



Bid Documents

Contract A 2023 Whitesville Force Main I-85 Bores For the City of LaGrange, Georgia

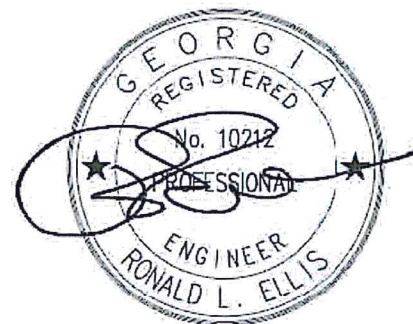
May 10, 2023

Prepared for:

City of LaGrange, Georgia
200 Ridley Avenue
LaGrange, Georgia 30240

Prepared by:

Ronald L. Ellis & Associates, Inc.
Consulting Engineers
P.O. Box 1150
Pelham, Alabama 35124



05/10/2023

**CITY OF LAGRANGE, GEORGIA
CONTRACT A
2023 WHITESVILLE FORCE MAIN I-85 BORES**

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**CITY OF LAGRANGE, GEORGIA
CONTRACT A
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Permit No. 1287199	I-85 Crossing for Three Electrical & One Telecom Conduit, HDPE DIPS, DR 11

DIVISION 0
BIDDING AND CONTRACT REQUIREMENTS

SECTION 00010

NOTICE TO CONTRACTORS

CONTRACT A

2023 WHITESVILLE ROAD FORCE MAIN IMPROVEMENTS: I-85 BORES

Sealed Proposals shall be addressed to Jeremy Andrews, Purchasing Agent of the City of LaGrange, and marked "Bid for Construction of Contract A - 2023 Whitesville Road Force Main Improvements: I-85 Bores." All Bids shall be received by The City of LaGrange, mail or in person at the City Hall, Office of Purchasing, Third Floor, 200 Ridley Avenue, LaGrange, Georgia 30240 until 2:00 p.m., local time on **Thursday, June 8, 2023**. The Bids will be publicly opened and read aloud.

The Work to be performed under Contract A - 2023 Whitesville Road Force Main Improvements: I-85 Bores includes bidding Horizontal Directional Drilling (HDD) Bores as depicted:

HDD Bore Method:

- 1) 432 LF of 20" HDPE DIPS DR 13.5 Casing, for two Force Mains,
- 2) 500 LF for both the 6" Force Main & the 4" Force Main, all HDPE DIPS DR 11, with End Seals,
- 3) 436 LF of 20" HDPE DIPS DR 13.5 Casing for three Electric Conduits & one Telecom Conduit,
- 4) 500 LF for each of three 4" Electric Conduits & one 2" Telecom Conduit, all HDPE DIPS DR 11, with End Seals,
- 5) 100 LF for Rock Clause – Provide the Rock Cost per LF above the No Rock Cost per LF as Bid in Items 1 & 3 above,
- 6) 1 LS Mobilization,
- 7) 1 LS Demobilization,
- 8) The Project Also Includes the required erosion control, clearing, grading, excavation, backfill, testing and all other appurtenances and accessories, refer to the Plans.

Bid Documents may be examined in the office of the Director of Utilities, LaGrange City Hall, Monday through Friday, 9:00 a.m. to 3:00 p.m. Contact Ronald L. Ellis, Ellis & Associates, Inc. at ron@rlellisco.com to obtain an electronic copy of Contract A – 2023 Whitesville Force Main I-85 Bores. All bidders should submit any and all questions concerning the Bid Documents to Ellis & Associates by email to: ron@rlellisco.com.

One contract shall be awarded covering all the work of this Contract and the maximum time of completion shall not exceed **120** consecutive calendar days from the commencement date established by the Notice to Proceed.

All proposals shall be accompanied by a Bid Bond in amount equal to five percent (5%) of the Bid Amount. The Bid Bond shall be forfeited to the City of LaGrange, Georgia, as liquidated damages if the BIDDER fails to execute the Contract and provide Performance and Payment Bonds within ten (10) days after being notified that they had been awarded the Contract.

A Performance Bond and Payment Bond such as described in Specification Sections 00610 and 00620 will be required of the successful BIDDER. The Performance Bond must be in the penal amount of 100% of the Contract price and the Payment Bond shall be in the penal amount of 100% of the Contract price.

Surety and insurance companies must have an AM Best rating of A-6 or greater, be listed in the Federal

Registry of Companies holding Certificates of Authority and Acceptable Sureties on Federal Bonds, be licensed by the Georgia Insurance Department and the Georgia Secretary of State to do business in the State of Georgia.

The award will be made to the low, responsive, responsible BIDDER. No bid may be withdrawn for a period of sixty (60) calendar days after the scheduled closing time for the receipt of bids. The City of LaGrange, Georgia, reserves the right to reject all bids, to waive informalities and to readvertise.

Additional Bid Information: The following Equipment & Materials will be furnished by the Owner for each of the Bid Methods:

1. 880 LF of 20" HDPE DIPS DR 13.5 Casing with End Seals
2. All 6", 4" & 2" HDPE DIPS DR 11 Pipe required for the Project

Patrick Bowie
Director of Utilities
City of LaGrange
City Hall
200 Ridley Avenue
LaGrange, Georgia 30240

END OF SECTION

SECTION 00100

INFORMATION TO BIDDERS

1. PREPARATION OF PROPOSALS

- A. Bidders shall use only the proposal forms provided in the documents or by Addendum. All blank spaces in these forms shall be filled in, in both words and figures where required. Written amounts shall govern in case of discrepancy between the amounts. **The entire Bid Document Set shall be submitted with the Bid.**
- B. Prices quoted shall be F.O.B. with freight and full insurance paid by Bidder, to the jobsite, in LaGrange, Georgia.
- C. The Bidder shall acknowledge receipt of all addendums in the proposal. Proposals without acknowledgment or without the addendum enclosed will be considered non responsive.
- D. **Each bid must be submitted in a sealed envelope bearing on the outside the name of Bidder, his address, and the name of the project for which the bid is submitted. Any bid which is not properly prepared and accompanied by required Bonds and Certifications may be rejected by the Owner.**

2. SUBMISSION OF PROPOSALS

- A. All Proposals must be submitted in tact not later than the time prescribed, at the place noted.

3. ADDENDA

- A. Any addenda issued by the Engineer during the period of bidding shall be included in the Proposal and in the Executed Contract. Such addenda shall become a part thereof and modify specifications and drawings accordingly.

4. BID SECURITY

- A. All Proposals shall be accompanied by a Bid Bond in amount equal to five percent (5%) of the Total Base Bid Amount. The Bid Bond shall be forfeited to the City of LaGrange, Georgia, as liquidated damages if the BIDDER fails to execute the Contract and provide Performance and Payment Bonds within ten (10) days after being notified that he had been awarded the Contract.

5. PERFORMANCE AND PAYMENT BONDS FOR CONTRACT

- A. A Performance Bond and Payment Bond such as described in Specification Sections 00610 and 00620 will be required of the successful Bidder. Performance Bond must be in the penal amount of 100% of the Contract price.
- B. Surety and insurance companies must have an AM Best rating of A-6 or greater, be listed in the Federal Registry of Companies holding Certificates of Authority and Acceptable Sureties on Federal Bonds, be licensed by the Georgia Insurance Department and the Georgia Secretary of State to do business in the State of Georgia.

6. FAILURE TO EXECUTE THE CONTRACT AND FURNISH BONDS

- A. The Bidder who has a Contract awarded to him and who fails to promptly and properly execute the Contract and furnish the required bond(s) shall forfeit the bid security that accompanied his bid, and the bid security shall be retained as liquidated damages by the Owner, and it is agreed that this said sum is a fair estimate of the amount of damages the Owner will sustain in case the Bidder fails to enter into a Contract and furnish the bond(s) as hereinbefore provided.

7. WITHDRAWAL OF BIDS

- A. No bid may be withdrawn for a period of sixty (60) days after the scheduled closing time for the receipt of bids.

8. LICENSES AND PERMITS

- A. The successful low Bidder shall obtain and pay for all licenses and permits required by the State, County, and City authorities having jurisdiction over the various phases of this Contract.

9. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

- A. Refer to Section 00800.

10. TAXES

- A. Contractors shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work. The proposal prices shall include the total cost of all such taxes.

11. METHOD FOR AWARD OF CONTRACT

- A. If at the time this contract is to be awarded, the lowest Total Base Bid submitted by a responsible bidder does not exceed the amount of funds then estimated by the Owner as available to finance the Contract. The Contract will be awarded based on the Total Base Bid.

12. CONTRACT WEEKLY WORK SCHEDULE

- A. The time for completion of this project is based on a standard weekly work schedule of Monday through Friday. No work shall be scheduled or performed on Saturday, Sunday or Holidays, unless emergency work is approved by the Owner.

END OF SECTION

SECTION 00300

PROPOSAL

MADE BY _____

ADDRESS _____

TO: The City of LaGrange, Georgia

The undersigned, as Bidder, proposes and agrees, if this Bid is accepted, to enter into a Contract with The City of LaGrange, Georgia in the form of Contract specified and shown in the attached Contract Documents, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation, and labor necessary to complete the construction of the Work described in the Notice To Contractors, and in the Contract Documents attached hereto, which are hereby referred to and made a part of the same extent as if fully set out herein, and in full and complete accordance with the shown, noted described and reasonably intended requirements of the Plans, Specifications and Contract Documents, to the full and entire satisfaction of the Owner. The Bidder understands that no money will be allowed for extra Work except as set forth in the attached Contract Documents.

