance coin toss, or drawing straws.
39. The contractor shall secure all permits, license certificates, inspections (permanent and temporary) and occupational tax certificate, if applicable, before any work can commence. Contractor as well as any and all known subcontractors must possess or will be required to obtain a City of Albany Occupational Tax Certificate or Registration.
40. **Prior to submitting bid, all bidders are encouraged to check the website at www.albanyga.gov or call the Procurement Office at 229-431-3211 for any subsequent addendums.**

PROCUREMENT FORM – REVISED 11/18/2021

DOCO DRAINAGE IMPROVEMENTS 2025
INSTRUCTIONS TO BIDDERS
Bid Reference No. 25-081

SCOPE OF SERVICES:
THIS PROJECT WILL BE CONSTRUCTED IN ACCORDANCE WITH THE 2013 SPECIFICATIONS OF THE GEORGIA DEPARTMENT OF TRANSPORTATION AND ANY SUPPLEMENTAL SPECIFICATIONS MODIFYING THE 2013 SPECIFICATIONS

1. **Background:** This project involves drainage improvements at 5 different locations within Dougherty County. The scope of work shall include all material, labor and equipment to demo existing conditions, and install storm drainage piping and structures. Includes approximately 136 LF of drainage pipe, 1 headwall, demolition of existing asphalt/concrete, 4 drainage structures, 360 SY of concrete installation, and site grading.

2. **Contractors bid**: shall include all necessary labor, materials, tools, equipment, and all other items necessary to complete the contract requirements in accordance with bid documents, special instructions, specifications, and all other provisions included in this invitation to bid. It is the bidder's responsibility to visit the jobsite and become familiar with the local conditions.

3. **Corporations:** All Corporations should provide the corporate seal, a copy of the Secretary of State Certificate of Incorporation, and a listing of the principals of the corporation with the bid.

4. **Bid Form:** Bids must be submitted on the bid form provided in this bid document to the City of Albany Procurement Division, 222 Pine Avenue, Suite 260, Albany, Georgia. Bid is for a **unit price** contract. Bid is for all work specified in this bid document and will be awarded to the lowest responsive and responsible bidder.

5. **Contract Time:** Completion time is **ninety (90) calendar days**, following the issuance of the Notice to Proceed. Performance will be monitored and documented by the Project Manager. Not completing the contract within the time specified may hamper the contractor's ability to secure future contracts with the County.

6. **Liquidated Damages**: Should the Contractor, or, in case of default, the Surety fail to complete the work within the time stipulated in the contract or within such extra time that may be allowed, charges shall be billed to the contractor or assessed against any money due or that may become due the Contractor at a rate of **three hundred dollars ($300)** for each day that expires after the allowed contract time for the completion and readiness of final payment until the Work is complete and ready for payment.

7. The Owner of this project is Dougherty County. The Owner reserves the right to reject any and all bids, to waive any informalities in the bid process, and to award the contract as may be in the best interest of the Owner or re-advertise for bids.
8. **Contract:** The successful bidder will be required to submit four (4) executed copies of the contract contained herein within ten (10) days following the issuance of the Notice of Award.

9. **INSURANCE**: In order to contract with the Dougherty County Board of Commissioners, suppliers/contractors providing professional, technical and/or construction services are required to provide acceptable proof of insurance coverage. Acceptable proofs of insurance: (i) a Certificate of Insurance with Additional Insured Endorsement (a Certificate of Insurance by itself is not acceptable) or (ii) Declaration Pages of the insurance policies listed below which show the Dougherty County Board of Commissioners as additional insured. The insurance company must be authorized to provide insurance in the State of Georgia.
   Required Insurance Policies and Endorsements:
   - Commercial General Liability of at least **$1,000,000** for bodily injury and property damage with the Dougherty County Board of Commissioners as additional insured.
   - Automobile/Vehicle Liability of at least **$500,000** each occurrence for bodily injury and property damage covering owned, non-owned, leased and hired autos/vehicles with the Dougherty County Board of Commissioners as additional insured.
   - Worker's Compensation in the statutory limits of Georgia and Employers' Liability with limits of liability of no less than **$100,000** of each accident/disease. These polices must also contain a waiver of subrogation in favor of the Dougherty County Board of Commissioners.
   - All insurance policies must provide that the Dougherty County Board of Commissioners will be notified within 30 days of any changes, restrictions and/or cancellation.
   - If applicable, Professional Liability in addition to above requirements, of at least **$500,000** each claim.

   SUBMIT WITH BID, specimen copy of Certificate of Insurance. Upon award of contract and prior to commencement of work under this contract, the successful bidder shall provide Dougherty County a Certificate of Insurance showing the type and limits of insurance specified herein with Dougherty County Board of Commissioners as an additional insurer.

10. **Georgia Security and Immigration Compliance Act:** The successful contractor will provide certification that they are in compliance with the Georgia Security and Immigration Compliance Act, certifying that the provisions of O.C.G.A § 13-10-91, Chapter 300-10-1, per the Georgia Department of Labor, if applicable, have been complied with in full. Pursuant to O.C.G.A §13-10- 90(2), all subcontractors entering into a contract or agreement for hire on this Project must be registered and participate in the Federal Work Authorization Program. Complete and submit a copy of the form, applicable to your company, and applicable Subcontractor Affidavits.

11. **Superintendent:** The contractor shall have a superintendent or representative on the site at all times while work is being performed. They will represent the contractor and all communications given to them shall be binding as if given to the contractor.

12. **Barricades and Warnings:** The contractor shall provide, erect, and maintain all necessary barricades, suitable and sufficient number of watchmen to direct traffic, and take all necessary precautions for the protection of the work and safety of the public. If necessary, barricades and obstructions shall be illuminated at night and lights shall be kept burning from sunset to sunrise.

13. **Removal of Trash and Rubbish:** The contractor shall be responsible for the removal and legal disposal of all waste, trash, and rubbish resulting from the work under this contract. Work site shall be kept clean and orderly during construction; trash shall be removed from

the site or adequately containerized daily. **Any precious metals belong to the owner. All other debris is to be taken to the Dougherty County Landfill.**

14. **Preservation of Property:** The contractor shall carry out their work with such care and by the proper methods to prevent damage to the property adjacent to the work or within streets, easement locations to the extent the owner may have rights therein, or other property of the owners or of others, whether adjacent to the work site or not, the removal, relocation, or destruction of which is not called for by the provisions of the contract documents; it being a condition of the execution of the contract that the work be performed in such manner that the property of others and other property of the owner shall not be damaged in any way. The word PROPERTY, as used, is intended to include among other types of property, public street improvements, storm and sanitary sewers, water lines and appurtenances, or other structures. Should any property be damaged or destroyed, the contractor at their own expense shall promptly, or within reasonable time, repair or make such restoration as is practical and acceptable to the owner of the damaged or destroyed property. In case of failure on the part of the contractor to repair or restore such property, or make good such damage or injury, the Building Inspector may within forty-eight (48) hours notice, proceed to repair, rebuild, or otherwise restore such property as may be necessary, and the cost thereof will be deducted from any monies due or which may become due the contractor under this contract agreement. The contractor shall, at all times in performance of the work, employ approved methods and exercise reasonable care and skill so as to avoid delay, damage, injury or destruction of existing public service installations and structures; and shall at all times in the performance of the work avoid interference with, or interruption of, public utilities services, and shall cooperate fully with the owners thereof to the end.

15. **Certificate of Non-Collusion:** An executed copy of this form should accompany your bid. (See Attached).

16. **Governing Law and Venue:** An executed copy of this form should accompany your bid. (See Attached).

17. **Drug Free Workplace:** An executed copy of this form should accompany your bid. (See Attached).

18. **Debarred Bidders:** An executed copy of this form should accompany your bid. (See Attached).

19. No bid may be withdrawn for a period of **sixty (60)** days from the bid opening date.

20. **Permits and Fees:** Within five (5) days following the issuance of the Notice to Proceed, the contractor shall apply for all permits. Failure to do so may result in award of this contract to the next lowest bidder and the original contractor may be billed for the difference in price. The contractor shall secure all permits, license certificates, inspections (permanent and temporary) and business license before any work can commence. This documentation should be on file in the Procurement Office prior to start of any work associated with this contract. **The contractor is required within five (5) days of completion of specified work to contact the Project Manager, Jeremy Brown, Project Engineer at (229) 430-6120 for a final inspection.** Successful bidder as well as any and all known subcontractors must

possess or will be required to obtain a City of Albany Occupational Tax Certificate or Registration prior to award of contract.

21. **Bid Bond:** Each bid shall be accompanied by a certified check, cashier's check, cash, or bid bond (surety) acceptable to the Owner, in an amount equal to at least five **(5%)** percent of the bid, payable without condition to the Owner as a guaranty that the bidder, if awarded the contract, will promptly execute the Agreement in accordance with the bid and other contract documents, and will furnish good and sufficient bond for the faithful performance of the same, and for the payment to all persons supplying labor and material for the work. The bid bond must be presented in its original form. **Copies are not acceptable.**

22. **Performance Bond and Labor and Material Payment Bond:** The successful bidder, simultaneously with the execution of the contract, will be required to furnish a faithful Performance Bond in an amount equal to one hundred (100%) percent of the contract amount and a Labor and Material Payment Bond equal to one hundred (100%) percent of the contract amount; said bonds shall be secured from a surety company satisfactory to the Owner.

23. **Certification of Bidder's Experience and Qualifications:** The undersigned bidder certifies that they are, at the time of bidding, and shall be, throughout the period of the contract, licensed by the State of Georgia to do the type of work required under terms of the contract documents. Bidder further certifies that they are skilled and regularly engaged in the general class and type of work called for in the contract documents. The bidder represents that they are competent, knowledgeable and have special skills on the nature, extent, and inherent conditions of the work to be performed. Bidder further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the particular facilities, which may create, during the construction program, unusual or peculiar unsafe conditions hazardous to persons and property. Bidder expressly acknowledges that they have the skill and experience to foresee and to adopt protective measures to adequately and safely perform the construction work with respect to such hazards. ***Suitable evidence of the successful bidder's experience, to include references, may be submitted with bid.***

24. **Indemnification:** Contractor agrees to indemnify and hold harmless the County, its agents, officers, and employees, their successors and assigns, individually and collectively, with respect to all claims, demands or liability for any injuries to any person (including death) or damage to any property arising out of the activities of contractor or based on alleged negligence of contractor, its officers, agents, or employees and contractor shall defend against all such claims and pay all expenses of such defense, including attorney fees, and all judgments based thereon; provided that this obligation shall not extend to any damage, injury or loss due to the negligence of the County.

25. **Termination for Convenience:** This contract may be terminated in whole or in part by Dougherty County with the consent of the Contractor in which case the two parties shall agree upon the termination conditions, including the effective date in the case of partial termination, the portion to be terminated or by the Contractor upon written notification to Dougherty County setting forth the reasons for such termination, the effective date, and in the case of partial termination, the portion to be terminated. However, if in the case of partial termination, Dougherty County determines that the remaining portion of the award

will not accomplish the purposes for which the contract was awarded, Dougherty County may terminate the contract in its entirety.

26. **Termination for Cause:** In the event that the contractor shall for any reason or through any cause be in default of the terms, conditions, or obligations of the contract documents, the County may give the contractor written notice of such default and terminate the contract. All terms, conditions, and obligations of the contract documents are considered material. The County may, in its discretion, provide the contractor an opportunity to cure the default, if curable, prior to termination. Unless a different duration is provided in the notice of default, the contractor shall have fourteen (14) calendar days to cure the default from the date such notice is mailed to the contractor, unless notification is by facsimile or personal delivery, in which case the opportunity to cure shall commence upon delivery of the notice. Upon failure of the contractor to cure the default the County may immediately terminate the contract effective as of the mailing or delivery of the default notice. If the County terminates the contract, the contractor shall remain liable for performance of all terms, conditions, and obligations through the date of termination. Termination by the County shall not constitute a waiver by the County of any other rights or remedies available to the County by law or contract.

27. **Warranty:** Contractor shall guarantee all specified work performed for a period of one (1) year from the date of written acceptance of the work by the Owner's designated representative that all materials, labor, and workmanship provided under this contract are free from defects of any kind. At no expense to Dougherty County, the contractor shall make repairs to any defects found and reported during the warranty period. Final inspection, final acceptance, and final payment shall not be construed as a waiver of this warranty. The following are excluded from this warranty:
    A. Defects or failures resulting from abuse by the owner.
    B. Damage caused by fire, tornadoes, hail, hurricane, Acts of God, wars, riots, civil commotion, or vandalism.
    C. The contractor is not an insurer nor is he a guarantor of the suitability of or adequacy of design. Any other provisions of this warranty to the contrary notwithstanding, the contractor shall not be required to remedy any unsuitable or inadequate design.

28. **Bid Submittals (All items listed below <u>must</u> be submitted with bid)**
    A. **Bid Bond**
    B. **Bid Form**

    The following items should be submitted with bid:
    C. Governing Law & Venue Form (See Attached)
    D. Certificate of Non-Collusion Form (See Attached)
    E. Corporate Seal
    F. Secretary of State's Certificate of Incorporation
    G. Listing of the principals of Corporation
    H. Affidavit to Comply with OCGA § 13-10-91 (for corporations or sole proprietorship, whichever is applicable to your company, and subcontractor affidavits, if applicable)
    I. Specimen copy of Insurance

29. **Compliance:** The contractor is responsible for knowledge of and compliance with all laws,

codes, ordinances, and regulations that are applicable to this type of work.

30. For additional information please contact **Ricky Gladney, Buyer,** at **(229) 302-1455,** rgladney@albanyga.gov **and cc:** jswilliams@albanyga.gov and kross@albanyga.gov. The deadline for questions is **July 22, 2025 at 2:30 p.m.** Questions received after this deadline may not be answered. Replies of substance will be in the form of written addenda and made available to all potential bidders.

BID FORM
DOCO Drainage Improvements 2025
Bid Reference No. 25-081

Bid of: _____ Date: _____
(Company Name)

To: The Dougherty County Board of Commissioners
Post Office Box 1827
Albany, Ga. 31702

Delivered to: Procurement Division
222 Pine Avenue, Suite 260
Albany, Ga. 31701

We, the undersigned, do hereby declare that we have carefully examined the site of the proposed **Work** and the Contract Documents. We do hereby agree to furnish all material, transportation, equipment, apparatus systems, labor, and supervision required to do all **Work** in strict accordance with the Contract Documents for the amount indicated below**:**

For: **DOCO Drainage Improvements 2025** for various locations within Dougherty County for a TOTAL BASE BID of:

_____$_____
Words *Figure*

Contractor acknowledges receipt of addenda number(s): (If none received write "none received".)

_____ dated _____ _____ dated _____
_____ dated _____ _____ dated _____

If awarded the contract, the contractor will provide proof of insurance as specified in Item #8 and proof of current City of Albany Occupational Tax Certificate to the Procurement Office within ten (10) days following issuance of the Notice of Award. Contractor will commence work within **ten (10)** calendar days after issuance of Notice to Proceed and will be completed in accordance with time stated in the Instructions to Bidders.

_____ _____ _____
Authorized Signature Tax ID # E-Verify #

_____ _____
Address City State Zip

_____ _____
Seal (If Incorporated) Telephone # Fax #

_____
Email

BID SCHEDULE
DOCO DRAINAGE IMPROVEMENTS 2025
DOUGHERTY COUNTY, GA
BID REF. #25-081

ITEM NO.	DESCRIPTION	QTY/UNIT		UNIT PRICE	EXTENSION
	River Pointe Cartpath Drainage Improvements				
1	Mob, Demob, Bonds & Insurance	1	LS		
2	Traffic Control	1	LS		
3	Grading Complete	1	LS		
4	24" Curb & Gutter	23	LF		
5	Concrete Flume	8	LF		
6	Area Drain, Type A (0-6')	1	EA		
7	6" Concrete	10	SY		
8	15" RCP	64	LF		
9	15" Concrete FES	1	EA		
10	30" GDOT 1011B Headwall	1	EA		
11	Inlet Sediment Trap (Sd2-F)	1	EA		
12	Sodding (Ds4)	74	SY		
13	Temp./Permanent Grass, Mulch (Ds 1,2,3)	1	LS		
14	Demo Existing Asphalt, Concrete, & Headwall	1	LS		
	RIVER POINTE CARTPATH DRAINAGE (Items #1-14) SUBTOTAL				
	DOCO Fleet Maintenance Parking				
15	Mob, Demob, Bonds & Insurance	1	LS		
16	Demo Existing Asphalt, Concrete	1	LS		
17	6" Concrete Swale	356	SY		
	DOCO FLEET MAINTENANCE PARKING (Items #15-17) SUBTOTAL				
	Oakhaven Dr. Storm Drainage				
18	Mob, Demob, Bonds & Insurance	1	LS		
19	Traffic Control	1	LS		
20	Remove & Replace Fence	1	LS		
21	Demo Headwall, Remove Debris from Inlets	1	LS		
22	Area Drain, Type A (0-6')	1	EA		
23	Temp./Permanent Grass, Mulch (Ds 1,2,3)	1	LS		
24	Inlet Sediment Trap (Sd2-F)	1	EA		
	OAKHAVEN DR. STORM DRAINAGE (Items #18-24) SUBTOTAL				

Broach Ave. Storm Drainage

25	Mob, Demob, Bonds & Insurance	1	LS		
26	Traffic Control	1	LS		
27	Remove & Replace Asphalt (per Detail 2017)	24	LF		
28	Remove Existing CMP	64	LF		
29	54" RCP (10-12')	64	LF		
30	Demo Existing Area Drains	1	LS		
31	Area Drain, Type A (6-8')	2	EA		
32	Grading Complete	1	LS		
33	Temp./Permanent Grass, Mulch (Ds 1,2,3)	1	LS		
34	Inlet Sediment Trap (Sd2-F)	2	EA		
35	Contingency Allowance	1	LS	$10,000.00	$10,000.00

BROACH AV. DRAINAGE (Items #25-35) SUBTOTAL _____

River Pointe North Entrance

36	Mob, Demob, Bonds & Insurance	1	LS		
37	Traffic Control	1	LS		
38	Remove & Relocate Ex. Safety End Section	1	EA		
39	18" RCP (0-6')	8	LF		
40	Temp./Permanent Grass, Mulch (Ds 1,2,3)	1	LS		
41	Hay Bale Checkdam (Cd-Hb)	2	EA		
42	Grading Complete	1	LS		

RIVER POINTE NORTH ENTRANCE (Items #35-42) SUBTOTAL _____

TOTAL BASE BID (Items #1 - 42) _____

Company Name:
Address:
Phone Number:
Email:
Authorized Signature:
Printed Name:
Title:

SECTION 01010
SUMMARY OF WORK

PART 1 GENERAL

1.01 DESCRIPTION

A. This project involves drainage improvements at 5 different locations within Dougherty County. The scope of work shall include all material, labor and equipment to demo existing conditions, and install storm drainage piping and structures. Includes approximately 136 LF of drainage pipe, 1 headwall, demolition of existing asphalt/concrete, 4 drainage structures, 360 SY of concrete installation, and site grading.

B. All Work described above shall be performed as shown on the Drawings and as specified and/or as directed by the Engineer.

1.02 PROJECT REQUIREMENTS

A. All materials and construction shall be in accordance with the Contract Documents and with Georgia Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition, and their Standard Detail Drawings.

B. The contractor is required to contact the Utilities Protection Center, Inc. in the State of Georgia call 1-800-282-7411 prior to any excavation or construction. Additional information is available at www.gaupc.com. The contractor shall first, Call Before You Dig. Second, Wait the Required Amount of Time. Third, Respect the Marks and Lastly, Dig With Care.

1.03 PROJECT LOCATION

The equipment and materials to be furnished will be installed at the locations shown on the Drawings or as directed by the Engineer, which will include River Pointe Drive/Philema Road, Habersham Road, Broach Ave., and Oakhaven Drive.

1.04 QUANTITIES

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

END OF SECTION

SECTION 01270
MEASUREMENT AND PAYMENT
PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: This Section specifies administrative and procedural requirements for measurement and payment. Payment for Work under this Contract will be made on a unit price or lump sum basis for Work actually completed. Final measurements of the Work will be taken by ENGINEER to determine the amount of Work completed. The method of applying the unit prices to measured quantities shall be as specified in this Section.

1.02 DEFINITIONS

A. Average End Area: Average end area shall be the cross-sectional area determined perpendicular to the long axis of work being measured (the end area). End areas shall be determined within 50 feet of each end of the Work and in no more than 100-foot intervals. Total volume shall be determined by multiplying each end area by the length of Work to which it applies.

B. Actual Area, for Square Yard and Square Foot Measurements: For rectangular or trapezoidal areas, the average width multiplied by the length. Irregularly shaped areas shall be broken into roughly rectangular or triangular shapes for measurement.

C. Field Survey: For large areas to be measured for the above two methods, Engineer may elect to have the area determined by field survey using electronic data collection, and the area determined based on a plot of the data. Contractor will be provided with a copy of the plot and survey data.

D. Truck Load Tickets: For unit price items paid by the ton, scales used must be currently certified by GDOT for use on State Project. Contractor shall provide Engineer with copies of certification. Load tickets must show date, time, material, load weight, tare weight, and net weight, and be mechanically or computer printed. Handwritten tickets shall not be accepted.

E. Lump Sum, prorated to a monthly basis: For unit price items paid by this basis, Contractor shall include the total price for the work as a lump sum basis. Payment will be made on a monthly, prorated basis over the Contract Times. For example, if the Contract Times are four months, then payment will be made at one-quarter of the lump sum basis per month.

F. Horizontal Measurements: For unit price items measured by this basis, the measurement shall be the horizontal distance between the two measured points (station to station) without any adjustment in vertical changes in grade or pipe slope.

1.03 OWNER'S INSTRUCTIONS

A. Payment will only be made for items listed on Bid Form. The costs for other Work required for a complete Project or work that is incidental and not specifically listed in the Bid will be included in the prices Bid for the other items of Work listed on Bid Form.

B. Payment for each item will be in accordance with the General Conditions, and include all applicable labor, material, equipment, and ancillary items to complete the Work specified.

C. All measurements shall be rounded to the nearest whole unit.

1.04 APPLICATIONS FOR PAYMENT

A. Applications For Payment:
1. Each Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.
2. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.
3.The date for each progress payment will be determined at the Pre-Construction Conference. The period of construction Work covered by each Application for Payment is 1 month. Actual start/end dates will be determined at the Pre-Construction Conference. Unless otherwise determined by the Owner, Application for Payment will be required to be submitted by the 25th of the month.
4. Complete every entry on the form, including execution by person authorized to sign legal documents on behalf of Contractor. Incomplete applications will be returned without action.
5. Entries shall match data on Schedule of Values and Contractor's Construction Schedule. Use updated Schedules if revisions have been made.
6. Include amounts of Change Orders and Work Change Directives issued prior to the last day of the construction period covered by the application.
7. Transmit each copy with a transmittal form listing attachments, and recording appropriate information related to the application in a manner acceptable to Engineer.

B. Application for Payment at Substantial Completion:
1. Following issuance of the Certificate of Substantial Completion, submit an Application for Payment; this application shall reflect any Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
2. Administrative actions and submittals that shall proceed or coincide with this application include:
a. Warranties (guarantees) and maintenance agreements.
b. Maintenance instructions.
c. Changeover information related to Owner's occupancy, use, operation, and maintenance.
d. Final cleaning.
e. List of incomplete Work, recognized as exceptions to Engineer's Certificate of Substantial Completion.

C. Final Payment Application: Administrative actions and submittals which must precede or coincide with submittal of the final payment Application for Payment include the following:
1. Completion of Project closeout requirements.
2. Completion of items specified for completion after Substantial Completion.
3. Assurance that unsettled claims will be settled.
4. Assurance that Work not complete and accepted will be completed without undue delay.
5. Submit proof that taxes, fees, and similar obligations have been paid.
6. Submit a final liquidated damages settlement statement.
7. Submit record drawings, damage or settlement survey, and similar final record information.
8. Removal of temporary facilities and services.
9. Removal of surplus materials, rubbish, and similar elements.
10. Deliver tools, spare parts, extra stock, and similar items to Engineer for transmission to Owner.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

SCHEDULE OF UNIT PRICES

DIVISION 1 - GENERAL REQUIREMENTS

Description: Mobilization, Demobilization, Bonds, Insurance
Payment: Lump Sum. For mobilization and demobilization, 50 percent of amount when Work has begun, 50 percent when Work is complete and Site fully restored. For bonding and insurance, payments are approved at 100% once the Engineer approved the required documents.
Measurement: Each.
Work Required: For Mobilization: Transporting equipment to Site, required permits, surveying performed by Contractor to establish or confirm the location of reference points, rights-of-way, or easements, or location and grade of underground utilities, and any other temporary facilities required. For Demobilization: Removal of equipment from Site, removal of temporary facilities, and completion of all restoration. Item shall also include all costs associated with the required bonds and insurance for the project.

Description: Inlet Sediment Traps (Sd2-F)
Payment: Each.
Measurement: Each.
Work Required: Sediment traps (all types), including maintenance, repair and removal, all in accordance with the requirements of ESPCP's Manual for Erosion and Sediment Control in Georgia.

Description: Hay Bale Check Dam (Cd-Hb)
Payment: Each.
Measurement: Each.
Work Required: Hay bale check dams, including hay bale, necessary earthwork, periodic maintenance and repair, and removal of sediment and hay following establishment of permanent erosion control measures all in accordance with the requirements of ESPCP's Manual for Erosion and Sediment Control in Georgia.

Description: Sodding
Payment: Square yard.
Measurement: Square yard.
Work Required: Sodding, including fertilizer, maintenance, repair and re-sodding, all in accordance with the requirements of ESPCP's Manual for Erosion and Sediment Control in Georgia.

Description: Temporary/Permanent Grassing & Mulching (Ds1, Ds2 & Ds3)
Payment: Lump Sum.
Measurement: Per Each Project Location.
Work Required: Grassing and mulching shall be for disturbed areas. Those and any other costs for labor, materials, and equipment for clean up and grassing and mulching of the disturbed area all in accordance with the requirements of ESPCP's Manual for Erosion and Sediment Control in Georgia.
No additional payment will be made for those areas of disturbance where the Contractor must reseed due to inadequate watering and maintenance; loss of seeds caused by site erosion, e.g., wind and rain; inadequate germination of the seeds; inadequate coverage/density; providing permanent species at the appropriate season after temporary grassing has been performed.
No additional payment will be made for providing a temporary species of grass where the seasonal limitations do not allow for the proper germination of a permanent species of grass. Any additional cost anticipated for sowing a temporary species shall be included in the price bid for the item to which it pertains.

Description: Traffic Control
Payment: Lump Sum, prorated to a monthly basis.

Measurement: None.
Work Required: Includes the Traffic Control Plan of Action, providing, placing, moving, operating, and maintaining the necessary barricades, signs, temporary lane markings and devices for the life of Project, and removing barricades, signs, and devices when the Work is complete. No separate payment will be made for traffic control or maintaining highways, streets, roadways and driveways.

DIVISION 2 - SITEWORK

Description: Trench Excavation
Payment: None.
Measurement: No separate payment will be made for this item. Work and payment for this item will be considered incidental to the pay item in which the work is required to be performed.

Description: Excavation Dewatering
Payment: None.
Measurement: No separate payment will be made for this item. Work and payment for this item will be considered incidental to the pay item in which the work is required to be performed.

Description: Bedding and Haunching
Payment: None.
Measurement: No separate payment will be made for this item. Work and payment for this item will be considered incidental to the pay item in which the work is required to be performed. No additional payment will be made for additional trench depth. No separate payment will be made for material used to provide specified bedding. The cost of all bedding materials shall be included in the unit price bid for the item to which it relates, except for trench stabilization. No additional payment will be made for improved bedding required to compensate for over excavation of the trench.