The Bidder declares that he has examined the site of the Work, that he has fully informed himself of conditions that would affect the proposed Work, that, prior to the tender of his bid, he has examined the Plans, Specifications and Contract Documents for the Work and has read all special instructions and provisions contained in the Documents, and that he has satisfied himself with respect to the quality and extent of Work to be performed.

The Bidder declares that he understands that, when quantities of Work for which unit price bids are requested are shown in the Notice to Contractors for Bids and in the Proposal, such quantities are approximate only and are subject to either increase or decrease, that, should the quantities of any of the Work items be increased, the Bidder proposes to perform the additional Work at the unit prices bid by him, that should the quantities of any of the Work items be decreased, payment will be made only for the actual quantities of Work performed and such payment will be based upon the unit prices bid by him, and that he shall make no claim for profits anticipated on the decrease in quantities of Work. Actual quantities will be paid for as the Work progresses, in accordance with the provisions of the Contract, and such quantities shall be subject to final measurements and determinations made upon completion of the Work. **Refer to Section 01152, I.10 Explanation of Bid Items and Payment, for a description of the bid items and the unit bid price for each item. Also, refer to Section 00800, I.C. for a description of Equipment & Materials furnished by the Owner for this Contract.**

The Bidder agrees to perform the Work described in the Contract Documents for the following Unit prices and/or Lump Sum prices on the Base Bid Form included in Section 00300.

The Bidder understands that the Owner reserves the right to reject any or all bids, to waive any informality in any bid, and to accept any bid considered to be advantageous to the Owner.

The Bidder agrees that his bid shall be valid for a period of sixty (60) calendar days after the date set for receipt of bids, and shall not be withdrawn for a period of sixty (60) calendar days after the date set for receipt of bids.

The Bidder has attached hereto a Bid Bond executed by a Surety Company authorized to do business in the State of Georgia (with valid Power-of-Attorney attached) made payable to The City of LaGrange, Georgia in the amount of 5% of his bid amount.

The Bidder agrees that, should he be notified that his Bid on the Work has been accepted, he will, within ten (10) days from receipt of such Notice of Award, execute the Contract bound herein, and furnish the Bonds and Certification of Insurance Coverage, in all accordance with the requirements of the Contract Documents.

The Bidder further agrees that, in case of failure on his part to execute said Contract, and to furnish all Bonds required by the Contract Documents, within ten (10) consecutive calendar days after receipt of Notice of Award of Contract to him, the monies payable to the Obligee of his Bid Bond, in accordance with the terms and conditions of the Bond, shall be paid to the Owner as liquidated damages for the delay and additional expense to the Owner caused by such failure on the part of the Bidder.

The Bidder hereby agrees that, should the Work under the Contract be awarded to him, he will commence Work under this Contract on or before a date to be specified in the "Notice to Proceed" issued by the Owner, and that he will fully complete the Contract within the consecutive calendar days specified in Section 00800 - Supplementary Conditions or pay liquidated damages at the rate per consecutive day specified in Section 00800 - Supplementary Conditions.

The undersigned bidder states that he fully understands the meaning of "low, responsive, responsible Bidder", as defined in these Documents, and that these criteria will be applied in the evaluation of this Bid.

The Bidder acknowledges receipt of the following Addenda:

The undersigned, as Bidder, hereby declares that the name or names of the only person or persons interested in this Proposal, as principal or principals, is or are, as herein below set out and that no person other than that or those herein below stated has any interest in this Proposal, or in the Contract to be entered into; that this Proposal is made without connection with any other person, firm or corporation making a proposal; and that it is in all respects fair and in good faith, without collusion or fraud.

Following are the names and addresses of all persons, firms, and corporations interested in the foregoing bid:

Name and Address of all interested Persons, Firms, Corporations, Partners (if Partnership) and Members (if Limited Liability Company).	_____	_____
	Bidder's Name	
	_____	_____
	Signature	
_____	_____	_____
	Title	
_____	_____	_____
	Address	
_____	_____	_____
	City	
	State	Zip Code
_____	_____	_____
	Phone No.	
_____	_____	_____
	Date	
_____	_____	_____
	ATTEST	
	(Seal If Bid By Corporation)	

BASE BID FORM
Contract A - 2023 Whitesville Road Force Main Improvements: I-85 Bores
LaGrange, Georgia

Item A - Each of the following Base Bid Items includes the Construction, Testing & Placing into Service of each Base Bid Item Complete per the Plans, Specifications & Permit Documents.

Item B - Refer to Sections 00010 & 00800 for a list of Materials furnished by the Owner for Contract A.

Item C - All required clearing & erosion control is included in the Bid.

Item No.	Description	Quantity	Unit	Unit Price	Total Price
Contract A - 2023 Whitesville Road Force Main Improvements: I-85 Bores					
1	Install 20" HDPE DIPS DR 13.5 Casing, per Contract A for Two Force Mains, a 6" and 4" HDPE Pipe, No Rock	432	LF	\$ _____	\$ _____
2	Install the Two Force Mains, a 6" and 4" HDPE Pipe, both DIPS DR 11 and install End Seals	500	LF	\$ _____	\$ _____
3	Install 20" HDPE DIPS DR 13.5 Casing, per Contract A for Three 4" Electric Conduits and One 2" Telecom Conduit, No Rock	436	LF	\$ _____	\$ _____
4	Install Three 4" Electric Conduits and One 2" Telecom Conduit, All HDPE DIPS DR 11 and install End Seals	500	LF	\$ _____	\$ _____
5	Rock Clause - Provide the Rock Cost per LF above the No Rock Cost per LF as Bid in Items 1 & 3 above.	100	LF	\$ _____	\$ _____
6	Mobilization	1	LS	\$ 5,000.00	\$ 5,000.00
7	Demobilization	1	LS	\$ 5,000.00	\$ 5,000.00
TOTAL BASE BID AMOUNT - CONTRACT A (Total of Items 1-7)					\$ _____

(In Case of Conflict, The Amount Shown in Words Shall Govern)

Dollars and Cents

SECTION 00410

BID BOND

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

_____ as Principal, and _____

_____ as Surety, are hereby held and firmly bound unto the City of LaGrange, Georgia, as OWNER in the penal sum equal to 5% of the Total Base Bid Amount for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves our heirs, executors, administrators, successors and assigns.

Signed, this _____ day of _____, 2023.

The condition of the above obligation is such that whereas the Principal has submitted to The City of LaGrange, Georgia, a certain bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for Contract A - 2023 Whitesville Force Main I-85 Bores.

NOW, THEREFORE,

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

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

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

_____(L.S.)
PRINCIPAL

SURETY

By _____

SEAL

END OF SECTION

SECTION 00500

CONTRACT

THIS AGREEMENT made this _____ day of _____, 2023, by and between _____ a corporation organized and existing under the laws of the State of _____ hereinafter called the CONTRACTOR, and The City of LaGrange, Georgia hereinafter called the OWNER.

WITNESSETH, that the CONTRACTOR and the OWNER for the considerations stated herein mutually agree as follows:

1. The CONTRACTOR shall furnish all materials, equipment, labor, supervision, technical personnel, machinery, tools, and services to perform and complete all Work required for the construction of Contract A - 2023 Whitesville Force Main I-85 Bores, at or in the vicinity of LaGrange, Georgia; and shall perform such work in strict accordance with these Contract Documents, which are attached hereto, and are a part of this Contract.

2. The CONTRACT DOCUMENTS shall consist of the following:

- a) Notice to Contractors
- b) Proposal
- c) Bid Bond
- d) Contract
- e) Performance Bond
- f) Payment Bond
- g) General Conditions
- h) Supplementary Conditions
- i) General Requirements
- j) Technical Specifications
- k) Contract Drawings
- l) Addenda (as numbered and dated below)
 - Addendum No. __, dated _____
 - Addendum No. __, dated _____
 - Addendum No. __, dated _____

3. The CONTRACTOR shall commence Work to be performed under this Contract on the date specified in a written Notice to Proceed issued by the OWNER, and shall be substantially complete within 105 consecutive calendar days and shall fully complete all Work hereunder within 120 consecutive calendar days from said date.

4. The OWNER hereby agrees to pay in lawful money of the United States, and the CONTRACTOR agrees to accept the sum of \$ _____ as payment to perform all of the Work described in the Contract Documents, subject to the additions and deletions as provided in the Specifications or Proposal.

5. The OWNER will pay the CONTRACTOR in the manner, at such times, and in such amounts as set forth in the General Conditions and General Requirements.

6. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns. IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement shall be deemed an original on the date first above written.