Description: Initial and Final Backfill
Payment: None.
Measurement: No separate payment will be made for this item. Work and payment for this item will be considered incidental to the pay item in which the work is required to be performed. No separate payment will be made for drying out the initial / final backfill material in order to meet the compaction requirements. No separate payment will be made for the adding of moisture to the initial / final backfill materials in order to meet the compaction requirements. No separate payment will be made for providing select material if the insitu material cannot meet the compaction requirements.

Description: Grading Complete
Payment: Lump Sum.
Measurement: None.
Work Required: Includes all work to grade, clear and grub project site as called for in the design drawings. Includes clearing and grubbing, excavating, rock excavation (if any), borrowing, hauling, placing or disposing of materials from within the limits of areas designated for cut within the limits of construction, removal and legal disposal of all waste material, removal of excess dirt from site, importing of suitable fill material, and compaction testing. Also includes all additional fill dirt needed in compacting and grading. Removal of all trees, shrubs and miscellaneous vegetation including leaves, limbs, and branches, and stumps as directed by the Engineer, and legal disposal of all waste material. All topsoil shall be stockpiled in an area acceptable to the Owner, then used at the end of the project for final grading and establishment of grass. See Section 02300 Earthwork for more information.

Description: Sheeting, Bracing and Shoring, Temporary
Payment: None.

Measurement: No separate payment will be made for this item.
Work Required: Work and payment for this item will be considered incidental to the pay item in which the work is required to be performed.

Description: Remove & Replace Asphalt (per Detail 2017)
Payment: Per linear foot.
Measurement: Horizontally along the length of the cut, regardless of width.
Work Required: Includes removal of existing asphalt and base and legal disposal of material. Installation of all necessary aggregate base, base preparation, compaction, and concrete as per Detail 2017.

Description: Reinforced Concrete Pipe (RCP)
Payment: Per linear foot.
Measurement: Horizontally along the length of the culvert from end to end, for the types and sizes listed on Bid Form.
Work Required: Includes tree root protection, and base material, excavation, trenching, cofferdams, dewatering, furnishing and placing of the pipe, fittings, and plugs, bedding, backfilling, connecting to existing pipes, disposal of excess material, temporary sheeting and bracing, temporary support, or relocation of existing utilities and services, and the repair and replacement thereof if damaged, repair of lawns and grass areas, normal joints and gaskets, field reports, and other work required for a complete job.

Description: Flared End Section (FES)
Payment: Each.
Measurement: Per each for the types and sizes listed on the Bid Form.
Work Required: Installation of flared end section with connection to proposed/existing pipe, as shown on plans and according to DOT details and specifications. Work shall include all materials, labor, equipment, tools, and incidental items necessary to complete this item.

Description: Remove & Relocate Existing Safety End Section
Payment: Each.
Measurement: Each removed and relocated.
Work Required: Removal of an existing safety end section and relocate/reinstall where indicated on the plans. Work shall include all materials, labor, equipment, tools, and incidental items necessary to complete this item.

Description: Headwall
Payment: Each.
Measurement: Per each for the types and sizes listed on the Bid Form.
Work Required: Install concrete headwall, or sand cement bag headwall, as shown on plans and according to DOT details and specifications. Work shall include all materials, labor, equipment, tools, and incidental items necessary to complete this item.

Description: Remove Existing Storm Pipe
Payment: Per linear foot.
Measurement: Horizontally along the length of the pipe to be removed, regardless of size and material.
Work Required: Includes salvaging and delivery of undamaged pipe to Owner where requested, the removal and disposal of broken masonry and pipe, and the refilling of voids with compacted granular material.

Description: Demo/Remove Existing Headwall/Concrete/Asphalt/Structure/Debris
Payment: Lump Sum.

Measurement: Lump sum per location.
Work Required: Includes removal & disposal of structures and items indicated on the plans. Shall include all labor, equipment, materials, etc. necessary to complete this item.

Description: Storm Inlet / Area Drain
Payment: Each.
Measurement: Each, for storm inlets, area drains and manholes with sump or invert, for the types listed on Bid Form.
Work Required: Includes storm inlet/area drain, excavation, dewatering, pavement sawcutting, frames and covers, stubs, plugs, benches, collars and boots, grouting and/or other connections, surface grading required to direct the water to the catch basin and other Work required for a complete job.

Description: Remove & Replace Fence
Payment: Lump Sum.
Measurement: Lump Sum, per location.
Work Required: Removal of existing fence during construction and replacing the fence at the same location once construction is complete. New materials shall be used if any portion for the fence is damaged during removal or replacement. Work shall include all material, labor, equipment, tools, temporary installments, and incidental items necessary to complete this item.

Description: Concrete Curb and Gutter
Payment: Per linear foot.
Measurement: Horizontally along gutter at face of curb for the types listed on Bid Form.
Work Required: Furnishing and installing concrete, expansion joints, sawing, reinforcing steel, and other details as shown on Drawings or as specified.

Description: 6" Concrete/Concrete Swale
Payment: Per square yard.
Measurement: Actual width multiplied by actual length placed, for thickness listed on Bid Form.
Work Required: Includes necessary aggregate base, base preparation, compaction, sawing, expansion/construction joints, and placing and finishing concrete.

Description: Concrete Flume
Payment: Per linear foot.
Measurement: Horizontally along center of flume for the types list on Bid Form or shown on plans.
Work Required: Includes necessary aggregate base, base preparation, compaction, sawing, expansion/construction joints, and placing and finishing concrete.

Description: Compaction/Quality Control Testing
Payment: None.
Work Required: Includes all compaction and soils testing necessary to achieve required standards identified in the technical specifications. All testing costs shall be included in the unit bid price for the item to which it pretains.

Description: Contingency Allowance
Payment: Per Change Order.
Measurement: As Per Change Order.
Work Required: To be used as the "Owner's Reserve" at the Owner's discretion for additions

to the project's scope and/or unforeseen items. Should the net cost be more or less than the specified amount of the allowance, the Contract will be adjusted accordingly at the end of the project by a change order.

END OF SECTION

SECTION 01770
CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 GENERAL

Comply with requirements stated in the General Conditions Article 14 for administrative procedures in serving notice of Substantial Completion, Retainage, Final Construction Review, Final Completion, Final Payment and Supplemental Conditions.

1.02 SUBSTANTIAL COMPLETION

A. When contractor considers the work is substantially complete, he shall submit to Engineer:

1. A written notice that the Work, or designated portion thereof, is substantially complete.
2. A list of items to be completed or corrected.

B. Within a reasonable time after receipt of such notice, the Engineer will make a construction review to determine the status of completion.

C. If Engineer determines that the Work is not substantially complete:

1. Engineer will promptly notify the contractor in writing giving the reasons therefore.
2. Contractor shall remedy the deficiencies in the Work, and send a second written notice of substantial completion to the Engineer.
3. Engineer will again review the Work for completion status.

D. When the Engineer finds that the Work is substantially complete, he will:

1. Prepare and deliver to Owner a tentative certificate of Substantial Completion with a tentative list of items to be completed or corrected before final payment.
2. After consideration of any objections made by the Owner as provided in conditions of the contract, and when Engineer considers the Work substantially complete, he will execute and deliver to the Owner and the Contractor a definite Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected

1.03 RETAINAGE

The retainage will be paid to the Contractor after the Project is FINALLY COMPLETE in accordance with these Contract Documents and all manuals, Project Record Documents, Contractor certifications, Contractor affidavits, etc. have been submitted as required by these Contract Documents.

1.04 FINAL CONSTRUCTION REVIEW

A. When Contractor considers the Work is complete, he shall submit written certification that:

1. Contract documents have been reviewed.
2. Work has been reviewed for substantial compliance with contract documents.
3. Work has been completed generally in accordance with contract documents.
4. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
5. Work is completed and ready for final construction review,

B. Engineer will perform a review to verify the status of completion with reasonable promptness after receipt of such certification.

C. If Engineer considers the Work to be incomplete:

1. Engineer will promptly notify the Contractor in writing, listing the incomplete or defective work.
2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to Engineer that the work is complete.
3. Engineer will again review the Work.

D. When the Engineer finds that the work is acceptable under the contract documents, he will:

1. Prepare and deliver to Owner in writing that he has examined the work and that, in his opinion, it appears to conform to these Contract Documents and therefore recommends the work be accepted for FINAL COMPLETION. It is understood and agreed that such statement by the Engineer does not in any way relieve the Contractor or his Sureties from any duties, responsibilities, and obligations under these Contract Documents.
2. After work has been recommended by Engineer as acceptable for FINAL COMPLETION, the Engineer shall request that the Contractor submit closeout submittals.
3. After the Engineer recommends the work for FINAL COMPLETION, the Owner will, if he concurs in the Engineer's recommendation, promptly notify the Contractor in writing. If the Owner does not concur in the Engineer's recommendation, the Owner will promptly notify the Contractor in writing that he does not accept the work as complete and stating the deficiencies and/or conditions that shall be corrected or resolved before FINAL COMPLETION will be issued. After the deficiencies and/or conditions are corrected or resolved and the Owner is satisfied that the work is complete, the Owner will issue to the Contractor notice of FINAL COMPLETION.

1.05 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ENGINEER

A. Evidence of Payment and Release of Liens: to requirements of General and Supplementary Conditions.

B. Record Drawings with annotations made by the contractor during construction of the work, and including As-Built coordinates and elevations on all structures, pipe inverts and key locations as required by Engineer.

C. Retainage will not be paid until the above documents have been submitted and are satisfactory and acceptable to the Owner.

1.06 FINAL PAYMENT

Upon Final Completion of the Work in accordance with the Contract Documents, the Contractor will be authorized to prepare a final estimate of the work and a Final Payment request. The Engineer will review the final payment request and will, if all items are satisfactory, recommend approval to the Owner. The Engineer will submit to the Owner the final estimate and the final payment request, together with a certification stating that the work is complete and in substantial conformance with these Contract Documents. The entire balance found to be due the Contractor including any retainages, except such sums as may be lawfully retained by the Owner, will be paid to the Contractor.

END OF SECTION

SECTION 02300
EARTHWORK

PART 1 GENERAL

1.01 SCOPE

A. This Section includes earthwork and related operations, including, but not limited to dewatering, excavating all classes of material encountered, pumping, draining and handling of water encountered in the excavations, handling, storage, transportation and disposal of all excavated and unsuitable material, construction of fills and embankments, backfilling around structures, compacting, all sheeting, shoring and bracing, preparation of subgrades, surfacing and grading, and any other similar, incidental, or appurtenant earthwork operations which may be necessary to properly complete the work.

B. The Contractor shall provide all services, labor, materials, and equipment required for all earthwork and related operations, necessary or convenient to the Contractor, for furnishing complete work as shown on the Drawings or specified in these Contract Documents.

1.02 RELATED SECTIONS

A. Site Preparation: Section 02200
B. Trench Excavation and Backfill: Section 02317
C. Erosion and Sedimentation Control: Section 02370

1.03 GENERAL

A. The elevations shown on the Drawings as existing are taken from the best existing data and are intended to give reasonably accurate information about the existing elevations. They are not precise and the Contractor shall become satisfied as to the exact quantities of excavation and fill required.

B. Earthwork operations shall be performed in a safe and proper manner with appropriate precautions being taken against all hazards.

C. All excavated and filled areas for structures, trenches, fills, topsoil areas, embankments, and channels shall be maintained by the Contractor in good condition at all times until final acceptance by the Owner. All damage caused by erosion or other construction operations shall be repaired by the Contractor using material of the same type as the damaged material.

D. The Contractor shall control grading in a manner to prevent surface water from running into excavations. Obstruction of surface drainage shall be avoided and means shall be provided whereby storm water can be uninterrupted in existing gutters, other surface drains, or temporary drains. Free access must be provided to all fire hydrants and meters.

E. Tests for compaction and density shall be conducted by the Contractor or by an independent testing laboratory selected by the Owner.

1. The soils testing laboratory is responsible for the following:
a. Field compaction testing shall be based on using the maximum dry density determined by the Standard Proctor Compaction Test in accordance with ASTM D 698.
b. Determination of in place backfill density shall be done in accordance with ASTM D 1556, "Density and unit weight of Soil In Place by the Sand-Cone Method", ASTM D 2937, "Density of Soil In Place by the Drive Cylinder Method" or ASTM D 2922, "Density of Soil and Soil Aggregate In Place by Nuclear Methods (Shallow Depth)".

c. Field density tests for each lift; one test for each 5,000 square feet of fill or minimum one test per lift.
d. Inspecting and testing stripped site, subgrades and proposed fill materials.
2. Contractor's duties relative to testing include:
a. Notifying laboratory of conditions requiring testing.
b. Coordinating with laboratory for field testing.
c. Providing representative fill soil samples to the laboratory for test purposes. Provide 50 pound samples of each fill soil.
3. Inspection
a. Earthwork operations, suitability of excavated materials for fill and backfill, and placing and compaction of fill and backfill is subject to inspection. Engineer will observe earthwork operations.
b. Foundations and shallow spread footing foundations are required to be inspected by an engineer to verify suitable bearing and construction.

F. All earthwork operations shall comply with the requirements of OSHA Construction Standards, Part 1926, Subpart P, Excavations, Trenching, and Shoring, and Subpart O, Motor Vehicles, Mechanized Equipment, and Marine Operations, and shall be conducted in a manner acceptable to the Engineer.

G. It is understood and agreed that the Contractor has made a thorough investigation of the surface and subsurface conditions of the site and any special construction problems which might arise as a result of nearby watercourses and floodplains. The Contractor shall be responsible for providing all services, labor, equipment, and materials necessary or convenient to the Contractor for completing the work within the time specified in these Contract Documents.

H. Safety

Perform all trench excavation and backfilling activities in accordance with the Occupational Safety and Health Act of 1970 (PL 91 596), as amended. The Contractor shall pay particular attention to the Safety and Health Regulations Part 1926, Subpart P "Excavation, Trenching & Shoring" as described in OSHA publication 2226.

PART 2 PRODUCTS

2.01 SOILS CLASSIFICATIONS

Bedding materials listed here include a number of processed materials plus the soil types defined according to the Unified Soil Classification System (USCS) in ASTM D 2487, Standard Method for Classification of Soils for Engineering Purposes. (See below for description of soil classification). These materials are grouped into five broad categories according to their suitability for this application:

A. Class I Angular, 1/4 to 1 1/2 inches (6 to 40 mm) graded stone, including such as coral, slag, cinders, crushed shells and crushed stone. Note - The size range and resulting high voids ratio of Class I material make it suitable for use to dewater trenches during pipe installation. This permeable characteristic dictates that its use be limited to locations where pipe support will not be lost by migration of other embedment materials into the Class I material. When such migration is possible, the material's minimum size range should be reduced to finer than 1/4 inch (6 mm) and the gradation properly designed to limit the size of the voids.

B. Class II Coarse sands and gravels with maximum particle size of 1 1/2 inch (40 mm), including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil Types GW, GP, SW and SP are included in this class. Note - Sands and gravels which are clean or borderline between clean and with fines should be included. Coarse grained soils with less than 12% but more than 5% fines are neglected in ASTM D2487 and the USCS and should be included. The gradation of Class II material influences its density and pipe support strength when loosely placed. The gradation of Class II material influences its density and pipe support strength when loosely placed. The gradation of Class II material may be critical to the pipe support and stability of the foundation and embedment if the material is imported and is not native to the trench excavation. A gradation other than well graded, such as uniformly

graded or gap graded, may permit loss of support by migration into void spaces of a finer grained natural material from the trench wall and foundation.

C. Class III Fine sand and clayey (clay filled) gravels, including fine sands, sand clay mixtures and gravel clay mixtures. Soil Types SM, GC, SM, and SC are included in this class.

D. Class IV Silt, silty clays and clays, including inorganic clays and silts of not to high plasticity and liquid limits. Soil Types MH, ML, CH, and CL are included in this class. Note Caution should be used in the design and selection of the degree and method of compaction for Class IV soils because of the difficulty in properly controlling the moisture content under field conditions. Some Class IV soils with medium to high plasticity and with liquid limits greater than 50% (CH, MH, CH MH) exhibit reduced strength when wet and should only be used for bedding, haunching and initial backfill in arid locations where the pipe embedment will not be saturated by ground water, rainfall and/or exfiltration from the pipeline system. Class IV soils with low to medium plasticity and with liquid limits lower than 50% (CL, ML, CL ML) also require careful consideration in design and installation to control moisture content but need not be restricted in use to arid locations.

E. Class V This class includes the organic soils OL, OH, and PT as well as soils containing frozen earth, debris, rocks larger than 1 1/2 inch (40 mm) in diameter, and other foreign materials. These materials are not recommended for bedding, haunching or initial backfill.

DESCRIPTION OF EMBEDMENT MATERIAL CLASSIFICATIONS

SOIL CLASS	SOIL TYPE	DESCRIPTION MATERIAL CLASSIFICATION
Class I Soils *	---	Manufactured angular, granular material, 3/4 to 1 1/2 inches (6 to 40 mm) size, including materials having regional significance such as crushed stone, or rock, broken coral, crushed slag, cinders, or crushed shells.
Class II Soil **	GW	Well-graded gravels and gravel-sand mixtures, little or no fines. 50% or more retained on No. 4 sieve. More than 95% retained on No. 200 sieve. Clean..
	GP	Poorly graded gravels and gravel-sand mixtures, little or no fines. 50% or more retained on No. 4 sieve. More than 95% retained on No. 200 sieve. Clean
	SW	Well-graded sands and gravely sands, little or no fines. More than 50% passes No. 4 sieve. More than 95% retained on No. 200 sieve. Clean.
	SP	Poorly graded sands and gravelly sand, little or no fines. More than 50% passes No. 4 sieve. More than 95% retained on No. 200 sieve. Clean.
Class III Soil ***	GM	Silty gravels, gravel-sand-silt mixtures. 50% or more retained on No. 200 sieve.
	GC	Clayey gravels, gravel-sand-clay mixtures. 50% or more retained on No. 4 sieve. More than 50% retained on No. 200 sieve.
	SM	Silty sands, sand-silt mixtures. More than 50% passes No. 4 sieve. More than 50% retained on No. 200 sieve.

	SC	Clayey sands, sand-clay mixtures. More than 50% passes No. 4 sieve. More than 50% retained on No. 200 sieve.
Class IV Soils	ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands. Liquid limit 50% or less. 50% or more passes No. 200 sieve.
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays. Liquid limit 50% or less. 50% or more passes No. 200 sieve.
	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts. Liquid limit greater than 50%. 50% or more passes No. 200 sieve.
	CH	Inorganic clays of high plasticity, fat clays. Liquid limit greater than 50%. 50% or more passes No. 200 sieve.
Class V Soils	OL	Organic silts and organic silty clays of low plasticity. Liquid limit 50% or less. 50% or less. 50% or more passes No. 200 sieve.
	OH	Organic clays of medium to high plasticity. Liquid limit 50% or less. 50% or more passes No. 200 sieve.
	PT	Peat, muck and other highly organic soils.

* Soils defined as Class I materials are not defined in ASTM D2487.
** In accordance with ASTM D2487, less than 5% pass No. 200 sieve.
*** In accordance with ASTM D2487, more than 12% pass No. 200 sieve. Soils with 5% to 12% pass No. 200 sieve fall in borderline classification, e.g. GP GC.

2.02 FILL MATERIAL

A. Sand Fill: Material shall consist of a clean sand with a fineness modulus of 1.6 to 3.1 and containing not more than 10 percent by weight finer than No. 200 U.S. Standard Sieve.

B. Earth Fill: Material shall consist of inorganic material free of roots, cobbles and boulders and classified as SM, ML, SC, or CL by ASTM D2487-85 "Standard Methods for Classification of Soils for Engineering Purposes". Earth Fill shall also conform to the following:

1. Liquid Limit = 50 maximum
2. Plasticity Index = 20 maximum
3. Dry Unit Weight = 90 pcf minimum maximum density

C. Coarse Aggregate (Crushed Stone): Coarse aggregate shall conform to the Georgia Department of Transportation Standard Specifications for Construction of Road and Bridges, Table 800.01 H, Size No. 57.

2.03 UNSUITABLE SITE FILL MATERIAL

Material which does not conform to the above classifications (soil classification SP, SW.GM, CH, MH, OH, OL, and PT) may be used as Site Fill material in areas identified on the drawings as "spoil areas", in areas with no structures and or roads and other non-critical areas.

2.04 TOPSOIL

See specification Section "02230 Topsoil".

2.05 SHEETING, BRACING AND TIMBERING

A. Sheeting, Bracing and Timbering: The Contractor shall furnish, place and maintain all sheeting, bracing and timbering required to properly support trenches and other excavations in open cut and to prevent all movement of the soil, pavement, structures, or utilities outside of the trench or pit.

1. General
a. Cofferdams and bracing design, including computations, shall be prepared before commencing construction operations. Drawings and design computations shall be signed and sealed by a professional engineer registered in the State of Georgia. The drawings and design computations shall be submitted to the Engineer for informational purposes only.
b. Sheeting, bracing and timbering shall be so placed as to allow the work to be constructed to the lines and grades shown on the Drawings and as ordered by the Engineer.
c. If at any time the method being used by the Contractor for supporting any material or structure in or adjacent to any excavation is not reasonably safe, the Contractor shall provide additional bracing and support necessary to furnish the added degree of safety.
d. All sheeting in contact with the concrete or masonry shall be cut off as directed by the Engineer and left in place.

2. Timber: Timber may be substituted for steel sheet piling when approved by the Engineer. Timber for shoring, sheeting or bracing shall be sound and free of large or loose knots, and in good condition. Size and spacing shall be in accordance with OSHA regulations.

3. Steel Sheet Piling: Steel sheet piling shall be the continuous interlock type. The weight, depth, and section modulus of the sheet piling shall be sufficient to restrain the loads of earth pressure and surcharge from existing foundations and/or live loads. Procedure for installation and bracing shall be so scheduled and coordinated with the removal of the earth that the ground under existing structures shall be protected against lateral movement at all times. The Contractor shall provide closure and sealing between sheet piling and existing facilities. Steel piling shall be removed, unless otherwise directed by the Engineer.

4. Remove bracing and sheeting in units when backfill reaches the point necessary to protect the structures and adjacent property. Leave sheeting in place when, in the opinion of the Engineer, it cannot be safely removed. Cut off sheeting left in place at least two feet below the surface.

2.06 FILTER FABRIC

A. Filter fabric associated with bedding shall be a UV stabilized, spunbonded, continuous filament, needle punched, polypropylene, nonwoven geotextile.

B. The fabric shall have an equivalent open size (EOS or AOS) of 120 70. The fabric shall also conform to the minimum property values listed in the following table:

Fabric Property	Unit	Test Procedure	Average Value	
			Typical	Minimum
Weight	oz/yd^2	ASTM D 3776	8.3	
Thickness	mils	ASTM D 1777	105	
Grab Strength	lbs.	ASTM D 4632	240	210
Grab Elongation	%	ASTM D 4632	>50	50
Tear Strength	lbs.	ASTM D 4533	100	85
Mullen Burst	psi	ASTM D 3786	350	320
Puncture Resistance	lbs.	ASTM D 4833	115	100
Permittivity	sec^{-1}	ASTM D 4491	1.7	
Water Permeability	cm/sec	ASTM D 4491	0.4	
Water Flow Rate	gpm/ft^2	ASTM D 4491	120	
UV Resistance (500 hrs)	%	ASTM D 4355	>85	
PH			2 – 13	

2.07 CONCRETE

Concrete for initial backfill or encasement shall have a compressive strength of not less than 3,000 psi, with not less than 5.5 bags of cement per cubic yard and a slump between 3 and 5 inches. Ready mixed concrete shall be mixed and transported in accordance with ASTM C 94. Reinforcing steel shall conform to the requirements of ASTM A 615, Grade 60.

2.08 FLOWABLE FILL

Flowable fill, where required for backfill, shall meet the requirements of Georgia Department of Transportation Standard Specifications, Section 600 for Excavatable or Non-Excavatable type.

PART 3 EXECUTION

3.01 GENERAL

A. Safety: Comply with local regulations and with the provisions of the "Manual of Accident Prevention in Construction" of the Associated General Contractors of America, Inc., Occupational Safety and Health Act and all other applicable safety regulations.

B. Topsoil

1. Remove all topsoil to a depth at which subsoil is encountered, from all areas under buildings, pavements, and from all areas which are to be cut to lower grades or filled.
2. With the Engineer's approval, topsoil to be used for finish grading may be stored on the site.
3. Other topsoil may be used for fill in non critical areas with approval of the Engineer.
4. Properly dispose of all excess topsoil in the designated area.

C. Bracing and Sheeting

1. Furnish, put in place, and maintain all sheeting, bracing, and shoring as may be required to properly support the sides of all excavations and to prevent all movement of earth which could in any way injure the work, adjacent property or workers.
2. Properly support all excavations where necessary to conform to all pertinent rules and regulations and these

Specifications, even though, such locations are not indicated on the Drawings.
3. Exercise care in the removal of sheeting, shoring, bracing and timbering to prevent collapse or caving of the excavation faces being supported and damage to the work and adjacent property.
4. Do not leave any sheeting or bracing in the trench or excavation after completion of the work, unless approved by the Engineer.

D. Obstructions

1. Remove and dispose of all boulders, sidewalks, driveways, pavement, pipes, and the like, as required for the performance of the work.
2. Exercise care in excavating around catch basins, inlets and manholes so as to not disturb or damage these structures.
3. Avoid removing or loosening castings or pushing dirt into catch basins, inlets and manholes.
4. Damaged or displaced structures or casting shall be repaired, replaced and dirt entering the structures during the performance of the work shall be removed at no additional cost to the Owner.

E. Utilities to be Abandoned

1. When pipes, conduits, sewers, or other structures are removed from the trench, leaving dead ends in the ground, such ends shall be fully plugged or sealed with brick and non shrink grout.
2. Abandoned structures such as manholes or chambers shall be entirely removed.
3. All materials from abandoned utilities shall be removed from the site.
4. All salvageable materials shall become the property of the Owner.
5. All equipment to be salvaged is noted in the Specifications and shall be turned over to the Owner at a designated location.

F. Extra Earth Excavation

1. In case soft or excessively wet material which, in the opinion of the Engineer, is not suitable, is encountered below the final subgrade elevation of an excavation or underneath a structure, the Engineer may order the removal of this material and its replacement with crushed stone, filter fabric, or other suitable material in order to make a suitable foundation for the construction of the structure.

G. Cutting Paved Surfaces and Similar Improvements

1. Remove existing pavement as necessary for installing pipe utilities and appurtenances or as otherwise shown on the Drawings.
2. Before removing any pavement, mark the pavement neatly, paralleling pipe lines and existing street lines. Space the marks the width of the trench.
3. Break asphalt pavement along the marks using rotary saws or other suitable tools. Break concrete pavement along the marks by use of scoring with a rotary saw and breaking below the score by the use of jackhammers or other suitable tools.
4. Do not pull pavement with machines until completely broken and separated from pavement to remain.
5. Do not disturb or damage the adjacent pavement. If the adjacent pavement is disturbed or damaged, remove and replace the damaged pavement. No additional payment will be made for removing and replacing damaged adjacent pavement.
6. Remove and replace sidewalks disturbed by construction for their full width and to the nearest undisturbed joint.
7. The Contractor may tunnel under curbs that are encountered. Remove and replace any curb disturbed by construction to the nearest undisturbed joint.

3.02 EXCAVATION

A. Method

1. All excavation shall be by open cut from the surface except as indicated on the Drawings.

2. All excavations for pipe appurtenances and structures shall be made in such a manner, and to such depth and width, as will give ample room for building the structures, and for bracing, sheeting, and supporting the sides of the excavation, for pumping and draining groundwater which may be encountered, and for the removal from the excavation of all materials excavated.
3. Take special care so that the soil below the bottom of the structure to be built is left undisturbed.

B. Grades: Excavate to grades indicated on the Drawings. Where excavation grades are not indicated on the Drawings, excavate as required to accommodate installation.

C. Disposal of Excavated Material

1. Remove and properly dispose of all excavated material not needed to complete filling, backfilling and grading.
2. Dispose of excess earth and rock excavated materials at locations on site designated by the Engineer. Off-site disposal of all other material shall be and in accordance with all requirements of federal, state, county, and municipal regulations. No debris of any kind shall be deposited in any stream or body of water, or on any street. No debris shall be deposited on any private property, except by written consent of the property owner. In no case shall any material be shoved onto abutting private properties, or be buried in embankments or trenches on the Project.

3.03 EXCAVATING FOR STRUCTURES

A. Earth Excavation: Earth excavation shall include all substances to be excavated other than rock. Earth excavation for structures shall be to limits not less than two feet outside wall lines, to allow for formwork and inspection, and further as necessary to permit the trades to install their work. All materials loosened or disturbed by excavation shall be removed from surfaces to receive concrete or crushed stone.

B. Excavation for Foundations: Footings and slabs on grades shall rest on undisturbed earth, rock or compacted materials to insure proper bearing.

1. Unsuitable Foundation Material: Any material, in the opinion of the Engineer, which is unsuitable for foundation shall be removed and replaced with compacted crushed stone, or with compacted fill material as directed by the Engineer. No determination of unsuitability will be made until all requirements for dewatering are satisfactorily met.
2. Foundation in Rock: Foundations for a structure shall be on similar materials. Should excavation for a foundation be partially in rock, the Contractor shall undercut that portion of the rock 12 inches and bring the excavation to grade with compacted crushed stone.
3. Pipe Trenches Beneath Structures: Where piping or conduit passes beneath footings or slabs resting on grade, trenches shall be excavated to provide a minimum 6 inch clearance from all surfaces of the pipe or conduit. The trench shall be backfilled to the base of the structure with concrete.
4. Unauthorized Excavation: Care shall be taken that excavation does not extend below bottom levels of footings or slabs on earth or rock. Should the excavation, through carelessness or neglect, be carried below such levels, the Contractor shall fill in the resulting excess excavation with concrete under footings and compacted crushed stone or other approved material under slabs. Should excavation be carried beyond outside lines of footings such excess excavation shall be filled with concrete, or formwork shall be provided, as directed by the Engineer.

C. Unsuitable Bearing

1. If suitable bearings for foundations are not encountered at the elevations indicated on the Drawings, immediately notify the Engineer.
2. Do not proceed further until instructions are received.

3.04 DEWATERING REQUIREMENT

A. The Contractor may use any dewatering method he deems feasible so long as it results in working in the dry and stable soil conditions.

B. The Contractor shall conform and meet all conditions, obtain necessary permits and requirements of the regulatory agencies that have jurisdiction.

C. It is the intent of these specifications that an adequate dewatering system be installed to lower and control the groundwater in order to permit excavation, construction, grading and the placement of fill materials, all to be performed under dry conditions. The dewatering system shall be adequate to pre-drain the water-bearing strata above and below the bottom of the excavation.

D. The Contractor shall be solely responsible for the arrangement, location and depths of dewatering system necessary to accomplish the work described under this section of the specifications. The dewatering shall be accomplished in a manner that will reduce the hydrostatic head below any excavation to the extent that the water level in the construction area are a minimum of three (3) feet below the prevailing excavation surface and any surface to be compacted; will prevent the loss of fines, seepage, boils, quick conditions, or softening of the foundation strata; will maintain stability of the sides and bottom of the excavation; and will result in all construction operations being performed in the dry.

E. The Contractor shall promptly dispose of all water removed from the excavations in such a manner as will not endanger public health, damage public or private property, or affect adversely any portion of the work under construction or completed by him or any other Contractor. Contractor shall obtain written permission from the Owner for any property involved before digging ditches or constructing water courses for the removal of water.

F. The disposal of water from the dewatering system shall meet the requirements of all regulatory agencies having jurisdiction.

G. If the dewatering requirements are not satisfied due to inadequacy or failure of the dewatering system, then loosening of the foundation strata, or instability of the slopes, or damage to the foundations or structures may occur. The supply of all labor and materials, and the performance of all work necessary to carry out additional work for reinstatement of the structures of foundation soil resulting from such inadequacy or failure shall be undertaken by the Contractor subject to the approval of the Engineer, and at no additional expense to the Owner.

3.05 ROCK EXCAVATION

A. Definition of Mass Rock (only for payment purposes where payment is on a unit quantity basis): Any material which cannot be excavated with a single-tooth ripper drawn by a crawler tractor having a minimum draw bar pull rated at not less than 56,000 pounds (comparable to Caterpillar D 8K or comparable to Caterpillar 973 front-end loader, and occupying an original volume of at least one cubic yard). The Engineer shall be the sole determinate as to the limits to which the material is classified as rock.

B. Definition of Trench Rock (only for payment purposes where payment is on a unit quantity basis): Any material which cannot be excavated with a backhoe having a bucket curling force rated at not less than 25,700 pounds (Caterpillar Model 225 or equivalent), and occupying an original volume of at least one-half (1/2) cubic yards.

C. Excavation: Where rock is encountered within excavation for structures, it shall be excavated to the lines and grades indicated on the Drawings or as otherwise directed by the Engineer. The Contractor shall be responsible for obtaining any blasting permits required.

D. Blasting: Not Allowed.

E. If excess excavation is made or the material becomes disturbed so as to require removal below final subgrade elevations or beyond the prescribed limits, the resulting space shall be refilled with concrete in accordance with Section 2.07 of this Specification

3.06 COMPACTION

A. Fill materials supporting roadways, parking areas, sidewalks, structures, and buildings and backfill around structures shall be compacted to 98 percent of the standard proctor density. The top 12 inches of fill materials supporting structures, concrete pads, pavement, curb and gutter shall be compacted to 98 percent of the standard proctor density. Fill placed for general site grading shall be compacted to 90 percent of the standard proctor density.

B. Compaction of embankments shall be by vibratory sheepsfoot or pad-foot rollers with staggered, uniformly spaced knobs and suitable cleaning devices. The projected area of each knob and the number and spacing of the knobs shall be such that the total weight of the roller and ballast when distributed over the area of one row of knobs shall be 250 psi. Placement and compaction of materials shall extend at least 5 feet beyond the final contours sufficiently to insure compaction of the material at the resulting final surface. Final contours shall then be achieved by a tracked bulldozer shaping the face of the embankment.

C. Compaction of backfill next to walls shall be accomplished with hand-powered tamping equipment. The backfill shall be placed in 8-inch maximum lifts, with each lift compacted to 95 percent of standard proctor density.

D. If tests indicate that density of fill is less than that specified, the area shall be, as directed by the Engineer, either recompacted or undercut, filled, and compacted until specified density is achieved.

3.07 FILL

A. Controlled Fill

1. The fill for roadways, parking areas, walks, structures, and building slabs on grade shall be controlled fill.
2. After the existing ground or excavated area has been proofrolled and examined by the Engineer, all holes and other irregularities shall be filled and compacted before the main fill is placed.
3. The fill shall be placed in even layers not exceeding 8 inches in depth and shall be thoroughly compacted as herein specified.
4. If an analysis of the soil being placed shows a marked difference from one location to another, the fill being placed shall not be made up of a mixture of these materials.
5. Each different type of material shall be handled continuously so that field control of moisture and density may be based upon a known type of material.
6. No fill shall be placed following a heavy rain without first making certain on isolated test areas that compaction can be obtained without damage to the already compacted fill.

B. Proofrolling

1. All areas where roadways, parking areas, sidewalks, structures, and buildings are to be constructed on cut areas, compacted fill, and other areas where indicated on the Drawings, shall be proofrolled to detect soft spots prior to the placement of fill material or building foundations.
2. Proofrolling shall be performed using a fully loaded tandem-axle dump truck 20 tons or other suitable pneumatic tired equipment over the subgrade before the subgrade is shaped.
3. Proofrolling shall be witnessed by the Engineer.
4. Subgrade shall be proofrolled with 10 overlapping passes of the roller. Depressions that develop during the proofrolling

operation shall be filled with suitable material and those filled areas shall be proofrolled with six passes of the roller. If, after having been filled and proofrolled, the subgrade areas that still "pump" or "rut", shall be further evaluated by a geotechnical engineer, and remedial work be determined based on the conditions found at locations under structures or pavement. The contractor shall execute remedial work determined by the geotechnical engineer to achieve a subgrade acceptable to the Engineer.
5. After the proofrolled subgrade has been accepted by the Engineer, the surface of the subgrade shall be finish rolled with a smooth steel wheel roller weighing not less than 10 tons. Finished surface of the subgrade shall be within a tolerance of 1/4 inch at every point.
6. Conduits, pipes, culverts, and underdrains shall be neither disturbed nor damaged by proofrolling operations. Rollers shall neither pass over, nor approach closer than five feet to, conduits, pipes, culverts, and underdrains unless the tops of those products are deeper than three feet.

C. Placement

1. Prior to placement of any material in embankments, the area within embankment limits shall be stripped of topsoil and all unsuitable materials removed in accordance with this Section. The area shall then be scarified to a depth of at least 6 inches.
2. Fill materials shall be placed in continuous, approximately horizontal layers extending the full width of the embankment cross section and the full dimension of the excavation where practical and having an uncompacted thickness of not over 8 inches.

D. Final Grading: Upon completion of construction operations, the area shall be graded to finish contour elevations and grades shown on the Drawings. Graded areas shall be made to blend into conformation with remaining ground surfaces. All surfaces shall be left smooth and free to drain.

E. Excess Material: Surfaces and slopes of waste fills shall be left smooth and free to drain.

F. Moisture

1. Fill materials shall be placed at optimum moisture content within practicable limits, but not less or more than two percent of optimum. Optimum moisture shall be maintained by sprinkling the layers as placed or by allowing materials to dry before placement.
2. If fill material is too wet, provide and operate approved means to assist the drying of the fill until suitable for compaction.
3. If fill material is too dry, provide and operate approved means to add moisture to the fill layers.

3.08 BACKFILLING

A. Backfill carefully to restore the ground surface to its original condition. Dispose of excess material in accordance with this Section.

B. Compact backfill underlying roadways, parking areas, sidewalks, structures and buildings in accordance with the requirements of Article 3.06 of this Section.

C. Backfilling Around Structures

1. General
a. Remove debris from excavations before backfilling.
b. Do not backfill against foundation walls until so directed by the Engineer nor until all indicated perimeter insulation and/or waterproofing is in place.
c. Protect such insulation and/or waterproofing during filling operations.
d. Do not backfill against water retaining structures until successful leakage tests have been completed.

e. Wherever possible, backfilling shall be simultaneous on both sides of walls to equalize lateral pressures.
f. Do not backfill against walls until all permanent construction is in place to furnish lateral support on both top and bottom of wall.
g. Backfilling against walls shall take place after all the concrete in the affected members has attained the specified strengths.
h. To prevent excessive lateral pressure on external walls, large compaction equipment shall not be allowed within a zone wall footing.

2. Materials: Backfill material placed against structures built or encountered during the work of this Section shall be suitable fill material. No broken concrete, bricks or similar materials will be permitted as backfill.

3.09 GRADING

A. General: Perform all rough and finish grading required to attain the elevations indicated on the Drawings. Perform finish grading to an accuracy of +0.10 foot.

B. Treatment After Completion of Grading

1. After grading is completed, permit no further excavation, filling or grading, except with the approval of the Engineer.
2. Use all means necessary to prevent the erosion of freshly graded areas during construction and until such time as permanent drainage and erosion control measures have been installed.

3.10 SETTLEMENT

A. The Contractor shall be responsible for all settlement of backfill, fills and embankments which may occur within one year after final acceptance of the Work by the Owner.

B. The Contractor shall make, or cause to be made, all repairs or replacements made necessary by settlement within 30 days after receipt of written notice from the Engineer or Owner.

3.11 CLEAN-UP

A. Leave unused materials in a neat, compact stockpile.

B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

C. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

END OF SECTION

SECTION 02317
TRENCH EXCAVATION AND BACKFILL

PART 1 GENERAL

1.01 SCOPE

A. The work under this Section consists of furnishing all labor, equipment and materials and performing all operations in connection with the trench excavation and backfill required to install the site utilities, including all pipelines, electrical conduits, and duct banks as shown on the plans and as specified.

B. Excavation shall include the removal of any tree stumps, brush, debris or other obstacles which remain after the clearing and grubbing operations, which may obstruct the work, and the excavation and removal of all earth, rock or other materials to the extent necessary to install the pipe and appurtenances in conformance with the lines and grades shown on the plans and as specified.

C. Backfill shall include the filling and compaction of the trenches and excavations up to the surrounding ground surface or road grade at crossing.

D. The trench is divided into five specific areas:

1. Foundation: The area beneath the bedding, sometimes also referenced to as trench stabilization.
2. Bedding: The area above the trench bottom (or foundation) and below the bottom of the barrel of the pipe.
3. Haunching: The area above the bottom of the barrel of the pipe up to a specified height above the bottom of the barrel of the pipe.
4. Initial Backfill: The area above the haunching material and below a plane 12 inches above the top of the barrel of the pipe.
5. Final Backfill: The area above a plane 12 inches above the top of the barrel of the pipe.

E. The choice of method, means, techniques and equipment rests with the Contractor. The Contractor shall select the method and equipment for trench excavation and backfill depending upon the type of material to be excavated and backfilled, the depth of excavation, the amount of space available for operation of equipment, storage of excavated material, proximity of man made improvements to be protected, available easement or right of way and prevailing practice in the area.

1.02 RELATED SECTIONS

A. Site Preparation: Section 02200

B. Erosion and Sedimentation Control: Section 02370

1.03 GENERAL

A. The elevations shown on the Drawings as existing are taken from the best existing data and are intended to give reasonably accurate information about the existing elevations. They are not precise and the Contractor shall become satisfied as to the exact quantities of excavation and fill required.

B. Earthwork operations shall be performed in a safe and proper manner with appropriate precautions being taken against all hazards.

C. All excavated and filled areas for structures, trenches, fills, topsoil areas, embankments, and channels shall be maintained by the Contractor in good condition at all times until final acceptance by the Owner. All damage caused by erosion or other

construction operations shall be repaired by the Contractor using material of the same type as the damaged material.

D. The Contractor shall control grading in a manner to prevent surface water from running into excavations. Obstruction of surface drainage shall be avoided and means shall be provided whereby storm water can be uninterrupted in existing gutters, other surface drains, or temporary drains. Free access must be provided to all fire hydrants and meters.

E. Tests for compaction and density shall be conducted by the Contractor or by an independent testing laboratory selected by the Owner.

1. The soils testing laboratory is responsible for the following:
a. Field compaction testing shall be based on using the maximum dry density determined by the Standard Proctor Compaction Test in accordance with ASTM D 698.
b. Determination of in place backfill density shall be done in accordance with ASTM D 1556, "Density and unit weight of Soil In Place by the Sand-Cone Method", ASTM D 2937, "Density of Soil In Place by the Drive Cylinder Method" or ASTM D 2922, "Density of Soil and Soil Aggregate In Place by Nuclear Methods (Shallow Depth)".
c. Test frequency for trenches and confined areas of 1 test per two foot vertical lift for every 100 linear feet.
d. Inspecting and testing stripped site, subgrades and proposed fill materials.

2. Contractor's duties relative to testing include:
a. Notifying laboratory of conditions requiring testing.
b. Coordinating with laboratory for field testing.
c. Providing representative fill soil samples to the laboratory for test purposes. Provide 50 pound samples of each fill soil.

3. Inspection
a. Earthwork operations, suitability of excavated materials for fill and backfill, and placing and compaction of fill and backfill is subject to inspection. Engineer will observe earthwork operations.
b. Foundations and shallow spread footing foundations are required to be inspected by an engineer to verify suitable bearing and construction.

F. All earthwork operations shall comply with the requirements of OSHA Construction Standards, Part 1926, Subpart P, Excavations, Trenching, and Shoring, and Subpart O, Motor Vehicles, Mechanized Equipment, and Marine Operations, and shall be conducted in a manner acceptable to the Engineer.

G. It is understood and agreed that the Contractor has made a thorough investigation of the surface and subsurface conditions of the site and any special construction problems which might arise as a result of nearby watercourses and floodplains. The Contractor shall be responsible for providing all services, labor, equipment, and materials necessary or convenient to the Contractor for completing the work within the time specified in these Contract Documents.

H. SAFETY

Perform all trench excavation and backfilling activities in accordance with the Occupational Safety and Health Act of 1970 (PL 91 596), as amended. The Contractor shall pay particular attention to the Safety and Health Regulations Part 1926, Subpart P "Excavation, Trenching & Shoring" as described in OSHA publication 2226.

PART 2 PRODUCTS

2.01 SOILS CLASSIFICATIONS

See Section 02300, Earthwork.

2.02 PIPE BEDDING CLASSES

A. Class A Bedding shall consist of a continuous concrete cradle as determined by the Engineer.

B. Class B Bedding: The pipe shall be bedded with No. 57 stone bedding material placed on the trench foundation. The bedding shall have a minimum thickness beneath the pipe of 4 inches or one-eighth of the outside diameter of the pipe, whichever is greater, and shall extend up the side to the springline. Initial backfill from the pipe horizontal centerline to a level not less than 12 inches above the top of the pipe and shall be bedding material or carefully placed native soil, compacted to 90% of Standard Proctor Density. The final backfill of the soil to ground surface shall be compacted to the specified density.

C. Class C Bedding: The pipe shall be bedded in No. 57 stone bedding material placed on the trench foundation. The bedding shall have a minimum thickness beneath the pipe of 4 inches or one-eighth of the outside diameter of the pipe, whichever is greater, and shall extend up the sides of the pipe one-sixth the outside diameter of the pipe. Initial backfill between the top of haunching and a point 12 inches above the top of pipe shall be compacted to 90% of Standard Proctor Density. The final backfill of the soil to ground surface shall be compacted to the specified density.

D. Crushed stone utilized for bedding and haunching shall meet the requirements of the Georgia Department of Transportation Specification 800.01, Group I (limestone, marble or dolomite) or Group II (quartzite, granite or gneiss). Stone size shall be between No. 57 and No. 4, inclusive.

2.03 TRENCH FOUNDATION MATERIALS

When unsuitable material is encountered and extends more than 6 inches below the pipe. Crushed stone shall be utilized for trench foundation (trench stabilization) and shall meet the requirements of the Georgia Department of Transportation Specification 800.01, Group I (limestone, marble or dolomite) or Group II (quartzite, granite or gneiss). Stone size shall be between No. 57 and No. 4, inclusive or Class I material.

2.04 FILTER FABRIC

See Section 02300, Earthwork

2.05 BEDDING AND HAUNCHING MATERIALS

A. Crushed stone utilized for bedding and hunching shall meet the requirements of the Georgia Department of Transportation Specification 800.01, Group I (limestone, marble or dolomite) or Group II (quartzite, granite or gneiss). Stone size shall be between No. 57 and No. 4, inclusive.

B. Earth materials shall be suitable materials selected from the trench excavation. Suitable materials shall be clean and free of rock larger than 2 inches at its largest dimension, organics, cinders, stumps, limbs, frozen earth or mud, man made wastes and other unsuitable materials. Should the material excavated from the trench be saturated, the saturated material may be used as earth material, provided it is allowed to dry properly and it is capable of meeting the specified compaction requirements. When necessary, earth bedding and haunching materials shall be moistened to facilitate compaction by tamping.

2.06 INITIAL BACKFILL

A. Initial backfill material shall be earth materials or crushed stone as specified for bedding and haunching materials. Soil shall be tamped to 90% of Standard Proctor Density (ASTM D698).

B. Earth materials utilized for initial backfill shall be suitable materials selected from materials excavated from the trench. Suitable materials shall be clean and free of rock larger than 2 inches at its largest dimension, organics, cinders, stumps, limbs, frozen earth or mud, man made wastes and other unsuitable materials. Should the material excavated from the

trench be saturated, the saturated material may be used as earth material, provided it is allowed to dry properly and it is capable of meeting the specified compaction requirements. When necessary, initial backfill materials shall be moistened to facilitate compaction by tamping. If materials excavated from the trench are not suitable for use as initial backfill material, provide select material conforming to the requirements of this Section.

2.07 FINAL BACKFILL

A. Final backfill material shall be general excavated earth materials, shall not contain rock larger than 2 inches at its greatest diameter, cinders, stumps, limbs, man made wastes and other unsuitable materials. If materials excavated from the trench are not suitable for use as final backfill material, provide select material conforming to the requirements of this Section.

B. In areas not used for streets or driveways, carefully refill in layers not exceeding 8 inches in thickness and thoroughly tamp with hand tamps to one foot above the top of the pipe. Finish filling by machine without tamping. As trench settles, bring back to grade by adding more material. Maintain trenches in safe condition at all times. Restore all special grassing and shrubbery, fences, etc., to original condition. The remaining backfill shall be thoroughly compacted in 8 inch layers to at least 95% (percent) of the Standard Proctor Density (ASTM D698).

C. In streets, roadways and driveways, carefully refill in layers not exceeding 8 inches in thickness and thoroughly tamp with hand tamps to one foot above the top of the pipe. The remaining backfill shall be thoroughly compacted in 8 inch layers to at least 98% (percent) of the Standard Proctor Density (ASTM D698).

D. Backfilling and tamping work in state highway right-of-ways and streets under jurisdiction of the State Highway Department will be in accordance with the State of Georgia Department of Transportation "Policy and Procedure for Accommodation of Utilities".

2.08 CONCRETE

Concrete for bedding, haunching, initial backfill or encasement shall have a compressive strength of not less than 3,000 psi, with not less than 5.5 bags of cement per cubic yard and a slump between 3 and 5 inches. Ready mixed concrete shall be mixed and transported in accordance with ASTM C 94. Reinforcing steel shall conform to the requirements of ASTM A 615, Grade 60.

2.09 FLOWABLE FILL

Flowable fill, where required for trench backfill, shall meet the requirements of Georgia Department of Transportation Standard Specifications, Section 600 for Excavatable or Non-Excavatable type.

PART 3 EXECUTION

3.01 EXAMINATION

A. Identify required lines, levels, contours, and datum locations.

B. Locate, identify, and protect utilities that remain and protect from damage. The contractor is required to contact the Utilities Protection Center, Inc. in the State of Georgia call 1-800-282-7411 prior to any excavation or construction.

Additional information is available at www.gaupc.com. The contractor shall first, Call Before You Dig. Second, Wait the Required Amount of Time. Third, Respect the Marks and Lastly, Dig With Care.

C. Notify utility company to remove and relocate utilities.

3.02 TRENCH EXCAVATION

A. Notify of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.

B. Slope banks of excavations deeper than 4 feet to angle of repose or less until shored.

C. Do not interfere with 45 degree bearing splay of foundations.

D. Cut trenches O.D of pipe plus two feet minimum or O.D. of pipe plus four feet maximum wide enough to allow installation and inspection of utilities.

E. Hand trim excavations. Remove loose matter.

F. Remove large stones and other hard matter which could damage piping or impede consistent backfilling or compaction.

G. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd (0.25 cu m) measured by volume.

H. Remove excavated material that is unsuitable for re-use from site.

I. Stockpile excavated material to be re-used in areas designated on site.

J. Remove excess excavated material from site.

K. In areas not used for streets and in unpaved streets, maximum trench width shall be the pipe diameter plus 24 inches. Protect all trees, shrubs and structures. Protect all fences and replace those damaged/removed with like kind. Keep work and equipment within easement limits. Repair and replace any damage.

L. Paved streets shall have a maximum trench width of pipe diameter plus 24 inches. Shore and brace trench walls as necessary to prevent damage to existing paving. Do not cut existing sidewalk, or curb and gutter without approval by the Engineer. Use rubber tired equipment only on streets. Repair and replace all damage. Saw cut all pavements for smooth edge on replacement.

3.03 DEWATERING REQUIREMENT

A. The Contractor may use any dewatering method he deems feasible so long as it results in working in the dry and stable soil conditions.

B. The Contractor shall conform and meet all conditions, obtain necessary permits and requirements of the regulatory agencies that have jurisdiction.

C. It is the intent of these specifications that an adequate dewatering system be installed to lower and control the groundwater in order to permit excavation, construction, grading and the placement of fill materials, all to be performed under dry conditions. The dewatering system shall be adequate to pre-drain the water-bearing strata above and below the bottom of the excavation.

D. The Contractor shall be solely responsible for the arrangement, location and depths of dewatering system necessary to accomplish the work described under this section of the specifications. The dewatering shall be accomplished in a manner that will reduce the hydrostatic head below any excavation to the extent that the water level in the construction area are a minimum of two (2) feet below the prevailing excavation surface and any surface to be compacted; will prevent the loss of fines, seepage, boils, quick conditions, or softening of the foundation strata; will maintain stability of the sides and bottom of the excavation; and will result in all construction operations being performed in the dry.

E. The Contractor shall promptly dispose of all water removed from the excavations in such a manner as will not endanger public health, damage public or private property, or affect adversely any portion of the work under construction or completed by him or any other Contractor. Contractor shall obtain written permission from the Owner for any property involved before digging ditches or constructing water courses for the removal of water.

F. The disposal of water from the dewatering system shall meet the requirements of all regulatory agencies having jurisdiction.

G. If the dewatering requirements are not satisfied due to inadequacy or failure of the dewatering system, then loosening of the foundation strata, or instability of the slopes, or damage to the foundations or structures may occur. The supply of all labor and materials, and the performance of all work necessary to carry out additional work for reinstatement of the structures of foundation soil resulting from such inadequacy or failure shall be undertaken by the Contractor subject to the approval of the Engineer, and at no additional expense to the Owner.

3.04 ROCK EXCAVATION

A. Definition of Mass Rock (only for payment purposes where payment is on a unit quantity basis): Any material which cannot be excavated with a single-tooth ripper drawn by a crawler tractor having a minimum draw bar pull rated at not less than 56,000 pounds (comparable to Caterpillar D 8K or comparable to Caterpillar 973 front-end loader, and occupying an original volume of at least one cubic yard). The Engineer shall be the sole determinate as to the limits to which the material is classified as rock.

B. Definition of Trench Rock (only for payment purposes where payment is on a unit quantity basis): Any material which cannot be excavated with a backhoe having a bucket curling force rated at not less than 25,700 pounds (Caterpillar Model 225 or equivalent), and occupying an original volume of at least one-half (1/2) cubic yards.

C. Excavation: Where rock is encountered within excavation for structures, it shall be excavated to the lines and grades indicated on the Drawings or as otherwise directed by the Engineer. The Contractor shall be responsible for obtaining any blasting permits required.

D. Blasting: Not Allowed.

E. If excess excavation is made or the material becomes disturbed so as to require removal below final subgrade elevations or beyond the prescribed limits, the resulting space shall be refilled with concrete in accordance with Section 2.08 of this Specification

3.05 SHEETING, BRACING AND SHORING

A. Trench Shield: A trench shield or box may be used to support the trench walls. The use of a trench shield does not necessarily preclude the additional use of bracing and sheeting. When trench shields are used, care must be taken to avoid disturbing the alignment and grade of the pipe or disrupting the haunching of the pipe as the shield is moved. When the

bottom of the trench shield extends below the top of the pipe, the trench shield will be raised in 6 inch increments with specified backfilling occurring simultaneously. At no time shall the trench shield be "dragged" with the bottom of the shield extending below the top of the pipe or utility.

B. Remove bracing and sheeting in units when backfill reaches the point necessary to protect the utility and adjacent property. Leave sheeting in place when in the opinion of the Engineer it cannot be safely removed or is within three feet of an existing structure, utility, or pipeline. Cut off any sheeting left in place at least two feet below the surface.