(SEAL)

ATTEST

Name _____

Title _____

OWNER:

City of LaGrange, Georgia

By _____

Name Meg Kelsey

Title City Manager

CONTRACTOR:

(SEAL)

ATTEST

Name _____

Title _____

By _____

Name _____

Title _____

Address _____

END OF SECTION

SECTION 00610

PERFORMANCE BOND

STATE OF GEORGIA)

COUNTY OF TROUP) ss:

CITY OF LAGRANGE)

KNOW ALL MEN BY THESE PRESENTS, that we, _____ as, Principal, and _____, as Surety, are held and firmly bound unto The City of LaGrange, Georgia in the full sum of _____ Dollars (\$ _____) for the payment of which well and truly be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, by these presents.

WHEREAS, the above bound Principal has entered into a contract with The City of LaGrange, Georgia, dated the _____ day of _____, 2023, for the construction of Contract A - 2023 Whitesville Force Main I-85 Bores.

NOW THEREFORE, the conditions of this obligation are such that if the above bound Principal shall faithfully and fully comply with the terms and conditions of said contract and such alterations or additions as may be made therein or in the plans and specifications, and shall indemnify and save The City of LaGrange, Georgia harmless against any claims for using any form of material, process, composition or anything which is patented, and likewise indemnify and save the Owner or the City, if the City is not the Owner, harmless against all claims for damages by reason of any default or negligence, want of skill or care on part of said Principal or Agents in and about the performance of said Contract, and shall comply with all laws pertaining to said Work, and shall comply with and perform any guarantee provided for in said Contract, then this obligation shall be void, otherwise of full force and effect.

And the Surety of this bond, for value received, agrees that no change, extensions of time, alterations or additions thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alterations or additions to the terms of the contract or the Work or to the plans and specifications.

It is agreed that this bond is executed pursuant to and in accordance with the provisions of the Official Code of Georgia Annotated, as Amended, including, but not limited to, O.C.G.A. § 36-91-1 et seq., and is intended to be and shall be construed as a bond in compliance with the requirements thereof.

IN WITNESS WHEREOF, the Principal and the Surety have caused these presents to be duly signed and sealed this _____ day of _____, 2023.

(As to Principal) _____ L.S.

Signed, sealed and delivered
in the presence of:

_____ BY: _____

_____ **TITLE:** _____

(As to Surety) _____ L.S.
Surety

Signed, sealed and delivered
in the presence of:

_____ **BY:** _____

_____ **TITLE:** _____

APPROVED AS TO FORM

COUNTERSIGNED

_____ BY: _____
City Attorney Resident Agent

END OF SECTION

SECTION 00620

PAYMENT BOND

STATE OF GEORGIA)

COUNTY OF TROUP) ss:

CITY OF LAGRANGE)

KNOW ALL MEN BY THESE PRESENTS, that we, _____
_____ as Principal, and
_____ as Surety,
are held and firmly bound unto The City of LaGrange, Georgia, in the full sum of _____
_____ Dollars (\$ _____) for the use and protection
of said Owner or City if the City is not the Owner, and all subcontractors and all persons supplying labor,
materials, machinery and equipment for the performance of the work provided for in the Contract hereinafter
referred to, for the payment of which well and truly to be made we bind ourselves, our heirs, executors,
administrators, successors and assigns, jointly and severally, by these presents.

WHEREAS, the above bound Principal has entered into a contract with The City of LaGrange, Georgia
dated the _____ day of _____, 2023 for the construction of Contract A - 2023 Whitesville
Force Main I-85 Bores.

NOW THEREFORE, the conditions of this obligation are such that if the above bound Principal shall
promptly pay all subcontractors and all other persons supplying labor, materials, machinery and equipment
furnished for the performance of the Work provided for by said contract and such alterations or additions as
may be made therein or in the plans and specifications, then this bond to be void; otherwise, of full force and
effect.

And the Surety of this bond, for value received, agrees that no change, extensions of time, alterations or
additions to the terms of this Contract or to the Work to be performed thereunder or the specifications
accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice
of any such change, extension of time, alterations or additions to the terms of the Contract or the Work or to
the plans and specifications.

It is agreed that this bond is executed pursuant to and in accordance with the provisions of the Official
Code of Georgia Annotated, as Amended, including, but not limited to, O.C.G.A. § 36-91-1 et seq., and is
intended to be and shall be construed to be a bond in compliance with the requirements thereof.

IN WITNESS WHEREOF, the Principal and the Surety have caused these presents to be duly signed and sealed this _____ day of _____, 2023.

(As to Principal) _____ L.S.

Signed, sealed and delivered
in the presence of:

_____ BY: _____

_____ **TITLE:** _____

(As to Surety) _____ L.S.
Surety

Signed, sealed and delivered
in the presence of:

_____ BY: _____

_____ **TITLE:** _____

APPROVED AS TO FORM

COUNTERSIGNED

_____ BY: _____
City Attorney Resident Agent

END OF SECTION

SECTION 00700

GENERAL CONDITIONS

1. CONTRACT DOCUMENTS

The Notice to Contractors, Instructions to Bidders, Proposal, Bid Bond, Contract, Performance and Payment Bonds, Certificate of Insurance, Notice of Award, Notice to Proceed, Change Order Form, Contractor's Affidavit to Accompany Partial Payment Estimate, General Conditions, Supplemental Conditions, and Information, Drawings, Addenda and Specifications shall all be binding on the Contractor, and shall be fully a part of the Contract as if thereto attached or therein repeated in words and figures.

2. DEFINITIONS OF TERMS

Whenever in the Contract Documents the following terms or pronouns referring to them are used, the intent and meaning shall be interpreted as follows which shall be applicable to both the singular and plural thereof:

- A. The CONTRACT shall mean the Contract executed by the Owner and the Contractor, of which these General Conditions form a part; the terms CONTRACT and AGREEMENT are synonymous.
- B. The terms OWNER and CONTRACTOR shall mean the respective parties to the Contract; the OWNER being a public or quasi-public body or authority, corporation, association, partnership, or individual for whom the Work is to be performed; the CONTRACTOR being the individual, partnership, limited liability company, or corporation with whom the Owner has executed the Contract.
- C. The term ENGINEER shall mean Ellis & Associates, Inc. successor, or duly authorized representative.
- D. ADDENDA shall mean written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the CONTRACT DOCUMENTS, DRAWINGS, and SPECIFICATIONS, by additions, deletions, clarifications or corrections.
- E. BIDDER shall mean any individual, partnership, limited liability company, or corporation submitting a BID for the WORK.
- F. BONDS shall mean Bid, Performance, and Payment Bonds and other instruments of security, furnished by the CONTRACTOR and his surety in accordance with the CONTRACT DOCUMENTS.
- G. CHANGE ORDER shall mean a written order to the CONTRACTOR authorizing an addition, deletion or revision in the WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE or CONTRACT TIME.
- H. CONTRACT DOCUMENTS shall mean the contract, including NOTICE TO BIDDERS, INSTRUCTIONS TO BIDDERS, PROPOSAL BID BOND, PAYMENT BOND, PERFORMANCE BOND, CERTIFICATE OF INSURANCE, NOTICE OF AWARD, NOTICE TO PROCEED, CHANGE ORDER, CONTRACTOR'S AFFIDAVIT TO ACCOMPANY PARTIAL PAYMENT ESTIMATE, GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, DRAWINGS, ADDENDA and

SPECIFICATIONS.

- I. CONTRACT PRICE shall mean the total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.
- J. CONTRACT TIME shall mean the number of calendar days stated in the CONTRACT DOCUMENTS for the completion of the WORK.
- K. DRAWINGS shall mean the part of the CONTRACT DOCUMENTS which show the characteristics and Scope of the Work to be performed and which have been prepared or approved by the ENGINEER.
- L. FIELD ORDER shall mean a written order effecting a change on the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the ENGINEER to the CONTRACTOR during construction.
- M. NOTICE OF AWARD shall mean the written notice of the acceptance of the BID from the OWNER to the successful BIDDER.
- N. NOTICE TO PROCEED shall mean written communication issued by the OWNER to the CONTRACTOR authorizing him to proceed with the WORK and establishing the date of commencement of the WORK; the terms NOTICE TO PROCEED and WORK ORDER are synonymous.
- O. PROJECT shall mean the undertaking to be performed as provided in the CONTRACT DOCUMENTS.
- P. PROPOSAL shall mean the offer or BID of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed; the terms BID and PROPOSAL are synonymous.
- Q. RESIDENT PROJECT REPRESENTATIVE shall mean the authorized representative of the OWNER who is assigned to the PROJECT site or any part thereof.
- R. SHOP DRAWING shall mean all drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, SUPPLIER or distributor, which illustrate how specific portions of the WORK shall be fabricated or installed; the terms SHOP DRAWINGS and SUBMITTALS are synonymous.
- S. SPECIFICATIONS shall mean a part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.
- T. SUBCONTRACTOR shall mean individual, partnership, limited liability company, or corporation having a direct contract with the CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.
- U. SUBSTANTIAL COMPLETION shall mean that date as certified by the ENGINEER when the construction of the PROJECT or a specified part thereof is efficiently completed, in accordance with the CONTRACT DOCUMENTS, so that the PROJECT or specified part thereof can be utilized for the purposes for which it is intended.
- V. SUPPLIERS shall mean any person, supplier or organization who supplies materials or equipment for the

WORK, including that fabricated to a special design, but who does not perform labor at the site.