C. Sheet piling within three feet of an existing structure or utility shall remain in place, unless otherwise directed by the Engineer.

3.06 TRENCH FOUNDATION AND STABILIZATION

A. The bottom of the trench shall provide a foundation to support the utility and its specified bedding. The trench bottom shall be graded to support the utility and bedding uniformly throughout its length and width.

B. If, after dewatering as specified above, the trench bottom is spongy, or if the trench bottom does not provide firm, stable footing and the material at the bottom of the trench will still not adequately support the utility, the trench will be determined to be unsuitable.

C. If in the opinion of the Engineer the undisturbed material at the trench bottom constitutes an unstable pipe foundation, then the Contractor shall replace such unstable materials with crushed stone.

D. If the crushed stone does not provide adequate foundation, then the trench shall be excavated to a depth of at least two feet below the specified trench bottom. The over excavation shall be filled with No. 4 foundation stone to the bottom of the bedding stone or the over excavation shall be lined with filter fabric, with the fabric being supported along the sides of the trench to a point above the top of the utility. The trench shall then be filled with No. 57 foundation stone to the top of the pipe and the filter fabric shall be overlapped above the pipe and stone.

3.07 BEDDING AND HAUNCHING

A. Prior to placement of bedding material, the trench bottom shall be free of any water, loose rocks, boulders or large dirt clods.

B. Bedding material shall be placed to provide uniform support along the bottom of the pipe and to maintain the pipe at the proper elevation. The initial layer of bedding placed to receive the pipe shall be brought to the grade and dimensions indicated on the Drawings. All bedding shall extend the full width of the trench bottom. The pipe shall be placed and brought to grade by tamping the bedding material or by removal of the excess amount of the bedding material under the pipe. Adjustment to grade line shall be made by scraping away or filling with bedding material. Wedging or blocking up of pipe shall not be permitted. Applying pressure to the top of the pipe, such as with a backhoe bucket, to lower the pipe to the proper elevation or grade shall not be permitted. Each pipe section shall have a uniform bearing on the bedding for the length of the pipe, except at joints.

C. At each joint, excavate bell holes of ample depth and width to permit the joint to be assembled properly and to relieve the pipe bell of any load.

D. After the pipe section is properly placed, add the haunching material to the specified depth. The haunching material shall be shovel sliced, tamped, vigorously chinked or otherwise consolidated to provide uniform support for the pipe barrel and to fill completely the voids under the pipe, including the bell hole. Prior to placement of the haunching material, the bedding shall be clean and free of any water, loose rocks, boulders or dirt clods.

E. Gravity Pipelines and Accessories: Lay PVC/HDPE (plastic pipe) gravity sewer pipe with minimum Class B bedding. Lay all other gravity sewer pipelines with Class C bedding, unless shown or specified otherwise. All trenches under paving, concrete, etc. shall be placed in Class B bedding only.

F. Bedding for storm drain piping shall be as specified in Section 02635 Storm Drainage Piping.

G. Manholes: Excavate to a minimum of 12 inches below the planned elevation of the base of the manhole. Place and compact crushed stone bedding material to the required grade before constructing the manhole.

H.Excessive Width and Depth

1. If the trench is excavated in excess of the pipe diameter plus two feet, provide the next higher bedding type.

2. If the trench is excavated to excessive depth, provide foundation stone to the bottom of the bedding material.

J. Compaction: Bedding and haunching materials under pipe, manholes and accessories shall be compacted to a minimum of 95 percent of the maximum dry density, unless shown or specified otherwise.

3.08 CONCRETE ENCASEMENT FOR PIPELINES

Where concrete encasement is shown on the Drawings for pipelines not under structures, excavate the trench to provide a minimum of 6 inches clearance from the bell of the pipe. Lay the pipe to line and grade on concrete blocks. In lieu of bedding, haunching and initial backfill, place concrete to the full width of the trench and to a height of not less than 6 inches above the pipe bell. Do not backfill the trench for a period of at least 24 hours after concrete is placed.

3.09 INITIAL BACKFILL

A. Fill up to subgrade elevations unless otherwise indicated.

B. Employ a placement method that does not disturb or damage other work.

C. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.

D. Maintain optimum moisture content of fill materials to attain required compaction density.

E. Granular Fill: Place and compact materials in equal continuous layers not exceeding 6 inches compacted depth.

F. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches compacted depth.

G. Correct areas that are over-excavated.

1. Thrust bearing surfaces: Fill with concrete.
2. Other areas: Use general fill, flush to required elevation, compacted to minimum 98 percent of standard proctor dry density.

H.Compaction Density Unless Otherwise Specified or Indicated:

1. Under paving, slabs-on-grade, and similar construction: 98 percent of standard proctor density.
2. At other locations: 95 percent of standard proctor density.

3.10 FINAL BACKFILL

A. Backfill to contours and elevations indicated using suitable materials.

B. Employ a placement method that does not disturb or damage other work.

C. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.

D. Maintain optimum moisture content of fill materials to attain required compaction density.

E. Granular Fill: Place and compact materials in equal continuous layers not exceeding 6 inches compacted depth.

F. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches compacted depth.

G. Slope grade away from building minimum 2 inches in 10 ft, unless noted otherwise. Make gradual grade changes. Blend slope into level areas.

H. Compaction Density Unless Otherwise Specified or Indicated:

1. Under paving, slabs-on-grade, and similar construction: 98 percent of standard proctor density.
2. At other locations: 95 percent of standard proctor density.

I. Reshape and re-compact fills subjected to vehicular traffic.

3.11 TOLERANCES

A. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.

B. Top Surface of Backfilling Under Paved Areas: Plus or minus 1 inch from required elevations.

3.12 CLEAN-UP

A. Leave unused materials in a neat, compact stockpile.

B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

C. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

END OF SECTION

SECTION 02370
EROSION AND SEDIMENTATION CONTROL

PART 1 GENERAL

1.01 SCOPE

A. This section covers the control measures required but not limited to during construction until final acceptance to control water run-off, erosion, sedimentation, and unreasonable amounts of dust. Measures to adequately control erosion and siltation throughout project construction are required whether or not they are shown on the plans. This control shall be accomplished through the use of berms, dikes, sediment basins and barriers, slope drains, grassing, and other devices as outlined in the Georgia Erosion and Sedimentation Control Act of 1975 and any additional federal or local ordinances. All erosion and control measures shall be designed for a 25 year storm event and installed according to the Manual for Erosion and Sediment Control in Georgia (1975 and as amended in the latest edition) and/or The Department of Transportation, State of Georgia, Standard Specifications Construction of Roads and Bridges Latest Edition. Also, Storm Water Discharge(s) will be in strict compliance with State of Georgia Department of Natural Resources Environmental Protection Division General Permit No. GAR 100001, 100002, OR 100003 effective August 1, 2023 (as applicable).

B. The section also specifies the subsequent removal of temporary erosion and sedimentation controls.

C. Grassing in accordance with this Specification is considered a temporary measure to prevent soil erosion until the permanent grassing can be established. See Section 02920 Lawns and Grassing for permanent grassing requirements.

E. Neither a Land Disturbing Permit nor a NPDES Permit is required for this project.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 02200 – Site Preparation.

1.03 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of these Specifications as if incorporated herein, except as modified herein to the extent referenced. Referenced standards and recommended practices shall be the latest versions of any such documents. The contractor shall be responsible for complying with requirements of these regulations.

B. Environmental Protection Agency (EPA) Regulations:

1. 40 CFR 112 Oil Pollution Prevention
2. 40 CFR 116 Designation of Hazardous Substances
3. 40 CFR 122 EPA Administered Permit Programs: The National Pollutant Discharge Elimination System (NPDES)
4. 40 CFR 136 The National Pollutant Discharge Elimination System (NPDES)
5. 40 CFR 257 Criteria for Classification of Solid Waste Disposal Facilities and Practices
6. 40 CFR 258 Criteria for Municipal Solid Waste Landfills (Effective 10-9-93)
7. 40 CFR 261 Identification and Listing of Hazardous Waste
8. EPA 833-B-92-001 "NPDES Storm Water Sampling Guidance Document

C. Georgia Environmental Protection Division (EPD) Rules:

1. Chapter 391-3-4 Solid Waste Management Rules

1.04 QUALITY ASSURANCE

A. The temporary and permanent erosion and sedimentation control measures shown on the Drawings are minimum requirements. Any additional erosion and sedimentation control measures required by the Contractor's means, methods, techniques and sequence of operation will be installed by the Contractor at the unit price bid indicated on the Bid Schedule.

B. The Contractor shall be required to meet the requirements of the National Pollution Discharge Elimination System (NPDES) GAR 100001, 100002, or 100003 dated August 1, 2023 (as applicable). The Contractor will be required to follow all BMPs (Best Management Practices) as shown on the Erosion, Sedimentation and Pollution Control Plan and shall inspect, monitor and maintain those BMPs as required by the above permit, if applicable. The Contractor will be required to notify the storm water sampling subcontractor whenever there is a storm occurrence and to make required reports to EPD General Permit.

C. Basic Principles

1. Coordinate the land disturbance activities to fit the topography, soil types and conditions.
2. Minimize the disturbed area and the duration of exposure to erosive elements.

3.Provide temporary or permanent stabilization to disturbed areas immediately after rough grading is complete.
4.Safely convey run off from the site to a stable outlet to prevent flooding and damage to downstream facilities resulting from increased runoff from the site.
5.Retain sediment on site that was generated on site.
6.Minimize encroachment upon watercourses.

D. Implementation:

1.The Contractor is solely responsible for the control of erosion within the Project site and the prevention of sedimentation from leaving the Project site or entering waterways.
2.The Contractor shall install temporary and permanent erosion and sedimentation controls, which will ensure that runoff from the disturbed area of the Project site, shall pass through a filter system before exiting the Project site.
3.The Contractor shall provide temporary and permanent erosion and sedimentation control measures to prevent silt and sediment from entering the waterways.
4.The Contractor shall limit land disturbance activity to those areas shown on the Drawings.
5.The Contractor shall maintain erosion and sedimentation control measures within disturbed areas on the entire site at no additional cost to the Owner until the acceptance of the Project. Maintenance shall include mulching, re seeding, re-sodding, clean out of sediment barriers and sediment ponds, replacement of washed out or undermined rip rap and erosion control materials, to the satisfaction of the Engineer.
6. All fines imposed for improper erosion and sedimentation control shall be paid by the Contractor.

PART 2 PRODUCTS

2.01 BEST MANAGEMENT PRACTICES

The vegetative measures and structural practices shall be in accordance with chapter six of the "Manual for Erosion and Sediment Control in Georgia" as currently amended.

2.02 NPDES STORMWATER SAMPLING

N/A

PART 3 EXECUTION

3.01 GENERAL

A. The 24-hour contact is: Jeremy Brown, 229-430-6120.

B. All erosion and sedimentation control devices and structures shall be inspected by the Contractor at least once a week and immediately after each rainfall occurrence. Any device or structure found to be damaged will be repaired or replaced by the end of the day.

C. All erosion and sedimentation control measures and devices shall be constructed and maintained as indicated on the Drawings or specified herein until adequate permanent disturbed area stabilization has been provided and accepted by the Engineer. Once adequate permanent stabilization has been provided and accepted by the Engineer, all temporary erosion and sedimentation control structures and devices shall be removed.

D. The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to, or concurrent with, land-disturbing activities.

3.02 INSTALLATION

A. Construction Exit (Not Applicable)

1. Construction exit(s) shall be placed as shown on the Drawings and as directed by the Engineer. A construction exit shall be located at any point traffic will be leaving a disturbed area to a road, driveway, sidewalk or parking area.
2. Placement of Construction Exit Material: The ground surface upon which the construction exit material is to be placed shall be prepared to a smooth condition free from obstructions, depressions or debris. The plastic filter fabric shall be placed to provide a minimum number of overlaps and a minimum width of one foot of overlap at each joint. The stone shall be placed with its top elevation conforming to the surrounding roadway elevations. The stone shall be dropped no more than three feet during construction.
3. Construction Exit Maintenance: The Contractor shall regularly maintain the exit with the top dressing of stone to prevent tracking or flow of soil onto public rights of way and paved surfaces as directed by the Engineer.
4. Construction Exit Removal: Construction exit(s) shall be removed and properly disposed of offsite when the disturbed area has been properly stabilized, the tracking or flow of soil onto public rights of way or paved surfaces has ceased and as directed by the Engineer.

B. Sediment Barriers

1. Sediment barriers shall include, but are not necessarily limited to, silt fences, hay bales, rock check dams, inlet sediment traps or any other device which prevents sediment from exiting the disturbed area.
2. Silt fences, hay bales and rock check dams shall not be used in any flowing stream, creek or river.
3. Sediment barriers shall be installed as shown on the Drawings and as required by the Contractor's construction sequence and methods.
4. Sediment barriers shall be maintained to ensure the depth of impounded sediment is no more than one half of the original height of the barrier. Torn, damaged, destroyed or washed out barriers shall be repaired, reinforced or replaced with new material.
5. Sediment Barrier Removal

a. Sediment barrier shall be removed once the disturbed area has been stabilized with a permanent vegetative cover and the sediment barrier is no longer required.
b. Accumulated sediment shall be removed from the barrier and spread over excess soil disposal area.
c. All non biodegradable parts of the barrier shall be disposed of properly. Used bales may be spread evenly across the disposal area as a mulching material.
d. The disturbed area created by barrier removal shall be permanently stabilized.

C. Rip Rap

1. Rip rap shall be placed as shown on the Drawings and as directed by the Engineer. Rip rap shall be placed at all points where natural vegetation is disturbed on the banks of streams or drainage ditches. Compact backfill and place rip rap to prevent subsequent settlement and erosion. This requirement applies equally to construction along side a stream or drainage ditch as well as crossing a stream or drainage ditch.
2. When trenching across a stream or drainage ditch, rip rap to be placed shall be brought to the correct lines and grades before placement is commenced. Where filling of depressions is required, the new material shall be compacted with hand or mechanical tampers. Unless at creek banks or otherwise shown or specified, rip rap shall begin in a toe ditch constructed in original ground, and the side next to the fill or cut shall have that same slope. After the rip rap is placed, the toe ditch shall be backfilled and the excess dirt hauled off of the site and disposed of properly.

D. Filter Fabric

1. Plastic filter fabric shall be placed under all rip rap unless shown or specified otherwise.
2. Filter fabric shall not be placed under rip rap on stream or drainage ditch crossings.
3. The surface to receive filter fabric shall be prepared to a smooth condition free from obstructions, depressions and debris. The filter fabric shall be installed with the long dimension running up the slope and shall be placed to provide a minimum number of overlaps. The fabric shall be placed to provide a minimum width of one foot of overlap at each joint. The fabric shall be anchored in place with securing pins of the type recommended by the fabric manufacturer. Pins shall be placed on or within 3-inches of the centerline of the overlap. The fabric shall be placed loosely to avoid stretching and tearing during the placement of the stone. The fabric shall be protected at all times during construction from clogging due to clay, silts, chemicals or other contaminants. Contaminated fabric or fabric damaged during installation or during placement of rip rap shall be removed and replaced with uncontaminated and undamaged fabric at no additional cost to the Owner.

3.03 INSTALLATION (VEGETATIVE MEASURES)

A. Mulching

Temporary mulching or grassing may be required by the Engineer where construction or conditions prohibit completion in a continuous manner and surface erosion is probable. See Detail sheet for additional information.

B. Grassing

1. Seed rate, fertilization and other requirements shall be provided as shown on the Drawings.
2. Temporary stabilization: Temporary stabilization shall be provided as shown on the Drawings and conforming to these specifications to control erosion on the site. Temporary stabilization shall be provided to any area which will not receive permanent stabilization within the next 14 calendar days. Partial payment requests may be withheld for those portions of the Project not complying with this requirement.
3. Permanent Stabilization

a. Permanent stabilization shall be provided as shown on the Drawings to control erosion on the site. Permanent stabilization shall be provided to all areas of land disturbance within seven calendar days of the completion of land disturbance for any area greater than 0.25 acre. Partial payment requests may be withheld for those portions of the Project not complying with requirement.
b. Where permanent stabilization cannot be immediately established because of an inappropriate season, the Contractor shall provide temporary stabilization. The Contractor shall return to the site at the appropriate season to provide permanent stabilization in areas that received only temporary stabilization.

C. Matting and Blankets

Matting and Blankets (Mb) shall be installed on all slopes four horizontal to one vertical and steeper. The Mb shall be installed immediately after slope is final graded and seeding is complete. The matting shall be secured with staples one per square yard.

3.04 FIELD QUALITY CONTROL

All erosion and sedimentation control devices and structures shall be inspected by the Contractor at least once a week and immediately after each rainfall occurrence. Any device or structure fund to be damaged will be repaired or replaced by the end of the day. Sediment ponds shall be cleaned out prior to the silt reaching the height or elevation shown on the Drawings.

3.05 CLEAN-UP

A. Dispose of all excess erosion and sedimentation control materials in a manner satisfactory to the Engineer.

B. Final clean-up shall be performed in accordance with the requirements of these Specifications.

C. Dispose of excess earth and rock excavated materials at locations on site designated by the Engineer. Off-site disposal of all other material and unsuitable excavated material shall be in accordance with all requirements of federal, state, county, and municipal regulations. No debris of any kind shall be deposited in any stream or body of water, or on any street. No debris shall be deposited on any private property, except by written consent of the property owner. In no case shall any material be shoved onto abutting private properties, or be buried in embankments or trenches on the Project.

END OF SECTION

SECTION 02635
STORM DRAINAGE PIPING

PART 1 GENERAL

1.01 SCOPE

Furnish all labor, equipment, supplies, and materials and perform all operations in connection with construction of storm sewers as shown on the plans or specified. Construction shall be in accordance with the Georgia Department of Transportation Standard Specifications, Construction of Roads and Bridges, Latest Edition.

1.02 RELATED SECTIONS

A. Section 02317 – Trench Excavation, and Backfill.

B. Section 03400 - Precast Concrete Structures.

1.03 REFERENCES

A. AASHTO M 36/ASTM A 760 - Standard Specification for Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains; American Association of State Highway and Transportation Officials and Georgia Department of Transportation Standard Specifications, Section 844 latest Edition.

B. AASHTO M 170 - Standard Specification for Reinforced Concrete Pipe and Georgia Department of Transportation Standard Specifications, Section 843 latest Edition.

C. AASHTO M 190/ASTM A 849 - Standard Specification for Bituminous Coated Corrugated Steel Culvert Pipe and Georgia Department of Transportation Standard Specifications, Section 844 latest Edition.

D. AASHTO M 294 - Corrugated Polyethylene Pipe (12" through 48") and Georgia Department of Transportation Standard Specifications, Section 845 latest Edition.

E. ASTM C 14 - Standard Specification for Concrete Sewer, Storm Drain, and Culvert Pipe.

F. ASTM C 76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.

G. ASTM C 443 - Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gasket.

H. ASTM F405 – Standard Specification for Corrugated Polyethylene Pipe and Fittings.

I.ASTM F667 – Standard Specification for large diameter Corrugated Polyethylene Pipe and Fittings.

J. ASTM 949 – Standard Specification for Poly(Vinyl Chloride) (PVC) Corrugated Sewer Pipe With a Smooth Interior and Fittings.

K. ASTM F2435 – Standard Specification for Steel Reinforced Polyethylene (PE) Corrugated Pipe”

1.04 SUBMITTALS

Complete product data and engineering data, including shop drawings, shall be submitted to the Engineer should any products deviate from these specs or alternate products are proposed.

1.05 TRANSPORTATION AND HANDLING

A. Unloading: Furnish equipment and facilities for unloading, handling, distributing and storing pipe, fittings and accessories. Make equipment available at all times for use in unloading. Do not drop or dump materials. Any materials dropped or dumped will be subject to rejection without additional justification. Pipe handled on skids shall not be rolled or skidded against the pipe on the ground.

B. Handling: Handle pipe, fittings and accessories carefully to prevent shock or damage. Handle pipe by rolling on skids, forklift, or front end loader. Do not use material damaged in handling. Slings, hooks or pipe tongs shall be padded and used in such a manner as to prevent damage to the exterior coatings or internal lining of the pipe. Do not use chains in handling pipe, fittings and appurtenances.

1.06 STORAGE AND PROTECTION

A. Store all pipe which cannot be distributed along the route. Make arrangements for the use of suitable storage areas.

B. Stored materials shall be kept safe from damage.

C. Pipe shall not be stacked higher than the limits recommended by the manufacturer. The bottom tier shall be kept off the ground on timbers, rails or concrete. Pipe in tiers shall be alternated: bell, plain end; bell, plain end. At least two rows of timbers shall be placed between tiers and chocks, affixed to each other in order to prevent movement. The timbers shall be large enough to prevent contact between the pipe in adjacent tiers.

PART 2 PRODUCTS

2.01 PIPE MATERIALS

A. Reinforced Concrete Pipe (RCP): Shall conform to the requirements of AASHTO M 170, ASTM C 76, ASTM C 361; mesh reinforcement; bell and spigot end joints.

B. All storm drainage pipe shall meet or exceed the Georgia Department of Transportation Standard Specification, Section 550 unless otherwise noted on the plans or within this specification.

2.02 PIPE ACCESSORIES

A. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required.
All fittings shall conform to manufacturers specifications.

B. Filter Fabric: Non-biodegradable, woven.

2.03 CATCH BASIN

A. Construction shall be in accordance with the Georgia Department of Transportation Standard Specifications, Section 668 latest Edition.

B. Lids and Drain Covers: Shall be cast iron.

C. Catch Basin: as shown on drawings, per Georgia Department of Transportation Standards and Details.

D. Shaft Construction and Concentric Cone Top Section: Reinforced precast concrete pipe sections ASTM C478, lipped male/female dry joints, nominal diameter of 48 inches.

E. See Detail Sheet for more information.

2.04 HEADWALLS AND END SECTIONS

Construction shall be in accordance with the Georgia Department of Transportation Standards and Details.

2.05 BEDDING AND COVER MATERIALS

Bedding and Cover: As specified in Section 02317 - Trench Excavation and Backfill.

PART 3 EXECUTION

3.01 EXISTING UNDERGROUND UTILITIES AND OBSTRUCTIONS

A. The plans indicate utilities and obstructions that are known to exist according to the best information available to the Owner.

B. Existing Utility Location: The following steps shall be exercised to avoid interruption of existing utility service.

1. Expose the facility, for a distance of at least 100 feet in advance of pipeline construction, to verify its true location and grade. Repair, or have repaired, any damage to utilities resulting from locating or exposing their true location.
2. Avoid utility damage and interruption by protection with means or methods recommended by the utility owner.

C. Conflict with Existing Utilities

1. Horizontal Conflict: Horizontal conflict shall be defined as when the actual horizontal separation between a utility, main, or service and the proposed piping does not permit safe installation of the piping by the use of sheeting, shoring, tying back, supporting, or temporarily suspending service of the parallel or crossing facility. The Contractor may change the proposed alignment of the piping to avoid horizontal conflicts if the new alignment complies with regulatory agency requirements and after a written request to and subsequent approval by the Engineer. Where such relocation of the piping is denied by the Engineer, the Contractor shall arrange to have the utility, main, or service relocated.
2. Vertical Conflict: Vertical conflict shall be defined as when the actual vertical separation between a utility, main, or service and the proposed piping does not permit the crossing without immediate or potential future damage to the utility, main, service, or the piping. The Contractor may change the proposed grade of the piping to avoid vertical conflicts if the changed grade maintains adequate cover and complies with regulatory agencies requirements after written request to and subsequent approval by the Engineer.

D. Electronic Locator: Have available at all times an electronic pipe locator and a magnetic locator, in good working order, to aid in locating existing pipe lines or other obstructions.

E. Water and Storm Sewer Separation

1. Potable water mains should maintain a minimum 10 foot edge to edge separation from storm sewer lines.
2. Where storm sewers cross the water main, the pipe joint adjacent to the pipe crossing the water main shall be cut to provide maximum separation of the pipe joints from the storm sewer.
3. No water main shall pass through, or come in contact with, any part of a storm sewer manhole.

3.02 TRENCHING

See Section 02317 - Trench Excavation and Backfill for minimum requirements.

3.03 INSTALLATION - PIPE

A. Verify that trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on construction plans.

B. Install pipe, fittings, and accessories in accordance with manufacturer's instructions. Seal watertight.

C. Lay pipe to slope gradients noted on construction plans; with maximum variation from true slope of 1/8 inch in 10 feet.

D. Reinforced Concrete Pipe shall be installed in accordance with applicable provisions of the American Concrete Pipe Association (ACPA).

3.04 INSTALLATION - CATCH BASINS AND MANHOLES

A. Form bottom of excavation clean and smooth to correct elevation.

B. Form and place cast-in-place concrete base pad, with provision for storm sewer pipe end sections.

C. All structures shall be placed on an 8-inch subbase of No. 57 stone.

D. Level top surface of base pad; sleeve concrete shaft sections to receive storm sewer pipe sections.

E. Establish elevations and pipe inverts for inlets and outlets as indicated.

F. Mount lid and frame level in grout, secured to top cone section to elevation indicated.

3.05 FIELD QUALITY CONTROL

A. Perform field inspection and testing as directed by the engineer.

B. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to owner.

3.06 PROTECTION

Protect pipe and bedding cover from damage or displacement until backfilling operation is in progress.

END OF SECTION

SECTION 03200
CONCRETE REINFORCEMENT

1.01 SECTION INCLUDES

A. Reinforcing steel for cast-in-place concrete.

B. Supports and accessories for steel reinforcement.

1.02 RELATED SECTIONS

A. Section 03305 - Cast-In-Place Concrete.

1.03 REFERENCES

A. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International; 1996.

B. ACI 318 - Building Code Requirements For Reinforced Concrete and Commentary; American Concrete Institute International; 1999.

C. ACI 350R – Environmental Engineering Concrete Structures; American Concrete Institute International, 1989.

D. ACI SP-66 - ACI Detailing Manual; American Concrete Institute International; 1994.

E. ASTM A 82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement; 1997a.

F. ASTM A 184/A 184M - Standard Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement; 1996.

G. ASTM A 185 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement; 1997.

H. ASTM A 497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement; 1997.

I. ASTM A 615/A 615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement; 1996a.

J. ASTM A 641/A 641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 1998.

K. ASTM A 704/A 704M - Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement; 1996.

L. ASTM A 706/A 706M - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement; 1998.

M. ASTM A 767/A 767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement; 1997.

N. ASTM A 775/A 775M - Standard Specification for Epoxy-Coated Reinforcing Steel Bars; 1997.

O. ASTM A 884/A 884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Fabric for Reinforcement; 1996a.

P. ASTM A 996/A 996M - Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement; 2000.

Q. ASTM D 3963/D 3963M - Standard Specification for Fabrication and Job-Site Handling of Epoxy Coated Reinforcing Steel Bars; 1999.

R. AWS D1.4 - Structural Welding Code - Reinforcing Steel; American Welding Society; 1998.

S. CRSI (DA4) - Manual of Standard Practice; Concrete Reinforcing Steel Institute; 1997, 26th Edition.

T. CRSI (P1) - Placing Reinforcing Bars; Concrete Reinforcing Steel Institute; 1999.

1.04 SUBMITTALS

A. Shop Drawings: Comply with requirements of ACI SP-66. Include bar schedules, shapes of bent bars, spacing of bars, and location of splices.

1. Prepare shop drawings under seal of a Professional Structural Engineer experienced in design of work of this type and licensed in the State of Georgia.

B. Manufacturer's Certificate: Certify that reinforcing steel and accessories supplied for this project meet or exceed specified requirements.

C. Reports: Submit certified copies of mill test report of reinforcement materials analysis.

1.05 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301.
1. Maintain one copy of each document on project site.

B. Provide with access to fabrication plant to facilitate inspection of reinforcement. Provide notification of commencement and duration of shop fabrication in sufficient time to allow inspection.

C. Welders' Certificates: Submit certifications for welders employed on the project, verifying AWS qualification within the previous 12 months.

1.06 DELIVERY AND STORAGE

Reinforcement and accessories shall be stored off the ground on platforms, skids, or other supports.

PART 2 PRODUCTS

2.01 REINFORCEMENTS

A. Reinforcing Steel: ASTM A 615/A 615M Grade 60 (420).

1. Plain billet-steel bars.
2. Unfinished.
3. Shop fabricated and bent cold.

B. Reinforcing Steel Mat: ASTM A 704/A 704M, using ASTM A 615/A 615M Grade 40 (300) steel bars or rods, unfinished.

C. Stirrup Steel: ASTM A 82 steel wire, unfinished.

D. Welded Steel Wire Fabric: ASTM A 185.

1. Flat Sheets.
2. Mesh Size and Wire Gage: As indicated on drawings.
3. Minimum Lap shall be 8".

E. Synthetic Fiber Reinforcement

Synthetic fiber shall be polypropylene with a denier less than 100 and a nominal fiber length of 50 mm 2 inches.

F. Reinforcement Accessories:

1. Tie Wire: Annealed, minimum 16 gage (1.5 mm).
2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
3. Provide stainless steel components for placement within 1-1/2 inches (38 mm) of weathering surfaces.

2.02 DEVELOPMENT AND SPLICES

A. Conform to ACI 318, Chapter 12, and ACI 350R.

B. Development 38 bar diameters, minimum.

C. Class B splices 48 bar diameters, minimum.

D. Welded wire fabric lap 8 inches, minimum.

2.03 FABRICATION

A. Fabricate concrete reinforcing in accordance with CRSI (DA4) - Manual of Standard Practice.

B. Welding of reinforcement is not permitted.

C. Welding of reinforcement is permitted only with the specific approval of the Engineer. Perform welding in accordance with AWS D1.4.

1. Galvanized Reinforcement: Clean surfaces, weld and re-protect welded joint in accordance with CRSI (DA4).

D. Fabricate and handle epoxy-coated reinforcing in accordance with ASTM D 3963/D 3963M.

E. Locate reinforcing splices not indicated on drawings at point of minimum stress, if feasible.

1. Review locations of splices with the Structural Engineer.

PART 3 EXECUTION

3.01 INSTALLATION

A. Placing

1. General: Reinforcing steel shall be placed in accordance with the drawings and reviewed shop drawings and the applicable requirements of the "Codes and Standards" hereinbefore specified. Install reinforcement accurately and secure against movement, particularly under the weight of workmen and the placement of concrete.
2. Reinforcing Supports: Bars shall be supported on metal chairs or spacers on metal hangers, accurately placed and securely fastened to hold reinforcement in place. Additional bars shall be supplied whether specifically indi¬cated on the drawings or not where necessary to securely fasten reinforcement in place. Support legs of accessories in forms without embedding in form surface. Spacing of chairs and accessories shall conform with CRSI'S "Manual of Standard Practice." Hooping and stirrups shall be accurately spaced and wired to the reinforcing. No wood will be permitted inside forms. Where the concrete surface will be exposed to the weather in the finished structure, the portions of all accessories within 1/2 inch of the concrete surface shall be noncorrosive or protected against corrosion.

B. Slab reinforcing supports: All slab reinforcement shall be supported on approved continuous slab bolsters. To prevent feet penetration into subgrade or formwork, slab bolsters shall have a continuous base. For slabs over insulation, slab bolsters shall have a continuous plate base. Spacing of bolsters shall not exceed 4□-0" on center.

C. Placing and Tying: All reinforcing shall be set in place, spaced, and rigidly and securely tied or wired with 16 gauge steel tie wire at all splices and at sufficient points to hold the reinforcing in its proper position. Rebending of bars on the job to fit existing conditions will not be permitted without the written approval of the Engineer. Point ends of wire ties away from forms.

D. Spacing: Minimum center to center distance between parallel bars shall be in accordance with the details on the drawings or, where not indicated, the clear spacing shall be 2 times the bar diameter but in no case less than 1 1/2 inches nor less than 1-1/3 times the maximum size aggregate.

E. Splices:

1. Laps of splices, where indicated on the drawings, shall be adequate to transfer stress by bond.
2. Unless indicated otherwise on the drawings, lap bars according to ACI 318, Class B. Lap bars in masonry in accord with ACI 530, with a minimum of 48 diameters.
3. Wherever possible, splices of adjacent bars shall be staggered.
4. All splices not indicated shall be subject to acceptance by the Engineer.
5. Mechanical connections for reinforcing bars may be used subject to acceptance by the Engineer.
6. Welded wire fabric shall be overlapped wherever successive mats are continuous in such a way that the overlap measured between outermost cross wires of each fabric sheet is not less than the spacing of the cross wires plus 2 inches.

F. Welded Wire Fabric: Wire fabric shall be in as long lengths as practicable and shall be wired at all laps and splices. End laps shall be off-set in adjacent widths. Welded wire fabric shall be supported with approved slab bolsters and as required for slab reinforcing supports.

G. Dowel aligners: Dowel aligner shall be installed in accordance with manufacturer's recommendations.

H. Dowels: Dowels shall be tied securely in place before concrete is deposited. In the event there are no bars in position to which dowels may be tied, a #3 bar minimum shall be added to provide proper support and anchorage. Bending of dowels after placement of concrete will not be permitted. Templates shall be furnished for all column and pier dowels.

I. Protective Concrete Covering: Except where indicated otherwise on drawings, the minimum concrete coverage for steel reinforcement shall be as follows:

1. Concrete cast against and permanently exposed to earth: 3 inches.
2. Formed concrete exposed to weather or earth: 1-1/2 inches for bars No. 5 and smaller, and 2 inches for bars over No. 5 in size.

3. Concrete not exposed to weather or in contact with ground:
a. Slabs, walls, joists: 3/4 inches for bars No. 11 and smaller and 1-1/2 inches for bars over No. 11 in size.
b. Beams, columns: Primary reinforcement, ties, stirrups, spiral : 1-1/2 inches.

J. Placing Tolerances: Bars shall be placed to the following tolerances:

1. Clear distance to formed surfaces: + 1/4 inches.
2. Minimum spacing between bars: + 1/4 inch.
3. Top bars in slabs and beams:
a. Members 8 inches deep or less: + 1/4 inch.
b. Members more than 8 inches but not over 2 feet deep: + 1/2 inches.
c. Members more than 2 feet deep: + 1 inch.
4. Crosswise of members: Spaced evenly within 2 inches.
5. Lengthwide of members. + 2 inches.

K. Bars may be moved as necessary to avoid interference with other reinforcing steel, conduits or embedded items. If bars are moved more than one bar diameter, or enough to exceed the above tolerances, the resulting arrangement of bars shall be subject to acceptance by the Engineer.

L. Cleaning: Reinforcement, at time concrete is placed, shall be free of all coatings that would impair bond to concrete.

3.02 FIELD QUALITY CONTROL

A. Notification

1. Subcontractor shall notify the Engineer, Building Department and Testing Laboratory at least 48 hours ahead of each concrete pour, and no concrete shall be placed until all reinforcing steel has been installed by the Subcontractor and approved by the Engineer or Testing Laboratory.

B. Correction During Concreting
1. Capable steel workmen shall be kept on the work at all times during the placing of concrete and shall properly reset any reinforcement displaced by runways, workmen, or other causes.

C. Defective Work

1. The following reinforcing steel work will be considered defective and may be ordered by the Engineer to be removed and replaced by the Subcontractor at no additional cost to the Builder or Owner.
a. Bars with kinks or bends not shown on Drawings.
b. Bars injured due to bending or straightening.
c. Bars heated for bending.
d. Reinforcement not placed in accordance with the Drawings and/or Specifications.

END OF SECTION

SECTION 03305
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete formwork.

B. Concrete building frame members.

C. Concrete for composite floor construction.

D. Elevated concrete slabs.

E. Floors and slabs on grade.

F. Concrete shear walls, elevator shaft walls, and foundation walls.

G. Concrete foundations and anchor bolts for pre-engineered building.

H. Concrete foundations for water storage tank(s).

I. Concrete reinforcement.

J. Joint devices associated with concrete work.

K. Miscellaneous concrete elements, including equipment pads, light pole bases, flagpole bases, thrust blocks, and manholes.

L. Concrete curing.

1.02 REFERENCES

A. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; American Concrete Institute International; 1991 (Reapproved 1997).

B. ACI 211.2 - Standard Practice for Selecting Proportions for Structural Lightweight Concrete; American Concrete Institute International; 1998.

C. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International; 1996.

D. ACI 302.1R - Guide for Concrete Floor and Slab Construction; American Concrete Institute International; 1996.

E. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute International; 1989 (Reapproved 1997).

F. ACI 305R - Hot Weather Concreting; American Concrete Institute International; 1991.

G. ACI 306R - Cold Weather Concreting; American Concrete Institute International; 1988.

H. ACI 308 - Standard Practice for Curing Concrete; American Concrete Institute International; 1992 (Reapproved 1997).

I. ACI 318 - Building Code Requirements for Reinforced Concrete and Commentary; American Concrete Institute International; 1999.

J. AC1350R – Environmental Engineering Concrete Structures; American Concrete Institute International; 1989.

K. ASTM A 185 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement; 1997.

L. ASTM A 497 - Standard Specification for Steel Welded Wire fabric, Deformed, for Concrete Reinforcement; 1997.

M. ASTM A 615/A 615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement; 1996a.

N. ASTM A 767/A 767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement; 1997.

O. ASTM A 775/A 775M - Standard Specification for Epoxy-Coated Reinforcing Steel Bars; 1997.

P. ASTM A 884/A 884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Fabric for Reinforcement; 1996a.

Q. ASTM C 33 - Standard Specification for Concrete Aggregates; 1999a.

R. ASTM C 39/C 39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 1999.

S. ASTM C 94/C 94M - Standard Specification for Ready-Mixed Concrete; 2000.

T. ASTM C 150 - Standard Specification for Portland Cement; 1999a.

U. ASTM C 171 - Standard Specification for Sheet Materials for Curing Concrete; 1997a.

V. ASTM C 173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 1994a.

W. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete; 1998.

X. ASTM C 309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 1998a.

Y. ASTM C 330 - Standard Specification for Lightweight Aggregates for Structural Concrete; 1999.

Z. ASTM C 494/C 494M - Standard Specification for Chemical Admixtures for Concrete; 1999a.

AA. ASTM C 618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete; 1999.

AB. ASTM C 685 - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 1998a.

AC. ASTM C 881 - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 1999.

AD. ASTM C 1059 - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 1999.

AE. ASTM C 1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 1999.

AF. ASTM D 994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type); 1998.

AG. ASTM D 1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types); 1999.

AH. ASTM D 3963/D 3963M - Standard Specification for Fabrication and Job-Site Handling of Epoxy Coated Reinforcing Steel Bars; 1999.

AI. ASTM E 1155 - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers; 1996.

1.03 SUBMITTALS

A. Product Data: Submit manufacturers' data on manufactured products.

B. Samples: Submit two, 12 inch long samples of waterstops and construction joint devices.

C. Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent construction for concrete accessories.

D. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

1.04 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.

1. Maintain one copy of each document on site.

B. Acquire cement from same source and aggregate from same source for entire project.

C. Follow recommendations of ACI 305R when concreting during hot weather.

D. Follow recommendations of ACI 306R when concreting during cold weather.

PART 2 PRODUCTS

2.01 FORMWORK

A. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.

1. Form Facing for Exposed Finish Concrete: Contractors choice of materials that will provide smooth, stain-free final appearance.
2. Form Facing for Exposed Finish Concrete: Steel.
3. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
4. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface. Form ties shall contain a water stop washer.

2.02 REINFORCEMENT

A. Reinforcing Steel: ASTM A 615/A 615M Grade 60 (420).
1. Deformed billet-steel bars.
2. Unfinished.
3. Galvanized in accordance with ASTM A 767/A 767M, Class I.
4. Epoxy coated in accordance with ASTM A 775/A 775M.

B. Welded Steel Wire Fabric: ASTM A 185, plain type.
1. Coiled Rolls.
2. Mesh Size and Wire Gage: As indicated on drawings.

C. Reinforcement Accessories:
1. Tie Wire: Annealed, minimum 16 gage (1.5 mm).
2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
3. Provide stainless steel, galvanized, plastic, or plastic coated steel components for placement within 1-1/2 inches (38 mm) of weathering surfaces.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C 150, Type I, II or III - Normal Portland type.

B. Fine and Coarse Aggregates: ASTM C 33.

C. Lightweight Aggregate: ASTM C 330.

D. Fly Ash: ASTM C 618, Class C or F.

E. Calcined Pozzolan: ASTM C 618, Class N.

F. Silica Fume: ACI 211.1

G. Water: Clean and not detrimental to concrete.

H. Fiber Reinforcement: Synthetic fiber shown to have long-term resistance to deterioration when exposed to moisture and alkalis; 1/2 inch (12 mm) length.

2.04 ADMIXTURES

A. Air Entrainment Admixture: ASTM C 260

B. Chemical Admixtures: ASTM C 494/C 494M, Type A - Water Reducing, Type C - Accelerating, and Type G - Water Reducing, High Range and Retarding.

1. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

2.05 CONCRETE ACCESSORIES

A. Reglets: Formed steel sheet, galvanized, with temporary filler to prevent concrete intrusion during placement.

B. Bonding Agent: ASTM C 1059, Type II acrylic non-redispersable type.

C. Epoxy Bonding System: ASTM C 881, type as required by project conditions.

D. Vapor Barrier: 6 mil thick clear polyethylene film, type recommended for below grade application.

E. Chemical Hardener: Fluosilicate solution designed for densification of cured concrete slabs.

F. Non-Shrink Grout: ASTM C 1107; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.

1. Minimum Compressive Strength at 48 Hours: 2,400 psi (17 MPa).
2. Minimum Compressive Strength at 28 Days: 7,000 psi (48 MPa).

G. Curing Materials: Comply with requirements of AC1308.

H. Moisture-Retaining Cover: ASTM C 171; regular curing paper, white curing paper, clear polyethylene, white polyethylene, or white burlap-polyethylene sheet.

I. Liquid Curing Compound: ASTM C 309, Type 1, clear or translucent, non-staining.

2.06 JOINT DEVICES AND MATERIALS

A. Waterstops: PVC, bulb-type, 6 inches minimum width, 3/8" nominal thickness, continuous.

1. Lapped joints are not permitted.
2. Product: Greenstreak 705.
3. Alternative waterstop system: modified chloroprene rubber hydrophilic waterstop. Product greenstreak CJ-0725-3K.

B. Joint Filler: Nonextruding, resilient asphalt impregnated fiberboard or felt, complying with ASTM D 1751, 1/4 inch thick and 4 inches deep; tongue and groove profile.

C. Joint Filler: Compressible asphalt mastic with felt facers, complying with ASTM D 994, 1/4 inch thick and 4 inches deep.

D. Construction Joint Devices: Integral galvanized steel, formed to tongue and groove profile, with removable top strip exposing sealant trough, knockout holes spaced at 6 inches, ribbed steel spikes with tongue to fit top screed edge.

2.07 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.

B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.

1. For trial mixtures method, employ independent testing agency acceptable to for preparing and reporting proposed mix designs.

C. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended by manufacturer.

D. Fiber Reinforcement: Add to mix at rate of 1.5 pounds per cubic yard (0.89 kg per cubic meter), or as recommended by manufacturer for specific project conditions.

E. Normal Weight Concrete:

1. Compressive Strength, when tested in accordance with ASTM C 39/C 39M at 28 days: 4000 psi.
2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
3. Calcined Pozzolan Content: Maximum 10 percent of cementitious materials by weight.
4. Silica Fume Content: Maximum 5 percent of cementitious materials by weight.
5. Cement Content: Minimum 517 lb per cubic yard.
6. Water-Cement Ratio: Maximum 40 percent by weight.
7. Total Air Content: 4 percent, per ASTM C 173.
8. Maximum Slump: 4 inches.
9. Maximum Aggregate Size: 1 1/2 inch.

2.08 MIXING

A. On Project Site: Mix in drum type batch mixer, complying with ASTM C 685. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.

B. Transit Mixers: Comply with ASTM C 94/C 94M.

2.09 CONCRETE PROPERTIES FOR APPLICABLE COMPRESSIVE STRENGTHS

28 Day Compressive Strength (fc, psi)	Maximum Water-Cement Ratio By Weight (lb/lb)	Minimum Cement Content (lbs/cubic yard)	**LOCATION**
5000	0.40*	611	Prestressed Members
4000	0.45	564	Structural Items
3000	0.50	470	Sidewalks, Concrete Fill

*The optimum water-cement ratio for mix designs in excess of 4000 psi 28 day compressive strength shall be determined by various mix designs but not to exceed 0.40.

2.10 SLUMP LIMITS

A. Concrete, when placed, shall have a slump within the following limits as measured in accordance with ASTM C143:

1. Walls, beams, columns	1"-3"
2. Footings, caissons	2"-4"
3. Pavement, slabs, sidewalks	2"-4"

PART 3 EXECUTION

3.01 EXAMINATION

Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.

B. Verify that forms are clean and free of rust before applying release agent.

C. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.

D. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.

E. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

F. Install vapor barrier under interior slabs on grade. Lap joints minimum 6 inches (150 mm) and seal watertight by taping edges and ends. Cover with sand to depth shown on drawings.

3.03 INSTALLATION (OF REINFORCEMENTS)

A. Fabricate and handle epoxy-coated reinforcing in accordance with ASTM D 3963/D 3963M.

B. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

C. Install wire fabric in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.

D. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

3.04 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as required.

B. Provide free access to concrete operations at project site and cooperate with appointed firm.

C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.

D. Tests of concrete and concrete materials may be performed at any time to ensure conformance with specified requirements.

E. Compressive Strength Tests: ASTM C 39/C 39M. For each test, mold and cure two concrete test cylinders. Obtain test samples for every 100 cu yd (76 cu m) or less of each class of concrete placed.

F. Take one additional set of test cylinders during cold weather concreting, cured on job site under same conditions as concrete it represents.

G. Perform one slump test for each set of test cylinders taken.

3.05 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.

B. Place concrete for floor slabs in accordance with ACI 302.1R.

C. Notify not less than 24 hours prior to commencement of placement operations.

D. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.

E. Repair vapor barrier damaged during placement of concrete reinforcing. Repair with vapor barrier material; lap over damaged areas minimum 6 inches and seal watertight.

F. Separate slabs on grade from vertical surfaces with joint filler.

G. Place joint filler in floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.

H. Extend joint filler from bottom of slab to within 1/2 inch (13 mm) of finished slab surface.

I. Install joint devices in accordance with manufacturer's instructions.

J. Install construction joint devices in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.

K. Install joint device anchors for expansion joint assemblies as specified. Maintain correct position to allow joint cover to be flush with floor and wall finish.

L. Apply sealants in joint devices in accordance with Manufacturer.

M. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

N. Place concrete continuously between predetermined expansion, control, and construction joints.

O. Do not interrupt successive placement; do not permit cold joints to occur.

P. Place floor slabs in checkerboard or saw cut pattern indicated.

Q. Saw cut joints within 24 hours after placing. Use 3/16 inch thick blade, cut into 1/4 depth of slab thickness.

R. Screed floors level, maintaining surface flatness of maximum 1/4 inch in 10 ft.

3.06 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.

B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.

C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:

1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.
2. Grout Cleaned Finish: Wet areas to be cleaned and apply grout mixture by brush or spray; scrub immediately to remove excess grout. After drying, rub vigorously with clean burlap, and keep moist for 36 hours.
3. Cork Floated Finish: Immediately after form removal, apply grout with trowel or firm rubber float; compress grout with low-speed grinder, and apply final texture with cork float.

D. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:

1. Wood float surfaces that will receive quarry tile, ceramic tile, and terrazzo with full bed setting system.
2. Steel trowel surfaces that will receive carpeting, resilient flooring, seamless flooring, thin set quarry tile, and thin set ceramic tile.
3. Steel trowel surfaces that will be left exposed.
a. Chemical Hardener: After slab has cured, apply water-diluted hardener in three coats per manufacturer's instructions, allowing 24 hours between coats.

E. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:100 nominal.

3.07 CURING AND PROTECTION

A. Comply with requirements of ACI 308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, rain and flowing water, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

1. Normal concrete: Not less than 7 days.
2. High early strength concrete: Not less than 4 days.

C. Formed Surfaces: Cure by moist curing with forms in place for full curing period.

D. After forms are removed, an approved membrane forming curing compound, to seal water in the concrete, shall be applied to all concrete except surfaces which are to receive future concrete or mortar necessary for hydration of cement and hardening of concrete.

1. Normal concrete: Not less than 7 days.
2. High early strength concrete: Not less than 4 days.

E. Surfaces Not in Contact with Forms:

1. Start initial curing as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
2. Begin final curing after initial curing but before surface is dry.
a. Moisture-retaining cover: Seal in place with waterproof tape or adhesive.
b. Curing compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

3.08 WATER TIGHTNESS

A. All concrete structures for holding and transporting water and wastewater, and pits below ground level, shall be watertight; a drop in the water level of more than ¼ inch within 24 hours will not be permitted when waterholding and transporting structures, and pits below ground level, are filled.

B. All exposed surfaces of water holding and transporting structures, and interiors of pits below ground water level, shall be free from visible damp spots and seepages before acceptance.

C. The Contractor shall fill and test structures prior to backfilling, as directed by the Engineer.

3.09 CONTROL JOINTS

A. Construction Joints: Shall be formed using galvanized metal keyway or job-built wood forms with keyway.

B. Sawed Joints: Shall be sawed within 24-hours of placing the concrete.

C. Expansion Joints: Shall be located where new concrete is to be placed up to existing concrete and as shown on the drawings or as directed by the Engineer.

D. General: Joints shall be located so that the maximum area between shall not exceed 600 square feet. Length to width ratios shall not exceed 2 to 1. Refer to the drawings for a specific joint pattern.

3.10 DEFECTIVE WORK

Concrete not conforming with the plans and specifications, not formed as shown on the plans, has a defective surface, or lacks the required strength shall be removed from the job site at the contractor's expense or repaired as directed by the Engineer.

END OF SECTION

SECTION 03400
PRECAST CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Columns and bearing saddles.

B. Beams, spandrels, girders, purlins.

C. Floor double tees and channel slabs.

D. Grout packing.

E. Connection and supporting devices.

F. Lintels and bond beams.

G. Wetwells

H. Utility Vaults

I. Headwalls

1.03 REFERENCES

A. ACI 318 - Building Code Requirements for Reinforced Concrete and Commentary; American Concrete Institute International; 1999.

B. ASTM A 36/A 36M - Standard Specification for Carbon Structural Steel; 1997a.

C. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 1998.

D. ASTM A 185 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement; 1997.

E. ASTM A 416/A 416M - Standard Specification for Steel Strand, Uncoated Seven-Wire for Prestressed Concrete; 1998.

F. ASTM A 497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement; 1997.

G. ASTM A 615/A 615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement; 1996a.

H. ASTM A 666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 1999.

I. ASTM A 767/A 767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement; 1997.

J. ASTM A 775/A 775M - Standard Specification for Epoxy-Coated Reinforcing Steel Bars; 1997.

K. ASTM C 150 - Standard Specification for Portland Cement; 1999a.

L. ASTM D 3963/D 3963M - Standard Specification for Fabrication and Job-Site Handling of Epoxy Coated Reinforcing Steel Bars; 1999.

M. AWS D1.1 - Structural Welding Code - Steel; American Welding Society; 2000.

N. AWS D1.4 - Structural Welding Code - Reinforcing Steel; American Welding Society; 1998.

O. PCI MNL-116S - Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products; Precast/Prestressed Concrete Institute; 1985, Third Edition.

P. PCI MNL-120 - PCI Design Handbook - Precast and Prestressed Concrete; Precast/Prestressed Concrete Institute; 1999.

Q. PCI MNL-123 - Design and Typical Details of Connections for Precast and Prestressed Concrete; Precast/Prestressed Concrete Institute; 1988, Second Edition.

R. PCI MNL-124 - Design for Fire Resistance of Precast Prestressed Concrete; Precast/Prestressed Concrete Institute; 1989, Second Edition.

S. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

1.04 DESIGN REQUIREMENTS

A. Size components to withstand design loads in a restrained condition as follows:

1. Horizontal Assembly: 150 psf live and dead loads.
2. Vertical Assembly: 20 psf wind load.
3. As shown on the drawings.

B. Maximum Allowable Deflection: 1/180 span.

C. Design members exposed to the weather to provide for movement of components without damage, failure of joint seals, undue stress on fasteners or other detrimental effects, when subject to seasonal or cyclic day/night temperature ranges.

D. Design system to accommodate construction tolerances, deflection of other building structural members and clearances of intended openings.

E. Calculate structural properties of framing members in accordance with ACI 318.

F. Shall be manufactured in accordance with Prestress Concrete Institute's Manual 116 Manual for quality control for plans and production of Precast, prestressed concrete products and GA D.O.T. Standard Specifications Construction of Roads and Bridges Section 866 where located in D.O.T. right-of-way.

1.05 SUBMITTALS

A. Product Data: Indicate standard component configurations, design loads, deflections, cambers, and bearing requirements.

B. Shop Drawings: Indicate layout, unit locations, fabrication details, unit identification marks, reinforcement, connection details, support items, dimensions, openings, and relationship to adjacent materials. Indicate design loads, deflections, cambers, bearing requirements, and special conditions.

C. Samples: Submit two panels, 24 x 24 inch (610 x 610 mm) in size, illustrating surface finish treatment.

D. Design Data: Submit design data reports indicating calculations for loadings and stresses of fabricated, designed framing.

1.06 QUALITY ASSURANCE

A. Perform work of this section in accordance with requirements of PCI MNL-116S, PCI MNL-120, and PCI MNL-123.

B. Fabricator Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

C. Erector Qualifications: Company specializing in erecting products of this section with minimum five (5) years of documented experience.

D. Design precast concrete members under direct supervision of a Professional Structural Engineer experienced in design of precast concrete and licensed in the State of Georgia.

E. Welder: Qualified within previous 12 months in accordance with AWS D1.1 and AWS D1.4.

1.07 REGULATORY REQUIREMENTS

Conform to ACI 318 for design load and construction requirements applicable to work of this section.

1.08 PRE-INSTALLATION MEETING

A. Convene a pre-installation conference one week prior to commencing work of this section.

B. Instruct others when field cutting of required openings are 10 inches (254 mm) and smaller.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Handle precast members in position consistent with their shape and design. Lift and support only from support points.

B. Lifting or Handling Devices: Capable of supporting member in positions anticipated during manufacture, storage, transportation, and erection.

C. Protect members to prevent staining, chipping, or spalling of concrete.

D. Mark each member with date of production and final position in structure.

1.10 PROJECT/SITE CONDITIONS

Coordinate the work of framing components not pre-tensioned but associated with the work of this section.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Precast Concrete:

1. Foley Products.
2. Tindall Concrete Products.
3. Oldcastle.

2.02 MATERIALS

A. Cement: White Portland, conforming to ASTM C 150, Type I.

B. Aggregate, Sand, Water, Admixtures: Determined by precast fabricator as appropriate to design requirements and PCI MNL-116S.

2.03 REINFORCEMENT

A. Tensioning Steel Tendons: ASTM A 416/A 416M, Grade 250 (1725); seven-wire stranded steel cable; low-relaxation type; full length without splices; uncoated.

B. Reinforcing Steel: ASTM A 615/A 615M Grade 60 (420).

1. Plain billet-steel bars.
2. Unfinished.
3. Shop fabricated and bent cold.

C. Welded Steel Wire Fabric: ASTM A 185 plain type; in flat sheets; unfinished.

2.04 ACCESSORIES

A. Connecting and Supporting Devices: Plates, angles, items cast into concrete, and inserts conforming to PCI MNL-123, and as follows:

1. Material: Carbon steel conforming to ASTM A 36/A 36M.
2. Finish: Prime painted, except where device surfaces will be in contact with concrete or will require field welding.