- W. WORK shall mean labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.
- X. WRITTEN NOTICE shall mean any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party to his authorized representative on the WORK.

3. DRAWINGS AND SPECIFICATIONS

- A. The intent of the Drawings and Specifications is that the Contractor shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the Work in accordance with the Contract Documents and all incidental work necessary to complete the Project in an acceptable manner, ready for use, occupancy or operation by the Owner.
- B. The Engineer will furnish to the Contractor at cost, sets of documents that are required by the Contractor for the proper handling of the Work.
- C. The Contractor shall keep one set of the Drawings and Specifications on the site of the Work. This set shall be kept current by the addition of all reviewed changes, addenda and amendments thereto. The Drawings shall be kept current for AS BUILT DRAWINGS for the Project and must be submitted to the Engineer at the Project Completion.
- D. The Drawings and Specifications are intended to be explanatory to each other, but should any discrepancy appear or any misunderstanding arise as to the importance of anything contained in either, the Engineer shall make the necessary interpretation. Corrections of errors or omissions in the Drawings or Specifications may be made by the Engineer when such corrections are necessary for the proper fulfillment of their intention as construed by the ENGINEER.
- E. All work or materials shown on the Drawings and not mentioned in the Specifications, or any work specified and not shown on the Drawings, shall be furnished, performed, and done by the Contractor as if same were both mentioned in the Specifications and shown on the Drawings.
- F. Should the Contractor in preparing his bid find anything necessary for the construction of the project that is not mentioned in the Specifications or shown on the Drawings, or find any other discrepancy in the Contract Documents, he shall notify the Engineer so that such discrepancies may be corrected by addendum prior to the bid opening. Should the Contractor fail to notify the Engineer of such discrepancies, it will be assumed that his bid included everything necessary for the complete construction in the spirit and intent of the designs shown.
- G. The Contractor may be furnished additional instructions and detail Drawings, by the Engineer, as necessary to carry out the Work required by the Contract Documents. The additional Drawings and instructions thus supplied will become a part of the Contract Documents. The Contractor shall carry out the Work in accordance with the additional detail Drawings and instructions.

4. DISCREPANCIES IN DRAWINGS, SPECIFICATIONS AND SHOP DRAWINGS

- A. In case of a discrepancy on the Drawings, figure dimensions shall govern over scale dimensions and large scale drawings shall govern over small scale drawings. In case of a discrepancy in the Specifications and Contract Documents, detailed technical specifications and special or supplementary conditions shall govern over general conditions and other sections of the Contract Documents. In case of a discrepancy between the Drawings and Specifications, the Specifications shall govern; addenda shall govern over all Drawings, Specifications and Contract Documents. Supplemental Conditions shall govern over these General Conditions.
- B. In case of discrepancy between the shop drawings and the requirements of the Drawings, Specifications and Contract Documents, the provisions of the Drawings, Specifications and Contract Documents, the provisions of the Drawings, Specifications, and Contract Documents shall prevail, even though the shop drawings have been reviewed by the Engineer, unless the conflict therein has been specifically waived in writing by the Engineer.
- C. Any discrepancies found between the Drawings and Specifications and site conditions or any inconsistencies or ambiguities in the Drawings or Specifications shall be immediately reported to the Engineer, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. Work done by the Contractor after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the Contractor's risk.

5. PREPARATION PROPOSAL FORM

- A. Bidder's Proposal must be submitted on the Bid Form furnished him by the Engineer. Bid Forms are not transferable, and will not be removed from the bound Bid Document Book.
- B. The Bidder must specify in figures, without interlineation, alterations or erasures, a single Lump Sum price and/or Unit Prices, as set forth in the Bid Form, to completely construct the Work described and shown in the Specifications and Drawings. In the case discrepancy between the prices shown in figures and in words, the words will govern.
- C. The Proposal will be properly signed by the Bidder. If the Bidder is an individual, his name and his post office address must be shown; if a firm, partnership or limited liability company, the name and post office address of each member of the firm, partnership or limited liability company must be shown; if a corporation, the president, vice-president or secretary will sign and affix the corporate seal, or if the person signing the Proposal is an agent, the said agent must attach written authorization from the president, vice-president or secretary of the Corporation, and the Proposal must show the name of the Corporation, the name of the state under the laws of which the corporation is chartered, and the names, titles and business addresses of the officers. Corporate information required above will be typed on a separate sheet and submitted with Proposal materials at time of bidding.

6. IRREGULAR PROPOSALS

- A. Proposals may be rejected if they contain any omissions, alterations of form, additions not called for, conditional bids, alternate bids unless called for, incomplete bids, erasures, or irregularities of any kind. Proposals in which the unit or lump sum prices are obviously unbalanced may be rejected.

7. PROPOSAL GUARANTY

- A. No Proposal will be considered unless accompanied by cash or a properly certified check or bid bond made payable to the Owner in the amount indicated, and as provided in the Notice to Contractors. Cashiers' checks will not be accepted in lieu thereof.

8. DELIVERY OF PROPOSALS

- A. Each Proposal for each Contract will be placed, together with the Proposal Guaranty, in a sealed envelope on the outside of which is written in large letters, the name and address of the Bidder, the location and description of the Work as is designated in the Notice to Contractors, and the date and time of the bid opening. Proposals may be delivered in person or by registered mail. When sent by registered mail, the sealed Proposal, marked as indicated above, will be enclosed in another envelope for mailing. Proposals will be received by the Owner, unless otherwise provided, until the hour of the date set in the Notice to Contractors for the opening thereof.

9. WITHDRAWAL OR REVISION OF PROPOSALS

- A. A Proposal may be withdrawn at any time prior to the hour fixed in the Notice to Contractors for opening of Proposals, provided a request in writing, executed by the Bidder or his duly authorized representative, is filed with the Owner prior to that time. When such Proposal is reached, it will be returned to the Bidder unopened. Telegrams or written communications to correct Proposals will be accepted and the Proposal corrected in accordance therewith if received by Owner prior to the hour set in the Notice to Contractors for the opening of bids. No Proposal can be withdrawn, modified or corrected after the hour set for opening such Proposals.

10. OPENING OF PROPOSALS

- A. Proposals will be opened and read publicly at the time and place indicated in the Notice to Contractors. Bidders or their authorized agents are invited to be present.

11. DISQUALIFICATION OF BIDDERS

- A. Any Bidder using the same or different names for submitting more than one Proposal upon the Work will be disqualified from further consideration on the Work. Evidence that any Bidder is interested, as a principal, in more than one Proposal for the Work contemplated (for example, bidding in a partnership; as a joint partnership or association and as a partnership association, or individuals) will cause the rejection of any such Proposal.
- B. If there is any reason to believe that collusion exists among the Bidders, any or all Proposals may be rejected and those participating in such collusion may be barred from submitting bids on the same or other Work.

12. CONSIDERATION OF PROPOSALS

- A. After the proposals are opened and read, the approximate estimated quantity of each item multiplied by the unit price bid for that item and the products calculated and the gross sums bid obtained in each of the acceptable Proposals, the Contract Bid Prices will be compared and the results of such comparison will be made public. Until the final award of the Contract, however, the Owner reserves the right to reject any

and all Proposals, and to waive technical errors, if, in the judgment of the Engineer, the best interest of the Owner will thereby be promoted. A Proposal will not be considered unless signed by the Bidder or his authorized agent and accompanied by a certified check, cash or bid bond.

13. AWARD OF CONTRACT

- A. The award of the Contract, if it be awarded, will be by the Owner to the low responsive, responsible Bidder whose Proposal will have complied with all the requirements necessary to render it formal. The successful Bidder will be notified by letter mailed to the address shown on his Proposal, that his bid has been accepted and that he has been awarded the Contract.

14. CANCELLATION OF AWARD

- A. The Owner reserves the right to cancel the award of any Contract at any time before the execution of the said Contract by all parties without any liability against the Owner.

15. APPROVAL OF CONTRACT

- A. The Owner will approve the Contractor's bond and complete the execution of the Contract. No contract will be binding upon the Owner until it has been executed by the Owner.

16. FAILURE TO EXECUTE CONTRACT

- A. Should the successful Bidder or Bidders to whom the Contract is awarded fail to execute a Contract and furnish acceptable Contract security, the Owner will retain from the Proposal Guaranty, if it be certified check, or recover from the principal on the sureties if the guaranty be a bid bond, the difference between the amount of the Contract as awarded and the amount of the Proposal of the next lowest Bidder. If no other Bids are received, the full amount of the Proposal Guaranty will be retained or recovered as liquidated damages for such default. Any sums so retained or recovered will be the property of the Owner.

17. ALTERATION OF DRAWINGS AND CHARACTER OF WORK

- A. The Engineer may without notice to the Surety and without change in any bid unit prices, make alterations in the Drawings or in the nature of the Work which he may consider necessary or desirable during the progress of the Work to complete fully and acceptably the proposed construction. Alterations provided for herein will not be considered as a waiver of any of the conditions of the Contract or invalidating any of the provisions thereof, and the Contractor will perform the Work as increased or decreased and no allowances will be made for anticipated profits. The Engineer may, under this reservation, increase or decrease any or all of the quantities of any bid items as set out in the Proposal and such increase or decrease will not be considered as a waiver of any conditions of the Contract or Contract Bonds.