B. Grout:

1. Non-shrink, non-metallic, minimum yield strength of 10,000 psi (69 MPa) at 28 days.
2. Epoxy.

C. Bearing Pads: High density plastic, Vulcanized elastomeric compound molded to size, Neoprene (Chloroprene), or Tetrafluoroethylene(TFE); Shore A Durometer; 1/8 inch (3 mm) thick, smooth both sides.

D. Bolts, Nuts and Washers: High strength steel type recommended for structural steel joints.

E. Prime Paint: Zinc rich alkyd type.

2.05 FABRICATION

A. Fabrication procedure to conform to PCI MNL-116S.

B. Fabricate and handle epoxy-coated reinforcing bars in accordance with ASTM D 3963/D 3963M.

C. Maintain plant records and quality control program during production of precast members. Make records available upon request.

D. Ensure reinforcing steel, anchors, inserts, plates, angles, and other cast-in items are embedded and located as indicated on shop drawings.

E. Tension reinforcement tendons as required to achieve design load criteria.

F. Provide required openings with a dimension larger than 10 inches (250 mm) and embed accessories provided under other sections of the specifications, at indicated locations.

G. Exposed Ends at Stressing Tendons: Fill recess with non-shrink grout, trowel flush.

2.06 FINISHES

A. Ensure exposed-to-view finish surfaces of precast concrete members are uniform in color and appearance.

B. Cure members under identical conditions to develop required concrete quality, and minimize appearance blemishes such as non-uniformity, staining, or surface cracking.

C. Architectural Finish: Surface holes or bubbles over 1/4 inch (6 mm) filled with matching cementitious paste, fins or protrusions removed and surface ground smooth.

D. Precast manufacturer shall coat inside of all wet well structures and receiving manholes (manhole force main discharges into) with two-component, self priming, chemically cured, coal tar epoxy protective coating. Koppers Bitumastic No. 300-m or approved equal.

2.07 FABRICATION TOLERANCES

A. Conform to PCI MNL-116S.

B. Maximum Variation From Nominal Dimension: 1 inch (25 mm).

C. Maximum Variation From Intended Camber: 5/8 inch (15 mm).

D. Maximum Out of Square: 1/8 inch/10 feet (3 mm/3 m), non-cumulative.

E. Maximum Misalignment of Anchors, Inserts, Openings: 1/8 inch (3 mm).

F. Maximum Bowing of Members: Length of Bow/ 360.

2.08 SOURCE QUALITY CONTROL AND TESTS

A. Provide mix design for concrete.

B. Test samples in accordance with applicable ASTM standard.

PART 3 EXECUTION

3.01 EXAMINATION

Verify that site conditions are ready to receive work and field measurements are as shown on shop drawings.

3.02 PREPARATION

Prepare support equipment for the erection procedure, temporary bracing, and induced loads during erection.

3.03 ERECTION

A. Erect members without damage to structural capacity, shape, or finish. Replace or repair damaged members.

B. Align and maintain uniform horizontal and vertical joints, as erection progresses.

C. Maintain temporary bracing in place until final support is provided. Protect members from staining.

D. Provide temporary lateral support to prevent bowing, twisting, or warping of members.

E. Adjust differential camber between precast members to tolerance before final attachment.

F. Install bearing pads.

G. Level differential elevation of adjoining horizontal members with grout to maximum slope of 1:12.

H. Set vertical units dry, without grout, attaining joint dimension with lead or plastic spacers.

I. Grout underside of column bearing plates.

J. Secure units in place. Perform welding in accordance with AWS D1.1.

3.04 ERECTION TOLERANCES

A. Erect members level and plumb within allowable tolerances.

B. Conform to PCI MNL-116S.

C. Design and erect to the following tolerances:

1. Maximum Variation from Plane or Location Indicated on Drawings: 1/4 inch/10 feet and 3/8 inch in 100 feet (6 mm/3 m and 9 mm in 30 mm), non-cumulative.
2. Maximum Offset from True Alignment Between Members: 1/4 inch (6 mm).
3. Maximum Variation From Dimensions Indicated on Reviewed Shop Drawings: Plus or minus 1/8 inch (3 mm).

D. Exposed Joint Dimension: 3/8 inch (9 mm) plus or minus 1/4 inch (6 mm).

E. When members cannot be adjusted to conform to design or tolerance criteria, cease work and advise. Execute modifications as directed.

3.05 PROTECTION

A. Protect members from damage caused by field welding or erection operations.

B. Provide non-combustible shields during welding operations.

3.06 CLEANING

Clean weld marks, dirt, or blemishes from surface of exposed members.

END OF SECTION

APPENDIX III
CONTRACT TIME

8.07 DETERMINATION OF CONTRACT TIME

After the contract has been signed by all parties, Contract Time becomes the specified period of time agreed upon by the Contractor, the Surety and the Owner, during which all items and quantities of work set forth in the proposal and included in the original contract will be completed.

A. Available Day Contracts
An available day is defined as any calendar day exclusive of Saturdays, Sundays, and Legal Holidays on which the Engineer determines that the Contractor is not prevented from accomplishing at least five hours of productive work on the controlling item or items of work which would normally be in progress at that time by causes beyond his control, and not due to his fault or negligence including but not restricted to unsuitable weather and its aftermath, suspension order of the Engineer, acts of God, acts of public enemy, fire, flood, epidemic, quarantine, strikes or freight embargo.

The Engineer will furnish the Contractor a written weekly statement showing the number of available days charged during the preceding week, and the number of days remaining for completion of the Contract. The Contractor will be allowed one week in which to file a written protest setting forth in what respect said weekly statement is incorrect, otherwise the statement shall be deemed to have been accepted by the Contractor as correct.

B. Calendar Day Contracts
When the contract time is on a calendar day basis it shall consist of the number of calendar days stated in the contract counting from the effective date of the Engineer's order to commence work, calendar days elapsing between the effective dates of any orders of the Engineer to suspend work and to resume work for reasons determined by the Engineer not to be the fault of the Contractor, shall be excluded.

C. Calendar Date Contracts
When the contract completion time is a fixed calendar date, it shall be the date on which all work on the project shall be completed.

Extension of Contract Time

If satisfactory fulfillment of the Contract requires performance of work in greater quantities than those set forth in the Proposal, the Contract Time allowed for performance shall be extended on a basis commensurate with the amount and difficulty of the added work as determined by the Engineer, whose decision shall be final and conclusive.

D. If the normal progress of the work is delayed for reasons beyond his control, the Contractor shall within fifteen (15) days after the start of such a delay file a written request to the Engineer for an extension of time setting forth therein and the reasons for the delay which he believes will justify the granting of this request. The Contractor's pleas that insufficient time was specified is not a valid reason for extension of time. If the Engineer finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, he may extend the time for completion in such amount as the conditions justify.

Any authorized extension of the Contract Time will be in full force and effect the same as though it were the original Contract Time.

E. Suspension of Time Charges
If the Engineer suspends the work by reason of failure of the Contractor to carry out written orders given, or to comply with any provision of the contract, time charges will continue through the period of such suspension.

If the contractor is declared in default, time charges will continue.
Except on Calendar Date Contracts, time charges will not be against the Contract when the only remaining controlling items of work are shut down by the Engineer because of Seasonal limitations.

F. When Time Charges Cease
Time charges will cease when all work on contract items has been completed to the satisfaction of the Engineer. The only exception to this requirement is that a satisfactory stand of grass will not be required when time charges are stopped, provided all filling of washes and repairs to grassing areas have been accomplished. Maintenance of grassed areas in order to produce a satisfactory stand of grass after time charges have stopped will be performed without penalty provided this work is diligently prosecuted. If maintenance is inadequate, the Engineer may resume time charges ten days after written notification to the Contractor and will continue time charges until the unsatisfactory conditions are corrected.

8.08 FAILURE OR DELAY IN COMPLETING WORK ON TIME

Time is an essential element of the contract, and any delay in the prosecution of the work may inconvenience the public, obstruct traffic or interfere with business. In addition to the aforementioned inconveniences, any delay in completion of the work will always increase the cost of engineering. For this reason it is important that the work be pressed vigorously to completion. Should the Contractor, or, in case of default, the Surety fail to complete the work within the time stipulated in the contract or within such extra time that may be allowed, charges shall be billed to the contractor or assessed against any money due or that may become due the Contractor at a rate of Three Hundred dollars ($300) for each day that expires after the allowed contract time for the completion and readiness of final payment until the Work is complete and ready for payment.

A. Liquidated Damages
The amount of such charges is hereby agreed upon as fixed liquidated damages due the Owner after the expiration of the time for completion specified in the Contract. The Contractor and his Surety shall be liable for liquidated damages in excess of the amount due the Contractor on the final payment.

These fixed liquidated damages are not established as a penalty, but are calculated and agreed upon in advance by the Owner and the Contractor due to the uncertainty and impossibility of making a determination as to the actual and consequential damages which are incurred by the County and the general public as well as a result of the failure on the part of the Contractor to complete the work on time.

Liquidated damages shall start in accordance with the above schedule upon notification to the Contractor in writing that all apparent contract time has been consumed.

1. Deduction From Partial Payments
Liquidated damages, as they accrue, will be deducted form periodic partial payments, and such deduction shall be in addition to the retainage provided for in the Contract.

2. Deduction from Final Payment
The full amount of liquidated damages will be deducted from final payment to the Contractor and/or his Surety.

3. No Liquidated Damages Charged for Delay by the Department
In case of default of the contract and the subsequent completion of the work by the Owner hereinafter provided, the Contractor and his Surety shall be liable for the liquidated damages under the Contract, but no liquidated damages shall be chargeable for any delay in the final completion of the work by the Owner due to any unreasonable action, negligence, omission or delay of the Owner. In any suit for the collection of or involving the assessment of liquidated damages, the

reasonable-ness of the amount shall be presumed. The liquidated damages referred to herein are intended to be and are cumulative and shall be in addition to every other remedy now or hereafter enforceable at law, in equity, by statute, or under the Contract.

B. No Waiver of Owner's Rights
Permitting the Contractor to continue and finish the work or any part of it after the expiration of the time allowed for completion after any extension of time, shall not operate as a waiver of the rights of the Owner's under the Contract.

END OF SECTION

SPECIAL PROVISIONS

1. Contractors **shall** be Georgia Department of Transportation certified to work within State rights-of-ways. Proof of this certification will be required of the selected Contractor.

2. Standard Specifications. Construction shall conform to Georgia Department of Transportation Standard Specifications, latest edition and/or specifications included in the contract documents.

3. Traffic. The contractor shall maintain safe traffic conditions at all times. A minimum of 3-day notice shall be given to the Owner, in writing, prior to any full road closures.

4. All tie-ins to existing pavement shall be smooth and uniform.

5. It is the intent of this contract to provide for stormwater drainage improvements at five different locations throughout Dougherty County.

6. All bids must have an affidavit from the contractor and any subcontractors that it has registered with a federal work authorization program, for example E-Verify, operated by the U.S. Department of Homeland Security to verify immigration status of employees (O.C.G.A. § 13-10-91)."

7. Anywhere the word "Engineer" is used, this shall be construed to mean "Owner".

8. 24 HOUR CONTACT: Jeremy Brown (229) 430-6120 (Office) (229) 376-7607 (Cell) Chuck Mathis (229) 430-6120 (Office) (229) 317-5219 (Cell)

9. INSURANCE REQUIREMENTS

A. See other Specification Sections for coverage amounts and requirements.

B. The Contractor shall carry Workman's Compensation Insurance for all employees engaged in the work, and shall require all Sub-Contractors to do so.

C. The Contractor shall be solely responsible for all liabilities, suits, actions, and claims of every character whatsoever incurred or brought for or on account of any injuries, damages, or loss incurred, received, or sustained or claimed to have been incurred, received or sustained by any person or persons or to any property, real or personal, whether on or adjacent to the job site or not, arising out of or in any way connected with the matters and things set forth in these specifications, or other of the contract documents, whether due to the negligence of the Contractor, Dougherty County, or otherwise, and the Contractor covenants and agrees to indemnify and save harmless the Owner from all liabilities charges, expenses and costs on account of or by reason of any such injuries, damages, liabilities, claims, suits, or losses, however occurring, including any costs incurred in defending against the same. To further assure the performance of this covenant, the Contractor shall procure and constantly maintain in force at its expense, the liability insurance set forth in Section 1B - 16, "Requirement of Contract Surety."

10. Work and payment for items specifically not listed on the bid schedule will be considered incidental to the pay item in which the work is required to be performed. No additional, separate payment for these items will be made.

11. Quality control is the responsibility of the Contractor. Cost for testing shall be included in the line item for which the work is required.

12. Contractors are responsible for visiting the site and verifying quantities and site conditions. No change orders will be approved for quantities differing from the Bid Schedule amount, unless approved through a Change Order.

13. This is a **UNIT PRICE BID**. Each item on the bid schedule shall be bid on as a stoned-alone "project" capable of being completed on its own without any dependence from other bid items. At minimum, each item shall include all costs associated with completing each bid item task, and/or as listed in the Measurement & Payment section of these specifications. Unbalanced and/or front-loaded bids are subject to disqualification. The County reserves the right to alter the quantity of any line item or omit any line item from the contract.

END OF SECTION

GENERAL CONDITIONS

1F – 01 DEFINITION OF TERMS

Whenever in the specifications and contract the following terms, or pronouns in the place of them are used, the intent and meaning shall be interpreted as follows:

A. ABBREVIATIONS
The following organizations are referred to in this specification by abbreviations of their titles. Additional information noted but not detailed can be obtained from these organizations by writing to them at their respective addresses.

AGC - Associated General Contractors of America
1957 E. Street, N.E.
Washington, D.C. 20006

ASA - American Standards Association

ASTM - American Society for Testing and Materials
1916 Race Street
Philadelphia, PA 19103

AASHO - The American Association of State Highway Officials
917 National Press Building
Washington, D.C. 20004

AWWA - American Water Works Association
2 Park Avenue
New York, NY 10016

NSF - National Sanitation Testing Laboratory Foundation
Box 1468
Ann Arbor, Michigan

B. AWARD

The decision of the Owner to accept the proposal of the lowest responsible bidder for the work, subject to the execution and approval of a satisfactory contract therefore and bonds to secure the performance thereof, and to such other conditions as may be specified.

C. BASE COURSE

One or more layers of specified material of design thickness placed on a subgrade or a subbase to support a surface course.

D. BIDDER

Any individual, firm, partnership, or corporation submitting a proposal for the work contemplated, acting directly or through a duly authorized representative.

E. BORROW

Materials excavated from areas designated on the plans or by the Engineer as borrow pits. Borrow pits will always be located outside the right-of-way.

F. CONTRACT

The written agreement between the Contractor and the Owner covering the performance of the work and the furnishing of labor and materials for the construction of the work. The contract includes the notice to bidders, proposal, contract bond, specifications, plans, any and all supplemental agreements, and any and all special provisions.

G. CONTRACTORS

The bidder awarded the contract for the work.

H. CONTRACT SURETY

1. Performance

2. Labor and Material

I. CULVERT

A drainage structure extending across, beneath, along or near a travel-way and having a tubular or box type cross-section.

J. ENGINEER

The County Engineer, or Consulting Engineer hired by the Owner acting through his authorized agents, who represents the Owner during the construction phase activities.

K. INSPECTOR

The authorized agent of the Owner assigned to make detailed inspection of any or all portions of the work or material therefore.

L. INSURANCE CERTIFICATE

Certificate indicating Contractor insurance coverage.

M. LABORATORY

An established testing laboratory approved by the Engineer.

N. NOTICE TO BIDDERS

The official notice, included in the proposal form, inviting bids for the proposed improvement, including a brief description of the work and the method of payment if other than in cash.

O. OWNER

Dougherty County, acting through its legally constituted officers or employees.

P. PLANS

All official drawings or reproductions of drawings pertaining to the work provided for in the contract.

Q. PROPOSAL

The written offer of the bidder to perform the proposed work.

R. PROPOSAL GUARANTY

The security designated in the proposal to be furnished by the bidder as a guaranty that said bidder will enter into a contract with the Owner for the acceptable performance of the work and will furnish the required contract surety, if the work is awarded to him.

S. RAILROAD

The railroad or railway company whose property is involved in the work.

T. RIGHT-OF-WAY

The areas existing or acquired by permanent easement for construction purposes; also, the areas acquired by temporary easement during the time the easement is in effect.

U. SANITARY SEWER

Any sewer including a combined relief sewer constructed or used for the purpose of carrying water borne waste to a treatment facility.

V. STORM SEWER

A sewer constructed or used for carrying storm water or sub-surface water to a natural storm water outlet.

W. SERVICE SEWER

Branch sanitary sewer constructed from the main sanitary sewer line to the point of actual use.

X. SPECIAL PROVISIONS

Special directions, provisions, requirements, and revisions of the specifications peculiar to the work under consideration which are not satisfactorily provided for otherwise in the specifications. The special provisions set forth the final contractual intent as to the matter involved. The special provisions included in the contract shall not operate to annul those portions of the specifications with which they are not in conflict.

1F - 04

2. SPECIFICATIONS

The body of directions, provisions, and requirements contained herein, or in any supplement to this document referred to in the special provisions, together with written agreements and all documents of any description made or to be made pertaining to the method of performing the work, the quantities, or the quality of materials to be furnished under the contract.

AA. SUBBASE

One or more layers of specified material used in a pavement system between subgrade and base course of pavement.

BB. SUBCONTRACTOR

The individual, firm, partnership, or corporation to whom the Contractor, with the written consent of the Engineer, sublets, assigns, or otherwise disposed of any part of the work covered by the contract.

CC. SUBGRADE

A general term applying to the material, or top surface thereof, immediately below pavement systems and shoulders, slope paving, approach slabs and other similar items.

DD. SUPPLEMENTAL AGREEMENT

The written agreement executed by the Contractor, with the assent of his surety, and by the Owner, covering modifications or alterations of the terms of the original contract.

EE. SURETY

The corporate body, individual or individuals, which engage to be responsible for the bidder's acts in the execution of the contract in the event of it being awarded to him; or, which are bound with and for the Contractor to insure his acceptable performance of the contract, his payment of all obligations pertaining to the work and his fulfillment of such other conditions as may be specified or otherwise required by law.

FF. THE WORK

The improvement advertised for bids, described in the proposal form, indicated on the plans, and covered in the specifications, special provisions, contract, authorized alterations, extensions and deductions and supplementary agreements or any part thereof, including labor, tools, equipment, and materials, necessary for the satisfactory completion of the improvements.

GG.TRAVELED WAY

The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

1F – 02 INTENT OF THE PLANS AND SPECIFICATIONS

The intent of the plans and specifications is to prescribe a complete outline of work, which the Contractor undertakes to do in full compliance with the contract. He shall furnish all required materials, equipment, tools, labor, and incidentals, unless

otherwise provided in the Contract and shall include the cost of these items in the unit prices bid for the several units of work.

1F – 03 SPECIAL WORK

Should any construction or requirements not covered by the specifications be anticipated on any proposed work, special provisions for the same will be prepared and included in the proposal form which special provisions shall be considered as a part of the specifications the same as though contained fully herein.

1F – 04 ALTERATIONS, CANCELLATIONS, EXTENSIONS AND DEDUCTIONS

A. The Owner reserves the right to alter the plans, extend or shorten the improvement, add such incidental work as may be necessary, and increase or decrease the quantities of work to be performed to accord with such changes, including the deduction or cancellation of any one or more of the unit price items. Such changes shall not be considered as a waiver of any conditions of the contract nor to invalidate any of the provisions thereof. A supplemental agreement between the Contractor and the Owner will be required when such changes involve a net increase or a net decrease in the amount of the contract of more than fifty (50%) percent of the original contract price.

B. Should such changes in the plans result in an increase or decrease in the quantities of the work to be performed, the Contractor shall accept payment as follows:

1. All such work as appears in the original contract as specified items accompanied by unit prices shall, except as provided under Paragraph (3) herein, be paid for at the contract unit prices. No allowance will be made for anticipated profits.

2. All such work as does not appear in the original contract as specific items accompanied by unit prices, shall be designated as extra work and paid for as specified in Section 1F - 55.

3. In case the total value of the work involved in the changes requires a supplementary agreement or the nature or scope of the work is such as to require working methods or equipment at variance with and more costly than those required for the original quantities as shown on the plans and stated in the proposal, the Contractor may ask for an adjustment in unit prices which may be an agreement between the Contractor and the Engineer, and with the approval of the Owner, but no adjustment of prices shall be approved by the Owner without conclusive evidence that such price or prices are fair and equitable to both parties concerned. If an adjusted price cannot be thus agreed upon, then such work may, by agreement between the Contractor and the Engineer, and with the approval of the Owner, be done as extra work on a force account basis as provided in Section 1F - 55.

C. All alterations, cancellations, extensions and deductions shall be authorized in writing by the Engineer before the work is started. Such authorization shall set forth the items of work involved and the method of payment for each item.

D. Claims for extra work which have not been authorized in writing by the Engineer may be rejected.

1F – 05 PERIODIC AND FINAL CLEANUP

A. From time to time or as may be ordered by the Engineer and immediately after completion of the work, the Contractor shall at his own expense clean up and remove all refuse and unused materials of any kind resulting from the work. Upon failure to do so within five (5) calendar days after written request by the Engineer, the work may be done by the Owner and the cost thereof be charged to the Contractor and be deducted from his final estimate. Upon completion of the work, the Contractor shall remove all his equipment and put the area of the work in a neat and clean condition and do all other cleaning required to complete the work in a workmanship manner, ready for use and satisfactory to the Engineer.

B. All clean up shall be performed as specified in the various sections of these specifications or in the special provisions.

1F – 06 PLANS AND WORKING DRAWING

A. Plans showing details of the construction contemplated will be furnished by the Owner. The Contractor shall submit to the Engineer for review such additional shop, working or layout drawings pertaining to the construction of the work, as may be required, and prior to the review of such plans or drawings, any work done or materials ordered shall be at the Contractor's risk.

B. When the contract includes work adjacent to a railroad and false work, cofferdams, or sheeting is required, the Contractor shall submit to the Engineer for his review and the railroad Engineer's approval, plans for the false work, cofferdams, or sheeting. The plans shall be submitted sufficiently in advance of the time the Contractor intends to start work to permit checking. No such work shall be started prior to receipt by the Contractor of approval of the plans for the false work, cofferdams or sheeting.

C. The cost of furnishing such drawings shall be incidental to the contract and no additional compensation will be allowed the Contractor for any delays resulting therefrom.

1F – 07 CONFORMITY WITH PLANS AND SPECIFICATIONS

A. It is the intent of the specifications that all work performed and all materials furnished shall be in conformity with the lines, grades, cross-sections, dimensions, and material requirements shown on the plans or indicated in the specifications.

B. In the event the Engineer finds the materials or the finished product in which the materials are used not within conformity with the plans and specifications, through no willful neglect, misconduct, or omission by the Contractor, but that reasonably acceptable work has been produced, he shall then make a determination if the work shall be accepted and remain in place. In this event, the Engineer will document the basis of acceptance and may provide for an appropriate adjustment in the contract price for such work or materials as he deems necessary to conform to his determination based on engineering judgment.

C. In the event the Engineer finds the materials or the finished product in which the materials are used or the work performed are not in conformity with the plans and specifications including tolerances and have resulted in an inferior or unsatisfactory product, the work or material shall be removed and replaced or otherwise corrected by and at the expense of the Contractor.

1F – 08 COORDINATION OF SPECIFICATIONS, PLANS, PROPOSAL, AND SPECIAL PROVISIONS

The specifications, the accompanying plans, the proposal, the special provisions, and all Supplementary documents are intended to describe a complete work and are essential parts of the contract. A requirement occurring in any of them is binding. In case of discrepancy, figured dimensions shall govern over scaled dimensions, plans shall govern over specifications, special provisions and plans, and quantities shown on the plans shall govern over those shown in the proposal. Neither the Owner nor the Contractor shall take advantage of any apparent error or omission in the plans or specifications, and the Engineer shall be permitted to make such corrections and interpretations as may be deemed necessary for the fulfillment of the intent of the plans and specifications.

1F – 09 COOPERATION BY CONTRACTOR

The Contractor will be furnished necessary copies of the plans, specifications, and special provisions and he shall have one copy of each available on the work at all times during its prosecution. He shall give the work his constant attention to facilitate the progress thereof, and shall cooperate with the Owner in every way possible. He shall have on the job site at all

times, a competent, English-speaking representative authorized to receive orders and act for him.

1F – 10 COOPERATION WITH UTILITIES

A. Water lines, gas lines, wire lines, service connections, water and gas meter boxes, water and gas valve boxes, light standards, cable ways, signals and other utility appurtenances which would permanently interfere with the proposed construction will be moved at no expense to the Contractor, except as otherwise provided for in the special provisions or as noted on the plans.

B. It is understood and agreed that the Contractor has considered in his bid all of the permanent and temporary utility appurtenances in their present positions and that no additional compensation will be allowed for any delays, inconveniences or damage sustained by him due to any interference from the said utility appurtenances or the operation of moving them either by the utilities company or by him; or on account of any special construction methods required in prosecuting his work due to the existence of said appurtenances except as provided under Section ___N/A_____.

1F - 11 COOPERATION BETWEEN CONTRACTORS

A. If separate contracts are let for work comprising an entire improvement, each contractor shall conduct his work so as not to interfere with or hinder the progress or completion of the work being performed by other contractors. In case of a dispute, the Engineer shall be the referee and his decision shall be final and binding to all.

B. Each Contractor involved shall assume all liability, financial or otherwise, in connection with his contract, and shall protect and save harmless the Owner and all agents of the Owner from any and all damages or claims that may arise because of inconvenience, delay or less experienced by him because of the presence and operations of the other contractors working within the limits of the same improvement. Each contractor shall assume all responsibility for his work not completed or accepted because of the presence and operations of the other contractors.

C. The Contractor shall as far as possible arrange his work, and place and dispose of the materials being used, so as not to interfere with the operations of the other contractors within the limits of the same improvement. He shall join his work with that of the others in an acceptable manner and shall perform it in proper sequence to that of others, all as directed by the Engineer.

1F – 12 CONSTRUCTION STAKES

Construction staking is the responsibility of the Contractor. Construction stakes will be set to mark the general location, alignment, elevation, and grade of the work. The Contractor shall exercise proper care in the preservation of stakes set for his use or the use of the Engineer. Stakes set by the Engineer, if any, which are disturbed or obliterated by the Contractor shall be reset by the Engineer for a unit price of ten ($10.00) dollars each.

1F – 13 AUTHORITY AND DUTIES OF INSPECTORS

Inspectors employed by the Owner or by the Engineer shall be authorized to inspect work and materials, and to perform such other duties as may be designated by the Engineer.

1F – 14 INSPECTION

A. All materials and each part of detail of the work shall be subject at all times to inspection by the Engineer or his authorized representatives and the Contractor will be held strictly to the true intent of the specifications in regard to quality of materials, workmanship, and diligent execution of the contract. Such inspection may include mill, plant, or shop inspection. The

Engineer or his representatives shall be allowed access to all parts of the work, and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

B. The Contractor shall, if the Engineer requests, remove or uncover such portions of the finished work as the Engineer may direct, before the final acceptance of the same. After the examination, the Contractor shall restore said portion of the work to the standard required by the specifications. If the work thus exposed or examined is unacceptable, the expense of uncovering or removing and the replacing of the same in accordance with the specifications.

C. When the Federal and/or State Government is to pay a portion of the cost of the work covered by the contract, the work shall be subject to the inspection of the representative of the Federal and/or State Government, but such inspection shall in no sense make the Federal and/or State Government a part of the contract.

1F – 15 REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK

A. Work done without lines and grades being given, or beyond the lines shown on the plans or as given, except as herein provided, or any extra work done without authority will be considered as unauthorized and at the expense of the Contractor, and will not be measured or paid for. Work so done may be ordered removed or replaced at the Contractor's expense.

B. All work which has been rejected or condemned shall be remedied or removed and replaced, in a manner approved by the Engineer, by the Contractor at his own expense. Upon failure on the part of the Contractor to comply promptly with any order of the Engineer made under the provisions of this article, the Engineer shall, after giving written notice to the Contractor have the authority to cause defective work to be remedied, or removed and replaced, or to cause unauthorized work to be removed, and to deduct the cost thereof from any compensation due or to become due the Contractor.

1F - 16 FINAL INSPECTION

A. The Engineer shall make final inspection of all work included in the contract, as soon as practical after notification by the Contractor that the work is completed and ready for acceptance. If the work is not acceptable to the Engineer at the time for such inspection, he shall inform the Contractor in writing as to the particular defects to be remedied before the final acceptance can be made.

1F - 09

B. The Contractor shall be relieved of normal surface maintenance responsibilities for any sections of the work which are completed and accepted by the Engineer prior to project completion. However, the guarantee period shall be stated in Section 1F - 39.

C. When the contract includes work for which the Federal and/or State Government is to pay a portion of the cost thereof, such work shall also be subject to the inspection and approval of the representatives of the Federal and/or State Government.

1F – 17 QUALITY OF MATERIALS

It is the intent of the specifications that first-class materials shall be used throughout the work, and that they shall be incorporated in such a manner as to produce completed construction, which is workmanlike and acceptable in every detail. The cost of collecting and furnishing of all test material for samples shall be borne by the Contractor, at no expense to the Owner. Only materials which conform to the requirements of these specifications shall be incorporated in the work. Wherever manufactures names are used it is understood that an equal product by another manufacturer will be acceptable provided the request along with supporting data is furnished to the Engineer five (5) days prior to opening of bids and is approved in writing by him. The Engineer shall be the sole judge of the acceptability of other than named manufacturers.

1F – 18 DEFECTIVE MATERIALS

All materials not conforming to the requirements of the specifications shall be considered as defective and shall be removed from the work; if in place, they shall be removed by the Contractor at his expense and replace with acceptable materials. No defective materials, the defects of which have been subsequently corrected, shall be used until approval has been given. Upon failure of the Contractor to comply forthwith with any order of the Engineer pursuant to the provisions of this article, the Engineer shall have authority to remove and replace defective materials and to deduct the cost of removal and replacement from any moneys due or to become due the Contractor.

1F – 19 SEWERS

Pipe used in sewer mains and force mains shall be tested and inspected at the source of supply for conformance with the specifications for such material. The pipe supplier shall arrange for the services of an approved independent testing laboratory to inspect, sample and test the pipe in conformance with the governing specifications, to mark pipe to be used in the work and to supply a statement to the Engineer that pipe marked as acceptable has been inspected and tested in accordance with the governing specifications and found to be in conformance with these specifications. The acceptance mark shall be distinct and clearly legible when the pipe is delivered to the site. Pipe, which has not been inspected and marked at
The source of supply, shall be rejected for the work.

1F – 20 SAND AND GRAVEL

The source of sand and gravel used in sewer and force main construction shall be approved by the Engineer prior to usage. The approval shall be based upon testing of the samples furnished by the Contractor and tested by the Testing Laboratory selected by the Engineer for conformance with the specifications. Approval shall be contingent upon the Contractor's using on the job materials, which conform with the samples satisfactorily tested. Payment for such testing shall be made by the Owner.

1F – 21 CONCRETE

Samples of concrete used in constructing structures shall be taken by the Contractor and made into test cylinders. The Owner shall provide the services of an approved independent testing laboratory to collect and test the cylinders and furnish a copy of test results to the Engineer. Any concrete which tests indicate failed to conform to the specification requirements shall be removed and replaced at the Contractor's expense, or at the option of the Engineer shall be disqualified for payment.

1F – 22 MISCELLANEOUS MATERIALS

Fittings, valves, castings, masonry block, bricks, manhole sections or other miscellaneous manufactured materials used in the sewer construction shall be furnished with the implied guaranty that such materials conform with the requirements of the specifications. The Engineer reserves the right to require a statement from the manufacturer of such materials that the specific materials have been inspected and tested and conform with the specifications.

1F – 23 JOB SITE INSPECTION

Regardless of any tests of materials made at the source, the Contractor shall carefully inspect all materials before installation and reject any materials, which have been damaged or have visible flaws. The Engineer also reserves the right to make such an inspection, but failure to detect irregularities does not relieve the Contractor of responsibility to remove and replace materials which are found to be defective after installation.

1F – 24 STORED MATERIALS

If it is necessary to store materials, they shall be protected in such a manner as to insure the preservation of their quality and fitness for the work. All stored materials shall be inspected at the time of use in the work, even though they may have been inspected and approved before being placed in storage. The Contractor may use the right-of-way for storage of materials, but the stock piles shall be confined to such cleared areas as may be approved by the Engineer. If stock-piling is done outside the right-of-way, the additional space required shall be provided by the Contractor at his own expense.

1F – 25 LAWS TO BE OBSERVED

The Contractor shall at all times observe and comply with all Federal and State laws and local ordinances and regulations, which in any manner affect the conduct of work, and all such orders or decrees as exist at the time bids are advertised, or legislative bodies or tribunals having legal jurisdiction or authority over the work, and no plea of misunderstanding or ignorance thereof will be considered. He shall indemnify and save harmless the Owner and all of its officers, agents, employees, and servants against any claim or liability arising from or based on the violation of such law, ordinance, regulation, order or decree, whether by himself or his employees.

1F – 26 INSURANCE REQUIREMENTS

A. The Contractor shall carry Public Liability, Property Damage and Vehicle Liability Insurance covering his operation on and off the site of the work in the limits of:

1. Public Liability 500,000
2. Property Damage 50,000 to 100,000
3. Automobile Liability B. I. 500,000 to 1,000,000
P. D. 50,000 to 100,000

1F – 11
B. The Contractor shall carry Workman's Compensation Insurance for all employees engaged in the work, and shall require all Sub-Contractors to do so.

C. The Contractor shall be solely responsible for all liabilities, suits, actions, and claims of every character whatsoever incurred or brought for or on account of any injuries, damages, or loss incurred, received, or sustained or claimed to have been incurred, received or sustained by any person or persons or to any property, real or personal, whether on or adjacent to the job site or not, arising out of or in any way connected with the matters and things set forth in these specifications, or other of the contract documents, whether due to the negligence of the Contractor, Dougherty County, or otherwise, and the Contractor covenants and agrees to indemnify and save harmless the Owner from all liabilities charges, expenses and costs on account of or by reason of any such injuries, damages, liabilities, claims, suits, or losses, however occurring, including any costs incurred in defending against the same. To further assure the performance of this covenant, the Contractor shall procure and constantly maintain in force at its expense, the liability insurance set forth in sections "Instructions to Bidders" and "Special Provisions".

1F – 27 PERMITS AND LICENSES

Unless otherwise provided, the Owner will procure all NPDES and EPD Permits. The Contractor shall give all notices necessary and incident to the due and lawful prosecution of the work.

1F – 28 PATENTED DEVICES, MATERIALS AND PROCESSES

If any design, device, material or process covered by letters patent or copyright is used by the Contractor, whether required

or not, he shall provide for such use by suitable legal agreement with the patentee or owner, guaranteeing the indemnity from and agreement in the price bid for the work. It shall be the duty of the Contractor, if so demanded by the Owner, to furnish said Owner with a copy of the legal agreement with the patentee or owner, and if such copy is not furnished when demanded, then the Owner may, if it so elects, withhold any and all payments to said Contractor until said legal agreement is furnished. If a suitable legal agreement with the patentee or owner is not made as required herein, the Contractor and surety shall indemnify and save harmless the owner from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright in connection with the work agreed to be performed under the contract, and shall indemnify the Owner for any cost, expense and damages which it may be obligated to pay by reason of any such infringement at any time during the prosecution or after the completion of the work.

1F – 29 SANITARY PROVISIONS

The Contractor shall comply with all rules and regulations of the Federal, State, and Local Health Departments, and shall take precautions to avoid creating unsanitary conditions.

1F -30 PUBLIC CONVENIENCE AND SAFETY

The Contractor shall notify the Engineer at least seven (7) days in advance of the starting of the construction work which might in any way inconvenience or endanger traffic so that arrangements may be made, if necessary, for closing the road and providing suitable detours. The Contractor shall at all times conduct the work in such a manner as to insure the least obstruction to vehicular and pedestrian traffic. The convenience of the general public and of residents along the roadway shall be provided for in a adequate and satisfactory manner.

1F – 31 BARRICADES AND WARNING SIGNS

A. When any section of road is closed to traffic, the contractor shall notify the Fire Department, provide, erect and maintain barricades, red flags and torches or lights at each end of the closed section and at all intersecting roads.

B. If during the progress of the work it is necessary to provide access to private property along the road, the Contractor shall provide, erect and maintain within the closed portion of the road, such barricades, signs, red flags, and torches or lights as may be necessary to protect the work and to safeguard local traffic.

C. When traffic is to be permitted to use the road during construction, the Contractor shall protect the work and provide for safe and convenient public travel by providing, erecting, and maintaining such barricades, red flags and torches or lights as are necessary.

D. The Contractor's responsibility for the work, as provided in Section 1F - 38 hall apply, even though barricades, signs, red flags and torches or lights are installed as required above.

E. Unless included in the bid, The cost of furnishing and maintaining barricades, warning signs, red flags, and torches or lights as required herein shall be incidental to the contract and no extra compensation will be allowed.

F. All traffic control signs will conform to the Georgia Manual on Uniform Traffic Control Devices, latest edition.

1F – 32 DEBRIS ON TRAVELED SURFACE OR STRUCTURES

A. Where the Contractor's equipment is operated on any portion of the traveled surface or structures used by traffic on or adjacent to the section under construction, the Contractor shall clean up traveled surface of all dirt and debris at the end of each day's operation.

B. The cost of this work shall be included in the contract unit prices and no additional compensation will be allowed.

1F – 33 EQUIPMENT ON TRAVELED SURFACE AND STRUCTURES

A. The traveled surface and structures on or adjacent to the work shall be protected, in a manner satisfactory to the Engineer from damage by lugs or cleats on treads or wheels of equipment.

B. All equipment used in the prosecution of the work shall comply with the legal loading limits established by the statutes of the State of Georgia or local regulations when moved over or operated on any traveled surface or structure unless permission in writing has been issued by the Engineer. Before using any equipment which may exceed the legal loading, the Contractor shall secure a permit, allowing ample time for making an analysis of stresses to determine whether or not the proposed loading would be safe within safe limits. The Owner will not be responsible for any delay in construction operations or for any costs incurred by the Contractor as a result of compliance with the above requirements.

1F – 34 USE OF EXPLOSIVES

A. When the use of explosives is necessary for the prosecution of the work, the Contractor shall be governed by the rules and regulations of the State of Georgia and any local ordinances and regulations
which govern the use of explosives. The County Engineer shall be notified a minimum of four (4) hours prior to any actual blasting operations.

B. No blasting will be permitted adjacent to existing buildings or structures. All rock at such locations shall be removed by the use of jack hammers and bull-points.

1F – 35 USE OF FIRE HYDRANTS

A. Water from fire hydrants shall be at the Contractor's expense. The Contractor shall make application to Albany Utilities, Dougherty County, Georgia, and secure a hydrant meter.

B. Fire hydrants shall be accessible at all times to the Fire Department. No material or other obstructions shall be place closer to a fire hydrant than permitted by municipal ordinances, rules or regulations, or within six (6) feet of a fire hydrant, in the absence of such ordinances, rules or regulations.

1F – 36 PROTECTION AND RESTORATION OF PROPERTY

A. If corporate or private property interferes with the work, the Contractor shall notify, in writing, the owners of such property, advising them of the nature of the interference and shall arrange to cooperate with them for the protection or disposition of such property. The Contractor shall furnish the Engineer with copies of such notification and with copies of any agreement between him and the property owners concerning such protection or disposition.

B. The Contractor shall take all necessary precautions for the protection of corporate or private property, such as walls and foundations of buildings, vaults, underground structures of public utilities, underground drainage facilities, overhead structures of public utilities, trees, shrubbery, crops, and fences contiguous to the work, of which the contract does not provide for removal. The Contractor shall protect and carefully preserve all official survey monuments, property marks, section markers and Geological Survey Monuments, or other similar monuments, until the Owner, or an authorized surveyor or agent, has witnessed or otherwise referenced their location or relocation. The Contractor shall take reasonable precautions to avoid disturbing any archeological and other historic remains encountered during construction. The Contractor shall notify the Engineer of the presence of any such survey or property monuments or archeological and other historic remains as soon as they are discovered.

C. The Contractor shall be responsible for the damage or destruction of property of any character resulting from neglect, misconduct, or omission in his manner or method of execution or nonexecution of the work, or caused by defective work or the use of unsatisfactory materials, and such responsibility shall not be released until the work shall have been completed and accepted and the requirements of the specifications complied with.

D. Whenever public or private property is so damaged or destroyed, the Contractor shall at his own expense, restore such property to a condition equal to that existing before such damage or injury was done by repairing, rebuilding, or replacing it as may be directed, or he shall otherwise make good such damage or destruction in an acceptabel manner. If he fails to do so, the Engineer may, after the expiration of a period of forty-eight (48) hours after giving him notice in writing, proceed to repair, rebuild or otherwise restore such property as may be deemed necessary, and the cost thereof shall be deducted from any compensation due, or which may become due, the Contractor under this contract.

E. The Contractor shall remove all mailboxes within the limits of construction which interfere with construction operations and shall erect them at temporary locations.

F. As soon as construction operations permit, he shall set the mailboxes at their permanent locations. This work shall be performed as dircted by the Engineer. The Contractor shall replace at his own expense any mailbox or post, permanent or temporary, which has been damaged by his operations.

G. The cost of all materials required and all labor necessary to comply with the above mentioned provisions will not be paid for separately, but shall be considered as incidental to the contract, unless included as a bid item.

1F – 37 PROTECTION AND RESTORATION OF TRAFFIC SIGNS

A. Any traffic sign within the limits of construction which interferes with construction operations may be removed by the Contractor when authorized by the Engineer. Any traffic sign which has been removed shall be re-erected immediately by the Contractor at the temporary location designated by the Engineer, and as soon as construction operations permit, the sign shall be set at its permanent location. The cost of all materials required and all labor necessary to comply with this provision will not be paid for separately, but shall be considered as incidental to the contract, unless included as a bid item.

B. The Contractor shall replace at his own expense any traffic sign or post which has been damaged due to his operations.

C. Any traffic sign designated as critical by the Engineer shall not be disturbed and no additional compensation will be allowed the Contractor for any delays, inconvenience or damage sustained by him due to any special construction methods required in prosecuting his work due to the existence of such traffic signs.

1F - 38 CONTRACTOR'S RESPONSIBILITY FOR WORK

A. The work shall be under the charge and care of the Contractor until final acceptance by the Owner. The Contractor shall assume all responsibility for injury or damage to the work by action of the elements or from any other cause whatsoever, and shall rebuild, repair, restore and make good, at his expense, all injuries or damages to the work, except that when the work is opened to usage by written order of the Engineer, the provisions of this article shall not apply to damage caused by such usage and not due to the Contractor’s fault or negligence.

B. When materials are furnished to the Contractor by the Owner for inclusion in the work, the Contractor’s responsibility for handling and installation of all such materials shall be the same as for materials furnished by him.

1F – 39 GUARANTY PERIOD

The Contractor shall warrant all materials and equipment furnished and work performed for a period of one (1) year from date of final acceptance in writing by the Engineer.

1F – 40 PERSONAL LIABILITY OF OWNER'S AGENTS

In carrying out the provisions of this contract, or in exercising any power or authority granted to the Owner or the Engineer, there shall be no personal liability upon any officer or authorized agent of the Owner or the Engineer, it being understood that all such persons act as agents and representatives.

1F – 41 NO WAIVER OF LEGAL RIGHTS

The Owner shall not be precluded or estopped by any measurement, estimate or certificate made either before or after the completion and acceptance of the work and payment therefore, from showing the true amount and character of the work performed and materials furnished by the Contractor, or from showing
that any such measurements, estimate, or certificate is untrue or incorrectly made, or that the work or materials do not conform in fact to the contract. The Owner shall not be precluded or estopped, notwithstanding any such measurement, estimate or certificate and payment in accordance therewith, from recovering from the Contractor and his sureties such damages as it may sustain by reason of his failure to comply with the terms of the contract. Neither the acceptance by the Owner, or any representative of the Owner, nor any payment for or acceptance of the whole or any part of the work, not any extension of time, nor any possession taken by the Owner, shall operate as a waiver of any portion of the Contract, or of any power herein reserved, or any right to damages herein provided. A waiver of any breach of the contract shall not be held to be a waiver of any other or subsequent breach.

1F – 42 SUBLETTING OR ASSIGNMENT OF CONTRACT

If the Contractor sublets the whole or any part of the work to be done under the contract, he shall not under any circumstances be relieved of his liabilities and obligations. All transactions of the Engineer shall be with the Contractor; subcontractors shall be recognized only in the capacity of employees or workmen and shall be subject to the same requirements as to character and competence. The Contractor shall not assign, transfer, convey, sell, or otherwise dispose of the whole or any part of his contract, his rights, title or interest therein, or his power to execute such contract, to any person, firm, partnership or corporation without written consent of the Engineer.

1F – 43 PROGRESS SCHEDULE

Promptly after the award of the contract, the Contractor shall submit to the Engineer a satisfactory progress schedule which shall show the proposed sequence of work, and how the Contractor proposes to complete the various items of work within the number of days set up on the contract. The progress schedule shall be reviewed and revised monthly as working conditions warrant. The Contractor shall confer with the Engineer in regard to the prosecution of the work in accordance with this schedule. This schedule shall be used as a basis for establishing major construction operations, and for checking the progress of the work.

1F – 44 PROSECUTION OF THE WORK

The Contractor shall begin the work to be performed under the contract not later than ten (10) days after the date of the "Notice to Proceed", unless otherwise provided. The work shall be prosecuted in such a manner and with such a supply of materials, equipment, and labor as is considered necessary to insure its completion in accordance with the progress schedule.

1F – 45 COMPLETION DATE

A. The Contractor shall complete all work on or before the stipulated completion date, or on or before a later date determined as specified herein; otherwise, the Owner may proceed to collect liquidated damages as provided for in the special provisions.

B. When a delay occurs due to unforeseen causes beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God, acts of the public enemy, governmental acts, fires, floods, epidemics, strikes, (except those caused by improper acts or omissions of the Contractor), extraordinary delays in delivery of materials caused by strikes, lockouts, wrecks, freight embargoes, governmental acts, or acts of God, the time of completion shall be extended in whatever amount is determined by the Owner.

1F – 16
C. An "Act of God" means an earthquake, flood, cloudburst, cyclone, or other cataclysmic phenomenon of nature beyond the power of the Contractor to foresee or make preparation in defense against. A rain, windstorm, or other natural phenomenon of normal intensity, based on U. S. Weather Bureau reports, for the particular season of the year in which the work is being prosecuted, shall not be construed as an "Act of God" and no extension of time will be granted for the delays resulting therefrom.

1F – 46 LIMITATIONS OF OPERATIONS

The Contractor shall conduct his work so as to create a minimum of incovenience to vehicular and pedestrian traffic. At any time when, in judgement of the Engineer, the Contractor has obstructed or closed a road or is carrying on operations on a greater portion of a street than is necessary for proper prosecution of the work, the Engineer may require the Contractor to finish the section on which work is in progress before the work is started on any additional section.

1F – 47 CHARACTER OF WORKMEN AND EQUIPMENT

The Contractor shall employ only competent and efficient laborers, mechanics, or artisans and whenever, in the opinion of the Engineer, any employee is careless, incompetent, obstructs the progress of the work, acts contrary to instructions, or conducts himself improperly, the Contractor shall, upon request of the Engineer, discharge or otherwise remove him from the work and shall not employ him again, except with the written consent of the Engineer.

1F – 48 SUSPENSION OF WORK

The Engineer shall have authority to suspend the work wholly or in part, for such period of time as he may deem necessary, due to conditions unfavorable for the satisfactory prosecution of the work, of to conditions which in his opinion warrant such action; or for such time as is necessary by reason of failure on the part of the Contractor to carry out orders given, or to perform any or all provisions of the contract. No additional compensation will be paid the Contractor because of any costs caused by such suspension, except when the suspension is ordered for reasons not resulting from any act or omission on the part of the Contractor. If it becomes necessary to stop work for an indefinite period of time, the Contractor shall store all materials in such manner that they will not obstruct or impede the traveling public unnecessarily or become damaged in any way, take every precaution to prevent damage or deterioration of the work performed, provide suitable drainage of the roadway, and erect temporary structures where necessary. The Contractor shall not suspend work without written authority from the Engineer.

1F – 49 DETERMINATION AND EXTENSION OF CONTRACT TIME FOR COMPLETION

The time for completion of the work contemplated will be specified in the contract, and it is understood that the completion of the work within the time specified is an essential part of the contract. If the Contractor finds it impossible to complete the

work within the time specified in the contract, he may, at any time prior to the last fifteen (15) days of the time specified, make written request to the Owner for an extension of time. He shall justify the granting of his request. If the Owner finds that the work is delayed because of conditions beyond the control of the Contractor, or that the quantities of work done, or to be done, are in excess of the estimated quantities by an amount sufficient to warrant additional time, he shall grant an extension of time for completion which appears reasonable and proper. The Engineer also may initiate the request for extension of time. The extended time for completion shall then be considered as in effect the same as if it were the original time for completion.

1F – 50 DEFAULT ON CONTRACT

If the Contractor fails to begin the work under contract within the time specified or fails to perform the work with sufficient workmen and equipment or with sufficient materials to insure the completion of said work within the specified time, or shall perform the work unsuitably, as determined by the Engineer, or shall neglect or refuse to move materials or perform anew such work as shall be rejected as defective and unsuitable, or shall discontinue the prosecution of the work, or if the Contractor shall become insolvent to be declared bankrupt, or shall commit any act of bankruptcy or insolvency, or shall make an assignment for the benefit of creditors, or from any other cause whatsoever shall not carry on the work in a manner approved by the Engineer, the Engineer shall give notice, in writing, to the Contractor and his surety of such delinquency, said notice to specify the corrective measures required. If the Contractor, within a period of ten (10) days after said notice, shall not proceed in accordance therewith, the Owner shall, upon written certification from the Engineer of the fact of such delinquency and the contractor's failure to comply with said notice, have full power and authority to forfeit the rights of the Contractor and at its option to call upon the surety to complete the work in accordance with the terms of the contract, or it may take over the work, including any or all materials and equipment on the ground as may be suitable and acceptable, and may complete the work with his own forces, or may enter into a new agreement for the completion of said contract according to the terms and provisions thereof, or use such other methods as, in its opinion, shall be required for the completion of said contract in an acceptable manner. All costs and charges incurred by the Owner together with the cost of completing the work under contract, shall be deducted from any moneys due or which may become due on such contract. In case the expense so incurred by the Owner shall be less than the sum which would have been payable under the contract if it had been completed by the Contractor, the Contractor shall be entitled to receive the difference subject to any claims for liens thereon which may be filed with the Owner, or any prior assignment filed with it, and in case such expense shall exceed the sum which would have been payable under the contract, the Contractor and the surety shall be liable and shall pay to the Owner the amount of such excess.

1F – 51 TERMINATION OF THE CONTRACTOR'S RESPONSIBILITY

Whenever the improvement called for by the contract shall have been completely performed on the part of the Contractor and all parts of the work have been approved and accepted by the Engineer, according to the contract, and the final estimate paid, the Contractor's obligations shall be considered fulfilled, except as set forth in his bond, in Section 1F - 41 and his one year guarantee, in Section 1F - 39.

1F – 52 MEASUREMENT OF QUANTITIES

All work completed under the contract will be measured according to United States standard measures. The method of measurement shall be described in the specifications or the special provisions.

1F – 53 SCOPE OF PAYMENT

A. The Contractor shall receive and accept the compensation as herein provided, in full payment for furnishing all materials, labor, tools, and equipment; for performing all work contemplated and embraced under the contract; for all loss or damage arising out of the nature of the work or from the action of the elements; for any unforeseen difficulties or obstructions which may arise or be encountered during the prosecution of the work until its final acceptance by the Owner; for all risks of every

description connected with the prosecution of the work; also, for all expenses incurred by or in consequence of suspension or discontinuance of such prosecution of the work as herein specified, or for any infringement of patents, trademarks or copyrights, and for completing the work in an acceptable manner according to the plans and specifications.

B. The payment of any current estimate prior to final acceptance of the work by the Owner shall be no way constituted an acknowledgment of the acceptance of the work, nor in any way prejudice or affect the obligation of the Contractor, at his expense to repair, correct, renew, or replace any defects or imperfections in the construction or in the strength or quality of the materials used in or about the construction of the work under contract and its appurtenances, not any damage due to or attributable to such defects, which defects, imperfections, or damage shall have been discovered on or before the final inspection and acceptance of the work. The Engineer shall be the sole judge of such defects, imperfections, or damage and the Contractor shall be liable to the Owner for failure to correct the same as provided herein.

1F – 54 INCREASED OR DECREASED QUANTITIES

Whenever the quantity of any item of work as given in the proposal shall be increased or decreased, payment shall be made on the basis of the actual quantity completed at the unit price for such item named in the proposal, except as otherwise provided in Section 1F - 04 or in the detailed specifications for each class of work.

1F – 55 PAYMENT FOR EXTRA WORK

A. Claims for extra work must be authorized in writing by the Engineer prior to the work being done.

B. Charges for extra work shall be covered and determined by one of the following:

1. Unit prices stipulated in the Proposal.

2. The actual cost of labor, material, rental of tools and equipment, utilities, supplies, employee and equipment insurance, social security, etc. An additional fixed fee, not to exceed fifteen (15%) percent of the actual cost of labor, material, rental of tools and equipment, utilities, and supplies shall be added for overhead and profit. Among the items considered as overhead are cost for insurance other than above, bond superintendence, time keeping, clerical work, watchman, use of small tools, general office expense and miscellaneous.

1F – 56 PARTIAL PAYMENTS

A. GENERAL

1. At the end of each calendar month, the total value of Pay Items complete in place will be estimated by the Owner and certified for payment. Such estimate is approximate only and may not necessarily be based on detailed measurements. Value will be computed on the basis of Contract Item Unit Prices or on percentage of completion of Lump Sum Items.

B. RETAINAGE

1. As long as the gross value of completed work is less than fifty (50%) percent of the total contract amount, or if the Contractor is not maintaining his construction schedule to the satisfaction of the Owner, the Owner shall retain 10 (10%) percent of the gross value of the completed work as indicated by the current estimate certified by the Owner for payment.

2. After the gross value of completed work becomes equal to or exceed fifty (50%) percent of the total contract amount within a time period satisfactory to the Owner, then the total amount to be retained shall be five (5%) percent of the gross value of the completed work as indicated by current estimates, until all pay items are substantially completed.

3. All material and work covered by partial payments made thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of materials and work upon which payments have been made or the restoration of any damage work, or as a waiver of the right of the Owner to require the fulfillment of all of the items of the contract.

1F – 57 ACCEPTANCE OF WORK AND FINAL PAYMENTS

A. Upon notice from the Contractor that his work is completed, the Engineer will make a final inspection of the work, and shall notify the Contractor in writing of all instances where his work fails to comply with the contract drawings and specifications as well as any defects he may discover. The Contractor shall immediately make such alterations as are necessary to make the work comply with the contract drawings and specifications, and to the satisfaction of the Engineer.