18. EXTRA WORK

- A. At any time during the Progress of the Work performed under this Contract, the Engineer may order other work or materials incidental thereto. If any such work and material is not listed as a pay item with a contract unit bid price, or compensation therefor is not included in the contract unit prices bid for other pay items under the items of the Contract, it will be designated as Extra Work, and will be performed by the Contractor as directed, provided, however, that before Extra Work is started the Contractor will comply with SECTION 01035, Change Order Procedures.

19. COMPLIANCE WITH LAWS, ORDINANCES AND REGULATIONS

- A. The Contractor will at all times observe and comply with all Federal, State and local laws and ordinances, orders, decrees, codes, and regulations existing or enacted subsequent to the execution of the Contract which in any manner affect the prosecution of the Work. The Contractor and his Surety will indemnify and save harmless the Owner, Engineer and all of their representatives or agents against any suits or actions of any kind or nature brought, or which may be brought, against them for any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, codes, or decree, whether by himself, his employees or his sub-contractors and their employees.

20. LICENSES AND PERMITS

- A. The Contractor will procure all licenses and permits, pay all charges, and give all notices necessary and incident to the due and lawful prosecution of the Work. Contractors are advised to contact the authorities having jurisdiction in the area of the Work as to the costs associated with building permits, licenses and inspection fees required for this Project.

21. PATENTED DEVICES, MATERIALS AND PROCESSES

- A. The Contractor will pay the costs of all royalties, license fees and patent fees involved by use, or manner of use, in the work of all designs, devices, materials, equipment or processes, and the Contractor will provide for such use or manner of use by legal agreement with the Owner of the patent or a duly authorized licensee of such Owner. All such costs referred to hereinabove will be included in the price or unit prices bid for the Work under this Contract.
- B. The Contractor and the Surety will indemnify and save harmless the Owner and Engineer and all their representatives from any and all suits, costs, penalties, or claims for infringement by reason of the use of any such patented design, device, material, or process, or any trademark or copy right in connection with the Work agreed to be performed under the Contract; and will indemnify the Owner, the Engineer and all their representatives for any costs, expenses and damages which it or they may be obliged to pay any reason of such infringement or alleged infringement at any time during the prosecution or after the completion of the Work.

22. SAFETY

- A. The Contractor will at all times comply with the requirements of "Safety and Health Regulations for Construction" of the Occupational Safety and Health Administration, U.S. Government Department of Labor, and of other authorities having jurisdiction in Safety Matters. In the prosecution of his work the Contractor will observe all precautions and safety provisions as outlined in the "Manual Of Accident Prevention in Construction", as published by the Associated General Contractors Of America, to the extent that such provisions are not inconsistent with applicable laws or regulations.
- B. Under the terms and conditions of this Contract, the Engineer shall not act as Safety Engineer or Safety Supervisor, since such responsibility remains solely with the Contractor. The Engineer shall not be responsible for establishing safety procedures or for prescribing safety measures for the Contractor.
- C. The Contractor will be solely and completely responsible for conditions of the job site, including safety of persons and property affected directly or indirectly by his operations during the performance of Work; and this requirement will not be limited in application to normal working hours, but will apply

continuously twenty-four (24) hours per day until acceptance of work by the Owner, and thereafter will be subject to the terms and conditions of the Guaranty.

- D. The duty of the Engineer to review the Work in order to determine its acceptability in accordance with the Specifications, and to conduct construction review of the Contractor's performance for the benefit of the Owner, will not be construed as a duty to review the adequacy of the Contractor's safety measures on or near the construction site and/or to direct the actions of the Contractor's employees in the performance of the Work as such a duty is not included in the responsibilities of the Engineer.

23. PUBLIC CONVENIENCE

- A. The Contractor shall provide and maintain for the safe use of such temporary roads as may be necessary to provide convenient access to driveways, houses, buildings, or other property abutting the Work. Where temporary bridges are necessary for the safe use of traffic and pedestrians, these bridges shall be constructed at the expense of the Contractor.
- B. The Contractor's work shall not cause undue or prolonged blocking of business establishments.
- C. Materials and equipment stored on the Right-of-Way or Project Site shall be so placed and the Work at all times shall be so conducted as to insure minimum danger and obstruction to the traveling public.
- D. During operations where traffic is being permitted to pass through construction, the Contractor shall provide a smooth, even surface that will provide a satisfactory passageway for use of traffic. The road bed shall be sprinkled with water if necessary to prevent a dust nuisance, provided the dust nuisance is a result of the Work.
- E. Fire hydrants shall be accessible at all times to the Fire Department. No material or other obstructions shall be placed closer to a fire hydrant than permitted by ordinances, rules or regulations or within fifteen (15) feet of a fire hydrant, in the absence of such ordinances, rules or regulations. On all work with City or Town Limits, the Contractor shall give the Chief of the Fire Department at least twenty-four (24) hours notice in writing before it becomes necessary to obstruct a cross street.

24. WORK AT RAILROAD CROSSINGS

- A. No work of any character shall be commenced on railroad Right-of-Way until the Railroad Company has issued a permit to the Contractor. The Railroad Company has been duly notified by the Contractor in writing (with a copy forwarded to the Engineer) of the date he proposes to begin work and until an authorized representative of the Railroad Company is present, unless the Railroad Company waives such requirement.
- B. All work performed by the Contractor within the Right-of-Way limits of the Railroad shall be subject to the inspection and approval of the chief engineer of the Railroad Company, or his authorized representative and any precautions considered necessary by said chief engineer to safeguard the property, equipment, employees and passengers of the Railroad Company shall be taken by the Contractor without extra compensation.
- C. The Contractor shall, without extra compensation, take such precautions and erect and maintain such tell-tale or warning devices as the Railroad Company considers necessary to safeguard the operations of its trains. The temporary vertical and horizontal clearances specified by the chief engineer of the Railroad

Company in approving these shall be maintained at all times. No steel, brick, pipe or any other loose material shall be left on the ground in the immediate vicinity of the railway track. The Contractor shall so plan his work so as not to delay Railroad Company operations in making track changes or placing temporary or permanent structures, or work incidental thereto.

- D. Whatever insurance and bond requirements that may be stipulated by the railroads prior to or in connection with the issuance of permits to the Owner or Contractor shall be complied with and paid for by the Contractor. All such insurance and/or bonds shall specifically provide full coverage for both the Owner and Engineer, in addition to such other coverage as may be required.

25. USE OF EXPLOSIVES

- A. When the use of explosives is necessary for the prosecution of the Work, the Contractor shall use utmost care to prevent danger to life or property. Blasting operations shall be conducted under the most careful supervision by the Contractor. In populated areas and at any point of special danger the Contractor shall use suitable mats or other approved methods to smother the blasts.
- B. The Contractor and his Surety shall indemnify and save harmless the Owner, the Engineer and all their representatives from all claims for damages arising out of the use of explosives.

26. PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE

- A. The Contractor shall not enter upon private property for any purpose without first obtaining permission from the Owners and lessees. The Contractor shall be responsible for the preservation of all public and private property, monuments, highway signs, telephone lines, other utilities, et cetera, along and adjacent to the Work; shall use every precaution necessary to prevent damage to pipes, conduits, and other underground structures; and shall protect carefully from disturbance or damage all land monuments and property marks until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed. The Contractor must obtain all necessary information in regard to existing utilities and shall give notice in writing to the Owners or the proper authorities in charge of streets, gas, water pipes, electric, sewers and other underground structures, including conduits, railways, poles and pole lines, manholes, catch basins, fixtures, appurtenances, and all other property that may be affected by the Contractor's operations, at least forty-eight (48) hours before his operations will affect such property. The Contractor will not hinder or interfere with any person in the protection of such work or with the operation of utilities, at any time. When property or the operation of railways, telephone lines, telegraph lines, or other public utilities are endangered, the Contractor will at his own expense, maintain flagmen or watchmen and the other necessary precautions to avoid interruption of service or damage to life or property, and he will promptly repair, restore, or make good any injury or damage caused by his operations in an acceptable manner. The Contractor must also obtain all necessary information in regard to the installation of new cables, conduits, et cetera, and make proper provision and give proper notification, so that these can be installed at the proper time without delay to the Contractor or unnecessary inconvenience to the Owner.
- B. When the Work involves the undercutting of any buildings along the Work, the Contractor must give property owners and lessees due and sufficient notice of the undercutting and the Contractor will adequately support such buildings. The Contractor and his Surety will hold the Owner and Engineer and their representatives harmless from any damages resulting from undercutting any such buildings.
- C. The Contractor will not remove, injure, cut or destroy trees, shrubs, plants or grass that are to remain on

the site of the Work or those which are privately owned, without proper authority. Unless otherwise provided in the Special Provisions, or the Proposal, the Contractor will replace and replant all plants, shrubs and grass and restore the grounds back to its original good condition to the satisfaction of the Owner and the property owner. The Contractor will assume the responsibility of replanting and guarantee that the plants, shrubs and grass will be watered, fertilized and cultivated until they are in a growing condition. No direct payment will be made for removing and replanting of trees, shrubs, plants or grass unless such items are set forth in the Proposal.

- D. When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect or otherwise of the Contractor, he will make good such damage or injury in an acceptable manner.