B. Before the work is considered as complete, all rubbish and unused material due to or connected with the construction must be removed and the premises left in a condition satisfactory to the Owner. Streets, curbs, cross-walks, pavements, sidewalks, fence, and other public and private property disturbed or damaged shall be restored to their former condition at no cost to the Owner except where special items for such work are provided in the bid items. Final acceptance will be withheld until such work is finished.

C. When final inspection and final acceptance have been made by the Owner, the Owner will prepare the Final Statement of the quantities of the various classes of work performed. All prior partial estimates and payments shall be subject to correction in the Final Statement. The Owner will transmit a copy of the statement to the Contractor by registered or Certified Mail. The Contractor will be afforded sixty (60) days in which to review the Final Statement in the Owner's office before it is certified for payment by the Owner. Any adjustments will be resolved by the Owner. After approval of the Final Statement by the Contractor, or after the expiration of the sixty (60) days, the quantities on the Final Statement shall be considered correct.

D. The acceptance by the Contractor of the final estimate, shall operate as a release to the Owner from all claims and liabilities to the Contractor for all work done or materials furnished, or for any act of the Owner or his agents affecting the work.

1F – 58 VENUE AND JURISDICTION

Contractor agrees that with respect to any claims which Dougherty County may have against the Contractor arising out of this contract or its performance or on account of any work done under or pursuant to the contract or for indemnity shall be controlled and governed by the law of Georgia, and actions pursuant to any such claims may be filed and prosecuted against the Contractor in the courts of Dougherty County, Georgia. For this purpose, the Contractor does hereby waive all questions of venue and jurisdiction and does hereby submit itself to the venue and jurisdiction of the Courts of Dougherty County, Georgia.

Contractor does hereby appoint_____

whose address is_____
a resident of Dougherty County, Georgia, as its agent to receive service of any such actions, and service upon such agent shall be good and valid service upon the Contractor. If for any reason said agent for service shall leave Dougherty County, the Contractor will immediately appoint another agent resident in Dougherty County, Georgia and if the Contractor fails to appoint such agent, service may be perfected upon the Contractor by serving the Probate Judge of Dougherty County, Georgia, and such service shall in all respects be good and valid service of said action upon the Contractor.

It shall be the obligation of the Contractor to keep its agent for service and the Probate of Dougherty County informed and advised at all times of the address to which any such suits served upon them shall be sent.

1F – 59 DATA, PAYROLLS AND RECORDS

The Contractor shall submit to the Owner, State and Federal agencies such data, payrolls, reports or other material relative to work performed as may be required for determining compliance with this contract.

1F – 60 PAYMENTS BY CONTRACTOR

The Contractor shall pay (A) for all transportation and utility services not later that 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 nineth (90%) percent 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 no later than the 30th day following the completion of that part of the work in or on which such materials, tools and equipment are incorporated or used, and (C) to each of his subcontractors, no later than the 5th day following each payment to the respective amounts allowed the Contractor on account of the work performed by his Sub-contractors to the extent of each Sub-contractors interest therein.

1F – 61 ADDITIONAL OR SUBSTITUTE BOND

If at any time the Owner for justifiable cause, shall be or become dissatisfied with the Surety or Sureties for the performance and/or payment bonds, the Contractor shall within five (5) days after notice from the Owner to do so, substitute an acceptable bond (or bonds) in such form and sum and signed by such other Surety or Sureties as may be satisfactory to the Owner. The premiums on such bond shall be paid by the Contractor. No further payments shall be deemed due nor shall be made until the new Surety or Sureties shall have furnished such an acceptable bond to the Owner.

1F – 62 SAFETY AND HEALTH

In order to protect the lives and health of his employees under the contract, the Contractor shall comply with all pertinent provisions of the Contract Work and Safety Standards Act, as amended, commonly known as the Construction Safety Acts as pertains to health and safety standards; 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 his plant, appliances, and methods and for any damage which may result from their failure or their improper construction, maintenance or operation.

END OF SECTION

SECTION 02230
TOPSOIL

PART 1 GENERAL

1.01 SCOPE

A. Topsoil for planting shall consist of a rich, friable soil conforming to the requirements and provisions set out in these Specifications, or approved by the Engineer and obtained from locations indicated on the Drawings. Topsoil shall be placed at the locations indicated on the Drawings, set out in the Specifications or as directed by the Engineer and in conformity with the provisions and requirements set out in the Specifications.

B. Suitable topsoil which has been stripped off of excavation and embankment areas shall be stockpiled as directed by the Engineer and later used before additional topsoil is hauled to the site. Unsuitable material shall not be included in these stockpiles and shall be wasted as directed by the Engineer.

PART 2 PRODUCTS

2.01 MATERIALS

A. Topsoil planting shall be a rich, friable loam containing a large amount of humus and shall be original surface sandy loam, topsoil of good, rich, uniform quality, free from any material such as hard clods, stiff clay, hardpan, partially disintegrated stone, pebbles larger than 1/2-inch in diameter, lime, cement, bricks, ashes, cinders, slag, concrete, bitumen or its residue, boards, sticks, chips or other undesirable material harmful or unnecessary to plant growth. Topsoil shall be reasonable free from perennial weeds and shall not contain objectionable plant material, toxic amounts of either acid or alkaline elements or vegetable debris undesirable or harmful to plant life.

B. Topsoil shall be natural topsoil without admixture of subsoil material, and shall be classified as a loam, silt loam, clay loam or a combination thereof. Topsoil shall contain not less than five percent nor more than 20 percent, by weight, of organic matter as determined by loss or ignition of oven-dried samples. The ignition test shall be performed on samples which have been thoroughly oven-dried to constant weight at a temperature of 221 degrees F.

C. Topsoil shall be secured from areas from which topsoil has not been previously removed, either by erosion or mechanical methods. Topsoil shall not be removed to a depth in excess of the depth approved by the Engineer.

D. The area or areas from which topsoil is secured shall possess such uniformity of soil depth, color, texture, drainage and other characteristics as to offer assurance that, when removed in commercial quantities, the product will be homogeneous in nature and will conform to the requirements of these Specifications, or as required by the Engineer.

E. Topsoil may be secured, if approved by the Engineer, from areas which are, or have been, in cultivation within the past five years, which are producing or have produced fair or good yields of staple farm or truck crops without unusual fertilization, or topsoil may be secured from areas supplied with good normal drainage which is arable or suitable for cultivation.

PART 3 EXECUTION

3.01 EQUIPMENT

All equipment necessary for the proper removal, transportation, protection and maintenance of topsoil must be available, when required, in first class working condition and shall have been approved by the Engineer before construction will be permitted to begin.

3.02 REQUIREMENTS

A. Topsoil, except that stockpiled from excavation or embankment areas on the Project, shall not be stored for use but shall be excavated and placed directly into its final position.

B. All areas from which topsoil is to be secured, shall be cleaned of all sticks, boards, stones, lime, cement, ashes, cinders, slag which will hinder or prevent growth.

C. In securing topsoil from a designated pit, or elsewhere, should strata or seams of material occur which do not come under the requirements for topsoil, such material shall be removed from the topsoil or if required by the Engineer, the pit shall be abandoned.

D. Before placing or depositing topsoil upon any areas, all improvements within the area shall be completed, unless otherwise approved by the Engineer.

E. The areas or pits into which topsoil is to be placed or incorporated, shall be prepared before securing topsoil for use. The depth to which topsoil is excavated in any pit, shall be subject to the direction of and be approved by the Engineer.

F. All stockpiled soils shall have adequate erosion control features in place to prevent the loss of any material from said stockpile area into storm sewers, ditches, swales, streams, ponds, lakes or waterways of any kind.

G. Topsoil shall be transported in vehicles which will not lose or scatter the topsoil during transportation.

H. Topsoil shall be placed upon or incorporated into prepared areas or pits in accordance with the provisions and requirements set out in the sections of these Specifications covering the particular type or kind of planting or seeding for which topsoil is required.

I. Rock sloped and other rock areas which are to be seeded shall be capped with 9-inches of suitable material before topsoil is used.

3.03 MAINTENANCE

The Contractor shall maintain topsoil, at Contractor's own expense, in connection with any seeding or planting, or otherwise, until final completion of the Project. Maintenance shall consist of preserving, protecting, replacing and such other work as may be necessary to keep the Project in a satisfactory condition.

3.04 CLEANING

A. Final cleaning shall consist of completely cleaning the area of all equipment, rubbish, excess material and unused materials which will mar the appearance of the Project and disposing of the same satisfactorily.

B. All pavements and structures shall be swept clean of all dirt or rubbish which may have become deposited upon them during construction.

C. In addition, final cleaning up shall be performed in accordance with the requirements of these Specifications.

END OF SECTION

SECTION 02200
SITE PREPARATION

PART 1 GENERAL

1.01 SCOPE

This Section describes materials and equipment to be utilized and requirements for their use in preparing the work site for construction. The Contractor shall furnish all materials, equipment and labor necessary to complete the work. The contractor is required to contact the Utilities Protection Center, Inc. in the State of Georgia call 1-800-282-7411 prior to any excavation or construction.

1.02 REFERENCES

Georgia Manual for Erosion and Sedimentation Control, current edition.

1.03 QUALITY ASSURANCE

A. Comply with applicable codes, ordinances, rules, regulations and laws of local, municipal, state or federal authorities having jurisdiction.

B. Transit and measuring devices shall be calibrated to layout site and construction work.

1.04 SITE CONDITIONS

The area(s) to be demolished, cleared, and/or graded is shown schematically on the Drawings or specified below.

PART 2 PRODUCTS

2.01 EQUIPMENT

The Contractor shall furnish equipment of the type normally used in clearing and grubbing operations including, but not limited to, tractors, dozers, chippers, trucks, loaders, and root rakes.

PART 3 EXECUTION

3.01 PREPARATION

A. Protect and maintain all benchmarks, monuments and reference points. Replace if disturbed or destroyed. If found at variance with the Drawings, notify the Engineer before proceeding with layout work.

B. Install erosion and sedimentation control structures as shown on the Drawings.

C. Protect all trees, vegetation, structures, utilities, and buildings not designated for removal for demolition.

3.02 TOPSOIL STRIPPING AND STOCKPILING

A. Topsoil (top 6" – 8" of material) is to be removed from all cleared and grubbed areas and placed in designated stockpile areas as shown on the plans or indicated by owner. The Contractor shall then grade the entire work site to conform, in general, to the finish elevations shown on the Plans.

B. Shape topsoil stockpiles to drain without ponding water.

C. Where trees are indicated to remain, stop topsoil stripping at drip line.

3.03 TREE PROTECTION

A. Construct tree protection barricades, minimum 3'-0" high around individual trees and groups of trees designated to remain. Construct barricades at drip line.

B. Protect tree root systems from damage due to deleterious materials caused by run-off or spillage during mixing, use or discarding of construction materials or drainage from stored materials. Protect root systems form compaction, flooding, erosion or excessive wetting.

3.04 EXCAVATION AROUND TREES TO REMAIN

A. Where trenching for utilities is required within drip line, hand dig under or around roots. Cut no lateral roots or tap roots; cut smaller roots which interfere with new construction.

B. Where excavation for new construction is required within drip line of trees, hand excavate to minimize damage to root systems. Use narrow tine spading forks and comb soil to expose roots. Relocate roots in backfill areas. If large, main lateral roots are encountered, expose beyond excavation limits, bend and relocate without breaking. If encountered immediately adjacent to location of new construction and relocation is not practical, cut roots approximately 3" back from new construction.

C. Allow no exposed roots to dry out before permanent backfill is places; provide temporary earth cover, or pack with peat moss and wrap with burlap. Water and maintain in moist condition and temporarily support and protect from damage until permanently relocated and covered with backfill.

D. Prune braches in accord with standard horticultural practice to balance loss to root system caused by damage or cutting of root system. Engage qualified arborist approved by the Engineer to prune branches.

3.05 REPAIR FOR DAMAGED TREES

A. Engage a qualified arborist approved by the Engineer to perform tree repair work.

B. Make repairs promptly after damage occurs to prevent progressive deterioration of damaged trees.

C. Remove dead trees and damaged trees in construction area which are determined by the tree arborist to be incapable of restoration to normal growth pattern.

3.06 CLEARING AND GRUBBING

A. Clear and grub each area before excavating. All trees, herbaceous growth and stumps are to be chipped for mulch. Mulch will be stockpiled in the areas designated on the Plans or used for erosion control as required. All other debris is to be removed to an approved landfill.

B. Materials to be removed from the project site include, but are not limited to trash, organic matter, construction waste materials (i.e. paving, concrete miscellaneous structures, houses), debris and abandoned utilities.

C. Grubbing shall consist of completely removing roots, stumps, trash and other debris from all graded areas so that topsoil is free of roots and debris. Topsoil is to be left sufficiently clean so that further picking and raking will not be required.

D. All foundations and planking embedded in the ground shall be removed and disposed. Butts of utility poles shall be removed.

E. Landscaping features shall include, but not limited to, fences, cultivated trees and shrubbery, property corners, man made improvements and signs. The Contractor shall take extreme care in moving landscape features and promptly re-establishing these features.

F. Surface rocks and boulders shall be grubbed from the soil and removed from the site if not suitable as rip rap.

G. The entire construction area shall be grubbed by heavy tractors with root rakes. Raking shall generally proceed along the contour rather than up and down slopes so as to inhibit soil erosion.

H. Where the tree limbs interfere with utility wires, or where the trees to be felled are in close proximity to utility wires, the tree shall be taken down in sections to eliminate the possibility of damage to the utility.

I. Any work pertaining to utility poles shall comply with the requirements of the appropriate utility.

J. All fences adjoining any excavation or embankment that, in the Contractor's opinion, may be damaged or buried, shall be carefully removed, stored and replaced. Any fencing that, in the Engineer's opinion, is significantly damaged shall be replaced with new fence material.

K. Stumps and roots shall be grubbed and removed to a depth not less than two feet below grade. All holes or cavities which extend below the subgrade elevation of the proposed work shall be filled with crushed rock or other suitable material, compacted to the same density as the surrounding material.

L. The Contractor shall exercise special precautions for the protection and preservation of trees, cultivated shrubs, sod, fences, etc. situated within the limits of the construction area but not directly within excavation and/or fill limits. The Contractor shall be held liable for any damage the Contractor's operations have inflicted on such property.

M. The Contractor shall be responsible for all damages to existing improvements resulting from Contractor's operations.

3.07 DISPOSAL OF DEBRIS

A. The debris resulting from the clearing and grubbing operation shall be removed from the site and disposed of in accordance with all requirements of federal, state, county and municipal regulations. No debris of any kind shall be deposited in any stream or body of water, or in any street or alley. No debris shall be deposited upon any private property. In no case shall any material or debris be left on the Project, shoved onto abutting private properties or buried on the Project.

B. When approved in writing by the Engineer and when authorized by the proper authorities, the Contractor may dispose of such debris by burning on the Project site provided all requirements set forth by the governing authorities are met. The authorization to burn shall not relieve the Contractor in any way from damages which result from the Contractor's operations. On easements through private property, the Contractor shall not burn on the site unless written consent is also secured from the property owner, in addition to authorization from the proper authorities.

END OF SECTION

COMPLETE AND SUBMIT

CERTIFICATION OF NON-COLLUSION

The bidder being sworn, disposes and says,

_____

The Contractor submitting this and its agents, officers or employees have not directly or indirectly entered into any agreements, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this bid.

DATE: _____

COMPANY NAME: _____

AUTHORIZED REPRESENTATIVE NAME: _____

TITLE: _____

SIGNATURE: _____

COMPLETE AND SUBMIT

GOVERNING LAW AND VENUE

Contractor agrees that as to any actions or proceedings arising out or related to this agreement, any such proceedings shall be governed and determined by Georgia Law.

Contractor further agrees that as to any actions or proceedings arising out of or related to this agreement, any such action or proceeding shall be resolved only in an appropriate court located in Dougherty County, Georgia.

DATE: _____

COMPANY NAME: _____

AUTHORIZED REPRESENTATIVE NAME: _____

TITLE: _____

SIGNATURE: _____

COMPLETE AND SUBMIT

DEBARRED BIDDERS/ INTEGRITY CERTIFICATION

Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion (49 CFR, Part 29):

The Contractor must certify that neither it nor its principals are presently debarred, suspended, proposed for disbarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. Further, the Contractor certifies that he or she shall obtain an identical certification from all its sub-contractors. The Contractor also agrees that when a sub-contractor is unable to certify to any of the statements in this certification, the prospective participant shall submit an explanation to the Contractor.

DATE: _____

COMPANY NAME: _____

AUTHORIZED REPRESENTATIVE NAME: _____

TITLE: _____

SIGNATURE: _____

COMPLETE AND SUBMIT

Drug Free Workplace Certification

DRUG FREE WORKPLACE REQUIREMENTS: The Contractor will provide the following certification that a Drug Free Workplace will be provided on the Project.

The undersigned certifies that the provisions of Code Sections 50-24-1 through 50- 24-6 of the Official Code of Georgia Annotated, relating the "Drug Free Workplace Act", have been complied with in full. The undersigned further certifies that:

1. A drug free workplace will be provided for the Contractor's employees during the performance of the Contract; and
2. Each Contractor who hires a Subcontractor to work in a drug free workplace shall secure from that Subcontractor the following written certification:

DATE: _____

COMPANY NAME: _____

AUTHORIZED REPRESENTATIVE NAME: _____

TITLE: _____

SIGNATURE: _____

INDEMNITY AGREEMENT

This indemnity agreement made and entered into in favor of DOUGHERTY COUNTY, a municipal corporation, by [CORPORATE NAME].

WHEREAS [CORPORATE NAME] has submitted a bid to DOUGHERTY COUNTY so as to provide

[describe the service, products(s)]_____.

NOW, THEREFORE, as an additional consideration in DOUGHERTY COUNTY awarding the bid to [CORPORATE NAME],

[CORPORATE NAME] agrees to indemnify and hold harmless, DOUGHERTY COUNTY, its agents, principals, officers, and employees, their successors and assigns, individually and collectively, with respect to all third party claims, demands or liability for any injuries to any person (including death) or damage to any property arising out of any alleged negligence of its officers, agents, or employees in connection with the product or services involved in the bid; provided this indemnity shall not extend to any damage, injury or loss due to DOUGHERTY COUNTY's sole negligence or willful injury.

[CORPORATE NAME] shall reimburse DOUGHERTY COUNTY for reasonable attorney fees and expenses of DOUGHERTY COUNTY in defending all such claims and shall also be responsible for payment of all judgements.

WITNESS THE HAND AND SEAL of the undersigned pursuant to proper corporate authority this, ___ day of _____, 20___.

[CORPORATE NAME]

By: _____

Title _____

Attest:_____

Title _____

[Affix Corporate Seal]

BID BOND

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

_____ as PRINCIPAL, and
(Name of Principal)
_____ as SURETY are held and firmly bound unto Dougherty County Board of Commissioners, hereinafter called the "Local Public Agency," in the penal sum of

_____Dollars ($_____) 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.

_____, 20___, for
_____

_____.

NOW, THEREFORE, if the Principal shall not withdraw said Bid within the allowable period specified, and shall within the period specified therefor, or if no period be specified, within ten (10) days after the prescribed forms are presented to him for signature, enter into a written Contract with the Local Public Agency in accordance with the Bid as accepted, and give bond with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such Contract; or in the event of the withdrawal of said Bid within the period specified, or the failure to enter into such Contract and give such bond within the time specified, if the Principal shall pay the local Public Agency the difference between the amount specified in said Bid and the amount for which the Local Public Agency may procure the

required work or supplies or both, if the latter be in excess of the former, then the above obligation shall be void and of no effect, otherwise it is to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals this _____ day of _____, 20__, the name and corporate seal of each corporate party being hereto affixed and these presents signed by its undersigned representative, pursuant to authority of its governing body.

In presence of:

_____(SEAL)
(Individual Principal)

_____(SEAL)
(Business Address, Including Zip Code)

_____(SEAL)
(Partnership)

_____(SEAL)
(Business Address, Including Zip Code)

_____
Surety

By _____

Address_____

_____
City State Zip

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.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That _____
(Legal title and address of the Contractor)

_____
as Principal (hereinafter referred to as "Contractor"), and

_____
(Legal title and address of Surety)

as Surety (hereinafter referred to as "Surety"), are held firmly bound unto DOUGHERTY COUNTY BOARD OF COMMISSIONERS, as Obligee (hereinafter referred to as "Owner"), in the amount
of_____ Dollars ($_____), to which payment Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bounded Principal has entered into a contract with Owner dated the ____ day of _____, 20__, for the construction of
_____
_____.
_____.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION are such that, if the Contractor shall promptly and faithfully perform and comply with the terms of said Contract; and shall indemnify and save harmless the Owner against and from all costs, expenses, damages, injury or loss to which said Owner may be subjected by reason of any wrongdoing, including patent infringement, misconduct, want of care or skill, default, failure of performance, on the part of said Principal, his agents, subcontractors or employees, in the execution or performance of said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

1. The said Surety to this bond, for value received, hereby stipulates and agrees that no change, extensions of time, alteration or addition to the terms of the Contract or the work to be performed thereunder, or the Specifications or Drawings accompanying same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications and Drawings.

2. If pursuant to the Contract Documents the Contractor shall be declared in default by the Owner under the aforesaid Contract, the Surety may promptly remedy the default or shall promptly complete the Contract in accordance with its terms and conditions. It shall be the duty of the Surety to give an unequivocal notice in writing to the Owner, within twenty-five (25) days

after receipt of declaration of default, of the Surety's election either to remedy the default or defaults promptly or to perform the Contract promptly, time being of the essence. In said notice of election, the Surety shall indicate the date on which the remedy or performance will commence,
and it shall then be the duty of the Surety to give prompt notice in writing to the Owner immediately upon completion of (a) the remedy and/or correction of each default, (b) the remedy and/or correction of each item of rejected work, (c) the furnishing of each omitted item of work and (d) the performance of the Contract. The surety shall not assert solvency of its Principal as justification for its failure to give notice of election or for its failure to promptly remedy the default or defaults or perform the Contract.

3. Supplementary to and in addition to the foregoing, whenever the Owner shall notify the Surety that the Owner has notice that the Contractor has failed to pay any subcontractor, materialman, or laborer for labor or materials certified by the Contractor as having been paid for by the Contractor in accordance with said Contract, which said labor or materials have been included in a periodical application for payment and approved by the Engineer for payment and paid for by the Owner, the Surety shall, within twenty (20) days of receipt of such notice, cause to be paid any unpaid amounts for such labor and materials.

4. It is expressly agreed by the Principal and the Surety that the Owner if he desires to do so, is at liberty to make inquiries at any time of subcontractors, laborers, material men, or other parties concerning the status of payments for labor, materials, or services furnished in the prosecution of the work.

5. No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner named herein or the legal successors of the Owner.

Signed and sealed this _____ day of _____, 20____.

_____ _____
Principal Title

_____

_____ (Seal)
Surety

_____ _____
Witness Title

LABOR AND MATERIAL PAYMENT BOND

THIS BOND IS EXECUTED TOGETHER WITH ANOTHER BOND IN FAVOR OF THE OWNER AS OBLIGEE CONDITIONED UPON PERFORMANCE OF THE CONTRACT.
KNOW ALL MEN BY THESE PRESENTS:
That_____
(Legal title and address of the contractor)

as Principal, hereinafter called Principal, and _____
_____
(Legal title and address of the Surety)

as Surety, hereinafter called Surety, are held and firmly bound unto DOUGHERTY COUNTY BOARD OF COMMISSIONERS, as obligee, hereinafter called Owner, for the use and benefit of claimants as hereinafter defined, in the amount of _____ Dollars ($_____), to which payment Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bounded Principal has entered into a contract with Owner dated _____, 20__, for the construction of
_____

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal shall promptly make payment to all subcontractors and other persons for all labor and material supplied in the execution of the work provided for in said contract, then this obligation shall be void; otherwise, it shall remain in full force and effect.

It is agreed that this bond is executed pursuant to and in accordance with the provisions of Section 23-1705 et. Seq of the Code of Georgia, as amended by the act approved February 27, 1956, and is intended to be and shall be construed to be in compliance with the requirements thereof.

SIGNED AND SEALED this _____ day of _____ 20__.

In the presence of:

_____ (Seal)
PRINCIPAL

_____ _____
TITLE WITNESS

_____ (Seal)
SURETY

_____ _____
TITLE WITNESS

DOCO Drainage Improvements 2025
BID REFERENCE NO. 25-081

CONTRACT

THIS AGREEMENT, made as of the _____ day of_____20__, by and between Dougherty County Board of Commissioners (Party of First Part, hereinafter called the Owner) and _____, (Party of the Second Part, hereinafter called the Contractor).

WITNESSETH: That the said Contractor has agreed, and by these presents does agree with the said Owner, for the consideration herein mentioned in his bid and under the penalty expressed in Bond, hereto attached, to furnish all equipment, tools, and materials, skill and labor of every description necessary to carry out and complete in good, firm, and substantial workmanlike manner, the specified work in strict conformity with the Plans and Specifications hereinafter set forth which together with the foregoing bid made by the Contractor, the Notice to Contractors, Instructions to Bidders, General Conditions, Addenda, Special Provisions and this Agreement, shall all form essential parts of the Agreement. The work covered by this Agreement includes all work shown on Plans and Specifications and listed in the attached bid.

The Owner shall pay and the Contractor shall receive the **UNIT PRICES** stipulated in the Bid for **DOCO Drainage Improvements 2025** as full compensation for everything furnished and done by the Contractor under this Contract. The full sum of **$**_____ shall be paid in thirty (30) day increments in the manner and according to the terms specified in the Contract Documents, included in the Contractor's periodic estimate. If the Contractor shall not have submitted evidence satisfactory to the Owner that all payrolls, material bills, and other indebtedness connected with the work have been paid, the Owner may withhold, in addition to the retained percentages, such amount or amounts as may be necessary to pay just claims for labor, services rendered and materials in and about the work, and such amount or amounts withheld or retained may be applied by the Owner, to the payment of just claims.

It is agreed between the parties that if, at any time after the execution of the Agreement and the surety bonds hereto attached for its performance, the first party shall deem the surety or sureties upon such bond to be unsatisfactory, or, if for any reason, such bonds cease to be adequate to cover the performance of the work, the second party shall at its expense, within five (5) days after receipt of notice from the first party, furnish an additional bond or bonds in such form and amount, and with such surety or sureties as shall be satisfactory to the first party. In such event, no further payment to the second party shall be deemed to be due under this Agreement until such new or additional security for the performance of the work shall be furnished in manner and form satisfactory to the first party.

Contractor agrees that as to any actions or proceedings arising out or related to this agreement, any such proceedings shall be governed and determined by Georgia Law.

Contractor further agrees that as to any actions or proceedings arising out of or related to this agreement, any such action or proceeding shall be resolved only in an appropriate court located in Dougherty County, Georgia.

Contractor agrees to indemnify and hold harmless the County, its agents, officers, and employees, their successors and assigns, individually and collectively, with respect to all claims, demands or liability for any injuries to any person (including death) or damage to any property arising out of the activities of contractor or based on alleged negligence of contractor, its officers, agents, or employees and contractor shall defend against all such claims and pay all expenses of such defense, including attorney fees, and all judgments based thereon; provided that this obligation shall not extend to any damage, injury or loss due to the negligence of the County.

IN WITNESS WHEREOF the parties hereto have executed this Agreement **in duplicate** this ____ day of _____, 20____.

ATTEST:

_____
(CLERK)

(SEAL)

Dougherty County Board of Commissioners
Owner

By: _____

_____
PRINTED NAME

_____
TITLE

_____
CONTRACTOR

By: _____

_____
PRINTED NAME

_____
TITLE

_____
WITNESS