27. RESPONSIBILITY FOR DAMAGE CLAIMS

- A. The Contractor will indemnify and save harmless the Owner, the Engineer, and their officers and employees, from all suits, actions, or claims of any character brought because of any injuries or damages received or sustained by any person, persons, or property on account of the operations of the said Contractor, in the construction work involved in this Contract, or on account of or in consequence of any neglect in safeguarding the Work; or through use of any unacceptable materials in constructing the Work; or because of any act or omission, neglect, or misconduct of said Contractor, or because of any claims or amounts recovered from any infringements of patent, trademark or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act" or any other law, ordinance or decree; and so much of the money due the said Contractor under and by virtue of his Contract as will be considered necessary by the Owner for such purpose, may be retained for the use of the Owner; or, in case no money is due, his Surety will be held until such suits, action or actions, claim or claims for injuries or damages as aforesaid will have been settled and suitable evidence to that effect furnished to the Owner and Engineer. The Owner or Engineer will not be liable to the Contractor for damages or delays resulting from Work by third parties or by injunctions or other restraining orders obtained by third parties.
- B. The Contractor will report to the Engineer and Owner all accidents occurring on the Work within forty-eight (48) hours after their occurrence. The report will contain the complete information on the accident, including names, addresses, or persons involved, and names and addresses of witnesses. Accidents involving Workmen's Compensation claims need not be reported.

28. INSURANCE

- A. The Contractor will not commence any work on the Project until he obtains, at his own expense, all required insurance; and the Contractor will not, at one time, conduct any operations on the Project or associated with the Project unless such operations are covered by the specified insurance. Such insurance must have the approval of the Owner as to limit, form and amount. The Contractor will not permit any subcontractor to commence work on the Project until the same insurance coverage requirements have been complied with by such subcontractor(s) with limits to be determined by the Contractor. However, the failure of the subcontractor(s) to carry adequate insurance will in no way affect the coverage afforded by the Owner by the prime Contractor's insurance. The insurance coverage will be maintained throughout the full period of the Contract. Any insurance bearing on adequacy of the performance will be maintained after completion of the project for the full guaranty period.
- B. Proof of insurance coverage specified herein will be furnished the Owner in the form of copies of the

policies. The Owner, however, in lieu of copies of policies, and at his discretion, accept certificates issued by the insurance carrier and showing such policies to be in force for specified periods. The Contractor will furnish to the Owner, prior to the expiration date of any policy, renewal certificates showing that policies will remain in force throughout the full period of the Contract. The insurance carrier will be satisfactory to the Owners. No insurance coverage will be canceled or materially changed without prior written notice having been given to the Owner and then only after arrangements satisfactory to the Owner have been made to ensure insurance coverage until the Project has been completed and accepted. All Contractors in a joint venture will have insurance coverage through the same company; or, if that is not practical, then the Owner must be furnished an endorsement which allocates primary and secondary payment responsibilities.

- C. **The Owner, its governing body, its elected officials, employees, and agents and the Engineers will also be named "additional insured" in all insurance policies provided by the Contractor and his subcontractor(s) as respects all work performed under this Contract.**
- D. In the event that the Contractor or his Surety is prevented by law or by charter from naming the Owner and his agents, and the Engineer as insured in the policies providing the coverage listed herein, the Contractor will purchase and maintain during the life of this agreement an Owner's and Contractor's Protective Liability Insurance Policy in an amount equal to the maximum amount specified under the various coverage including Umbrella Excess Liability over primary insurance; and the named insured in the Owner's and Contractor's Protective Liability Insurance Policy will be the Owner, its governing body, its elected officials, employees and agents and the Engineer. The insurance will protect the Owner and his agents, and the Engineer, from any claim or loss arising from any act of the Contractor or his subcontractors, or any failure to act on the part of the Contractor or his subcontractors, during the performance of work under this agreement.
- E. The types of insurance that the Contractor will be required to obtain and maintain for the full period of the contract are listed below.
1. **Workmen's Compensation and Employer's Liability Insurance** will be in strict accordance with the requirements of the current and applicable Workmen's Compensation Laws of the State of the Project. The insurance will cover all of the Contractor's employees employed or associated with the Project; and where any part of the Work is subcontracted, the Contractor will require subcontractor to provide similar Workmen's Compensation and Employer's Liability Insurance for all employees of the subcontractor unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in hazardous work under this Contract is not protected under the Workmen's Compensation Statute, the Contractor will provide, and will cause such subcontractor to provide, adequate coverage for the protection of all employees on the Project not otherwise protected under applicable provisions of the Statutes relating to Workmen's Compensation and Employer's Liability Insurance. The minimum limits of coverage will be as follows:

a.	State	Statutory
b.	Applicable Federal	Statutory
c.	Employers Liability	\$1,000,000
d.	Voluntary Compensation	\$1,000,000
e.	Broad Form All State Endorsement	
 2. **Comprehensive General Liability Insurance** will protect the Contractor and any subcontractor performing work under this Contract from any claims for bodily injury, sickness or disease, death, personal injury, and property damages which may arise either directly or indirectly out of, or in

connection with the performance of work under this Contract. The Comprehensive General Liability Insurance Coverage will include: Premised - Operations; Independent Contractor's Protective; Explosion, Collapse, and Underground Property Damage; Broad Form Property Damage; Contractual Liability (written and oral); and fellow Employee Coverage. The minimum limits of coverage will be as follows:

a.	General Liability	\$1,000,000
b.	Damage to Rented Premise	\$100,000
c.	Medical Expense	\$10,000
d.	Personal & ADV Injury	\$1,000,000
e.	General Aggregate	\$2,000,000
f.	Products - Comp/OP Agg	\$2,000,000

3. **Personal Injury** (with Employment Exclusion deleted).
 minimum limits \$500,000 Annual Aggregate

4. **Comprehensive Automobile Liability Insurance** (Owned, Non-owned, Hired) will protect the Contractor and any subcontractor performing work under this contract from any claims for bodily injury, death, and property damage which may arise either directly or indirectly out of, or in connection with, the performance of work under this contract. The minimum limits of coverage will be as follows:

Bodily Injury	\$1,000,000	Each Occurrence
Property Damage	\$1,000,000	Each Occurrence
or		
Bodily Injury and Property Damage	\$1,000,000	Each Occurrence

5. **Umbrella Excess Liability over all Primary Insurance** as Scheduled Above

minimum limits	\$5,000,000	Each Occurrence
	\$5,000,000	Aggregate

6. **Property Insurance** Unless otherwise specified, the Contractor will provide All Risk Course of Construction Insurance (excluding floods and earthquake) to cover the interests of all Contractor and subcontractors of any tiers. The Contractor and subcontractors of any tiers will be responsible for all risks of physical loss to the work.

- The total amount of the insurance will be the amount of the Contract.
- The policy or policies will be endorsed to waive all rights of subrogation among, between and to each insured under the policy or policies. The waiver, however, will apply only to the policy, or policies. and not to another part or parts of this Contract.
- Any claim coming under the terms and conditions of the policy or policies, will be immediately reported to the Engineer.

7. **All of the above policies will have a 30-day written Notice of Cancellation.**

The specified limits and coverage in any of the policies for the various types of insurance will not be construed as limiting the Contractor's responsibility to provide contractual coverage sufficiently broad so as to ensure the provisions of the Articles of these General Conditions relating to

Indemnity, or limiting the responsibilities of the Contractor as outlined under the aforesaid Articles.

Nothing contained in these insurance requirements will be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from his operation under this Contract.

Insurance carried by the Contractor on the work will not relieve the Contractor of the responsibility for the protection of all materials and all work until the Project has been accepted by the Owner. Any loss, including insurance deductibles surrendered on the Project, will be borne by the Contractor and/or the insurance company providing the coverage for the Contractor; and the Owner will not be liable for any cost or replacement of lost or damaged work or material.

The cost of insurance required herein will be included in the lump sum price or unit prices bid on other items, and no additional amount will be paid.

29. INDEMNITY

- A. The Contractor will at all times release, indemnify and save harmless the Owner and their Engineer, their commissioners, officers, agents, servants and employees from and against all liability, claim of liability, loss, claim of loss, any and all suits, actions, legal proceedings, claims, demands, damages, costs, orders (including consent and clean-up orders) and expenses (including engineering and attorney fees) arising from personal injury, including death or disease, and property damage, including environmental contamination or impairment, occurring from any cause whatsoever in any work involved in the Contract, or from the acquisition, permitting, or operations will at his expense defend on behalf of the Owner and their Engineer, their officers, agents, servants and employees, either or all, any suit or administrative action brought against them or any of them, arising from any such cause.**

30. USE OF SECTIONS OF WORK

- A. Whenever, in the opinion of the Engineer, the Work or any portion thereof, is in suitable condition for use, it will be put into service but such use will not be held to be in any way an acceptance of the Work or any part of it, or as a waiver of any of the provisions of the Specifications and Contract. When such use is required or permitted by the Engineer, the Contractor will make such provisions for the safety of the public as herein specified, and such use will not relieve the Contractor of his liability and responsibility during the period the Work is so opened prior to Final Acceptance. Necessary repairs or renewals on any of the Work, after being placed in use, due to defective materials or Work, natural causes or to ordinary wear and tear, pending completion and acceptance of the Contract will be performed at the expense of the Contractor.**

31. CONTRACTOR'S RESPONSIBILITY FOR WORK

- A. Until final acceptance of the Work by the Engineer as evidenced by approval of the final estimate, the Work will be in the custody and under the charge and care of the Contractor and he will take every necessary precaution against injury or damage to any part thereof by the action of the elements or from any other cause, whether arising from execution or from the non-execution of the Work, unless otherwise provided for elsewhere in the Specifications or Contract. The Contractor will rebuild, repair, restore and make good, without extra compensation, all injuries or damage to any portion of the Work occasioned by any of the above causes before its completion and acceptance, and will bear the expenses thereof. In case of suspension of the Work from any cause whatever, the Contractor will be responsible for all materials and equipment and will properly store them, if necessary, and will provide suitable shelter from**

damage and will erect temporary structures where necessary.

32. CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES:

- A. At points where the Contractor's operations are adjacent to other properties of railway, telegraph, telephone, and power companies, or are adjacent to other property, damage to which might result in very considerable expense, loss or inconvenience, work will not be commenced until all arrangements necessary for the protection thereof have been made.
- B. The Contractor will be solely and directly responsible to the Owners and operators of such properties for any damage, injury, expense, loss, inconvenience or delay, or for any suits, actions, claims of any character brought on account of any injuries or damages which may result from the carrying out of the Work to be done under this Contract, and, if required, he will give bond or furnish Protective Public Liability and Property Damage Insurance in an amount specified to each corporation, company, partnership, or individual owning or operating any of the properties affected in guarantee of this responsibility.
- C. The Contractor will cooperate with the Owners of any underground or overhead utility lines in their removal and rearrangement operations in order that these operations may progress in a reasonable manner, and that duplication of rearrangement work may be reduced to a minimum, and that services rendered by these parties will not be unnecessarily interrupted.
- D. In the event of interruption to sewer, gas, water or utility services as a result of accidental breakage or as a result of being exposed or unsupported, the Contractor will promptly notify the proper authority. The Contractor will be financially responsible for the restoration of service and will cooperate with the said authority in the restoration of service as promptly as possible. In no case will the interruption be allowed to exist outside of working hours.

33. FURNISHING RIGHT-OF-WAY

- A. The Owner will be responsible for securing all necessary Right-of-Way on private property.

34. LIABILITY OF PUBLIC OFFICIALS

- A. In carrying out any of the provisions of these specifications, or in exercising any power or authority granted to them by or within the scope of the Contract there will be no liability upon Owner, Engineer, or their authorized representatives, either personally or as officials of the Owner, it being understood that in such matters they act solely as agents and representatives of the Owner.

35. NO WAIVER OF LEGAL RIGHTS

- A. The Owner or the Engineer will not be precluded or stopped by any measurement estimate, or certificate made or given by either of them or by any representative or employee of the Owner or Engineer, before or after the completion and acceptance of the Work and payment therefore, pursuant to any measurement, estimate or certificate, from showing the true and correct amount and character of the Work performed and materials furnished by the Contractor; or from showing, at any time, that any such measurement, estimate, or certificate is untrue or incorrectly made in any particular instance; or from showing at any time that the Work or materials, or any part thereof, do not conform in fact to Specifications and Contract. The Engineer will have the right to reject the whole or any part of the aforesaid Work or materials should the said measurements, estimate or payment be found, or be known, to be inconsistent with the terms of

the Contract, or otherwise improperly given; and the Owner will not be precluded from demanding and recovering from the Contractor and his Surety such damages as it may sustain by reason of the Contractor's failure to comply with the terms of the Specifications and Contract. Neither the acceptance by the Engineer, or any representative, or employee; nor any certificate by the Engineer for payment of money; nor any payment for, nor acceptance of, the whole or any part of the Work by the Owner or Engineer, nor any extension of time; nor any possession taken by the Owner or Engineer or their representatives or employees, will operate as a waiver of any portion of the Contract or of any power herein reserved by the Owner or of any right to damages herein provided, nor will any breach of the Contract be held to be a waiver of any other or subsequent breach.

36. PROTECTION OF THE OWNER, AGENTS OF THE OWNER, WORKMEN AND THE PUBLIC

- A. The Contractor and the superintendent are requested to carefully read the Articles of the General Conditions relating to protection of the Owner, agents of the Owner, workmen, and the public, such as Insurance; Indemnity; Licenses and Permits; Compliance with Laws, ordinances and Regulations; Safety; Public Convenience; etc. This request is made to stress the importance of safe prosecution of the Work, and does not imply that the Contractor and his Superintendent should not be completely familiar with all Articles of the General Conditions and all other provisions of the Contract Documents.

37. SUBLETTING OR ASSIGNING OF CONTRACT

- A. The Contractor will not sublet, assign, transfer, convey, sell or otherwise dispose of any portion of the Contract, his right, title or interest therein, or his power to execute such Contract, to any person, firm or corporation without written consent of the Engineer and such written consent will not be construed to relieve the Contractor of any responsibility for the fulfillment of the Contract. Unless otherwise stipulated, the Contractor will perform with his own organization, and with the assistance of workmen under his immediate superintendence, work of a value not less than fifty (50%) per cent of the value of all work embraced in the Contract.
- B. A subcontractor will be recognized only in the capacity of an employee or agent of the Contractor and his removal may be required by the Engineer, as in the case of an employee.

38. NOTICE TO PROCEED

- A. After the Contract has been executed, the Engineer will issue the Contractor a written "Work Order". This "Work Order" will be issued within ten days from the time of Contract execution unless a longer time is mutually agreed upon by Owner and Contractor.
- B. Time of Beginning Work: The "Work Order" will stipulate that the time limit under the Contract will begin ten (10) calendar days after date of issuance of "Work Order". The Contractor may begin work within this ten (10) day period or thereafter provided the proof of insurance requirements of these Specifications are met. The Contractor will not commence work until advised by the Engineer that the insurance policies are in order in accordance with the requirements of this Section.

39. CONTRACT TIME

- A. The Contractor will be allowed for completion of work under this Contract, the number of consecutive Calendar days which are stated in Section 00800, which will be known as the "Contract Time". The Contract Time will begin as provided in "Notice to Proceed". The Project will be considered complete when the Engineer's final inspection shows no outstanding Work items.

40. EXTENSION OF THE CONTRACT TIME

- A. Extension of Contract Time will be granted by the Engineer, with approval of Owner based on negotiations. Requests for Extensions of Contract Time resulting from events or situations beyond the control of the Contractor must be submitted to the Engineer within ten (10) days of the date of said event or situation.

41. FAILURE TO COMPLETE WORK WITHIN CONTRACT TIME

- A. Time is an essential element in the Contract. Should the Contractor, or in case of a default, the Surety fail to complete the Work within the time stipulated in the Contract, or within such extra times as may be allowed herein above provided, liquidated damages in the amount stated in Section 00800 will be imposed upon the Contractor for failure to complete. This assessment will begin at the end of the Contract Time.
- B. Liquidated Damages Defined: Liquidated damages, assessed as provided in these Specifications, is not a penalty, but is intended to compensate the Owner for the actual cost incurred by the Owner by reason of such delay in completing the Work in the Contract Time contemplated when the Contract Time was agreed upon in the Contract.
- C. If the project is not completed within the Contract Time, as determined by the Engineer, the amount set out above will be deducted from the Contractor's net monthly estimate beginning with the end of the Contract Time.
- D. In the event that any net monthly estimate of the Contractor will not be sufficient to pay the liquidated damages as provided herein, the Contractor herein agrees and will be required at the end of each monthly estimate period to deposit with the Trustees of the bank as specified by the Owner any deficit that is not covered by a deduction from the Contractor's net estimate. These deductions and deposits will continue to be made until the project is completed.
- E. In the event that said deposits are not made by the Contractor then the Owner will call upon the Surety under this Contract.

42. PROSECUTION OF WORK

- A. The Contractor will begin the Work to be performed under the Contract in accordance with the requirements set out above and he will give the Engineer definite notice of his intention to start work at least seven (7) days in advance of beginning work. During the Progress of the work the Contractor will notify the Engineer at least twenty-four (24) hours before he expects to be ready to undertake particular features of construction such as placing concrete in order that the Project Representative may be present.
- B. The Contractor must continuously and diligently prosecute the work in logical order and manner. The Contractor will employ an ample force of men and provide construction plant and equipment properly adapted to the Work and of sufficient capacity and efficiency to accomplish the Work in a safe and workmanlike manner at the rate of Progress necessary to insure its completion within the time set forth in the Contract. Each class of work will be expected to Progress from the date it is begun until completed. All plant and equipment will be maintained in good working order and provision will be made for immediate emergency repairs.

- C. All work in Progress will receive the personal attention either of the Contractor or of a competent and reliable superintendent who will have full and final authority to act for him. The Contractor will notify the Engineer in writing, stating the name of the person authorized to act as superintendent.
- D. Should the prosecution of the Work be discontinued by the Contractor, with the consent of the Engineer, the Contractor will notify the Engineer in writing at least twenty-four (24) hours before resuming operations.

43. WORK SEQUENCE

- A. The Contractor is cautioned that it may be necessary for the Contractor to construct the facilities out of an orderly sequence. No extra payment whatsoever will be allowed the Contractor for shut-downs, skips, or any other delays caused by the Owner. If, in the opinion of the Engineer, delays occasioned by the Owner through no fault of the Contractor are encountered, the time allowed for completing the system may be extended through negotiation. The Engineer's decision in such cases will be, and is hereby agreed to by the Contractor, final.

44. METHODS AND EQUIPMENT

- A. The methods and appliances used, the labor employed and the machinery and equipment used, will be of sufficient size and in such mechanical condition as to meet the requirements and produce a satisfactory quality and quantity of work, and will be adequate to complete the Contract within the time specified in the Contract.
- B. In case the actual Progress should fall behind the estimated Progress at any time, or should it become apparent that the Contractor will be unable to complete the Contract at the time and in the manner specified in the Contract, the Engineer may require that additional labor and equipment meeting with his approval be placed on the Work.
- C. Should the Contractor fail to furnish suitable or sufficient tools, machinery, equipment or forces for the proper execution of the Work, the Engineer may withhold all estimates which are or may become due until his orders are complied with, or the Contract may be annulled as hereinafter provided.

45. TEMPORARY SUSPENSION OF WORK

- A. The Engineer will have the authority to suspend Work wholly or in part for such period or periods as he may deem necessary, due to unsuitable weather, or other essential conditions, which he considers unfavorable for the suitable prosecution of the Work, or for failure on the part of the Contractor to carry out orders given, or to perform any provision of the Contract or on account of any other conditions, which in his opinion make it impracticable to secure satisfactory Work. No additional compensation will be paid the Contractor on account of such suspension. The Contractor will immediately respect the written order of the Engineer to suspend the Work wholly or in part. The Contractor will not suspend the Work wholly or in part. The Work will be resumed when conditions are favorable and methods are corrected, as ordered by the Engineer.
- B. Should the Progress of the Work be stopped by a temporary injunction, court restraining order, process or judgment of any kind directed to the Contractor, then such period or delay will not be legal grounds for an extension of Contract time by the period of such delay nor will the Owner be liable to the Contractor on account of such delay or termination of the Work.

- C. If for any reason it should become necessary to stop Work for an indefinite period, the Contractor will store all materials and equipment in such manner that they will not become damaged in any way, and throughout the period of suspension of Work he will put into effect the provisions of Section 01710 - Cleaning.

46. DEFAULT OF CONTRACT

- A. If the Contractor fails to begin the Work under Contract within the time provided, or fails to perform the Work with sufficient workmen, equipment or materials to insure its prompt completion, or performs the Work unsuitably, or neglects or refuses to remove materials or perform anew such work as will be rejected as defective and unsuitable, or discontinues the prosecution of the Work, or from any other cause whatsoever does not carry on the Work in an acceptable manner, or becomes insolvent or is adjudicated a bankrupt, or commits any act of bankruptcy or insolvency, or allows any final judgment to stand against him unsatisfied for a period of ten (10) days, the Owner may give notice in writing by registered mail to the Contractor and the Surety of such delay, neglect or default. If within ten (10) days after such notice the Contractor does not proceed to remedy to the satisfaction of the Owner the fault specified in said notice, or the Surety does not proceed to take over the Work for completion under the direction of the Engineer, the Owner will have full power and authority, without impairing the obligation of the Contract or the Contract Bonds, to take over the completion of the Work; to appropriate or use any or all material and equipment on the ground that may be, in the opinion of the Engineer, suitable and acceptable; to enter into agreements with others for the completion of the Contract according to the terms and provisions thereof or to use such other methods as in his opinion may be required for the completion of the Contract. The Contractor and his Surety will be liable for all costs and expenses incurred by the Owner, in completing the Work and also for all liquidated damages in conformity with the terms of the Contract. In case the sum of such liquidated damages and the expense so incurred by the Owner is less than the sum which would have been payable under the Contract if it had been completed by the Contractor or his Surety, the Contractor or his Surety will be entitled to receive the difference; and in case the sum of such liquidated damages exceeds the sum which would have been payable under the Contract, the Contractor and his Surety will be liable and will pay to the Owner the amount of such excess. Notice to the Contractor will be deemed to be served when delivered to the man in charge of any office used by the Contractor, his representative at or near the Work, or by registered mail addressed to the Contractor at his last known place of business.

47. CONTRACT GUARANTY

- A. All work covered by the Proposal Items under this Contract, Supplementary Conditions and "Extra Work" as defined herein, will be fully guaranteed by the Contractor for a period of one year from the effective date of the final acceptance of the Project by the Owner. This guarantee will cover any and all defects in workmanship and/or materials that may develop in this specified time.
- B. All equipment of any nature furnished by the Contractor and incorporated in the Work as defined above will carry the same guarantee as outlined above.
- C. All defects and/or failures in workmanship, materials or equipment that develop within the guarantee period will be promptly repaired or replaced by the Contractor at his expense and to the full satisfaction of the Owner.

- D. Where experience requirements for manufacture of specified items of equipment are waived during the bidding or shop drawing submittal stages of this contract, the approved supplier will be required to provide the Contractor/Owner with an extended guaranty of not less than three years instead of that provided for above.

END OF SECTION

SECTION 00800

SUPPLEMENTARY CONDITIONS

1. PROJECT DESCRIPTION

- A. The Work to be performed by the Contractor for Contract A - 2023 Whitesville Force Main I-85 Bores will consist of Unit Price Base Bid Items and Lump Sum Base Bid Items as depicted in Section 00300. The Work will consist of the construction of the Base Bid Items described in Section 01152, 1.10 Explanation of Bid Items and Payment, please review before preparing the Base Bid on this Project.
- B. The work to be done will consist of furnishing all materials, supplies and equipment; performing all labor and services incidental to or necessary for the complete construction of the project in accordance with the Drawings and Specifications, and the maintenance of each completed portion of the work until final acceptance of the entire project by the Owner.
- C. The following Equipment will be furnished by the Owner for each of the Bid Methods for Contract A – 2023 Whitesville Force Main I-85 Bores.
 - 1. 880 LF of 24" Casing Pipe, 0.375" wt., with all Casing Spacers & End Seals.
 - 2. 880 LF of 20" HDPE DIPS DR 13.5 Casing with all End Seals.
 - 3. All 6", 4" & 2" HDPE DIPS DR 11 Pipe required for the Project.

2. CONTRACT PLANS

- A. The work will be performed in accordance with these Specifications and Contract Drawings which are incorporated herein as part of the Contract and which are identified by the numbers and titles with addendums as shown on the Index of the Drawings.

3. DATES FOR FINAL COMPLETION

- A. The Contractor will start work within ten (10) days after written notice is issued from the Owner to proceed, as specified in the General Conditions and will be substantially complete within 105 consecutive calendar days and will completely finish all work under this contract within 120 consecutive calendar days after the date specified in the Notice to Proceed. The Contractor should account for normal rain during the anticipated construction time period. No additional days will be granted for rain within the normal rainfall amount. If necessary, time extensions will be granted for delays above normal rainfall.

4. LIQUIDATED DAMAGES FOR FINAL COMPLETION

- A. Time is of the essence in this Contract. Liquidated damages for failure to complete the work within the specified time defined in Paragraph 3.A. of this Section, as provided in the General Conditions are hereby and agreed upon at the rate of a thousand dollars (\$1000.00) per day of delay of completion.

5. SAFETY AND HEALTH REGULATIONS

- A. The Contractor will comply with the Department of Labor Safety and Health Regulations for Construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91-596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL 91-54).

6. SURFACE RESTORATION AND FINAL CLEAN-UP

- A. Contractor will assume full responsibility for replacing surface features to their original, or better, condition. This is to include, but not be limited to, fences, shrubs, lawns, flowers, or any other landscaping materials, culverts, driveways, mailboxes, road signs, and utilities.
- B. All damaged trees will be properly trimmed and all scars painted with an approved tree paint.
- C. Throughout the progress of the work the Contractor will keep the construction area, including storage areas used by him, free from accumulations of waste material or rubbish and will keep his materials and equipment in a neat and orderly manner. Immediately upon completion of any section or work and before payment has been made he will remove from the site all construction equipment, temporary structures, and debris and will restore the site to a neat, workmanlike condition.
- D. The Contractor will make a final clean-up of the site. He will remove all rubbish and surface material and leave the ground in presentable shape at least comparable with condition in which it was prior to construction.

7. EROSION AND SEDIMENT CONTROL

- A. The Contractor shall comply with the Soil Erosion and Sediment Control Plan per these Plans and Specifications and shall conform to all State of Georgia rules, regulations and laws governing Soil Erosion and Sediment Control.
- B. The Contractor must continually maintain the Soil Erosion and Sediment Control measures throughout the construction time frame and will make all modifications and additions as required by the State of Georgia, Owner, and Engineer.

8. CONTRACTOR ACTIVITIES, CHARACTER OF EMPLOYEES AND EQUIPMENT

- A. The Contractor will comply with all federal, state and local laws, regulations and ordinance governing the employment of labor and the payment of wages thereto for work performed under this Contract. In general, the Contractor will give preference to qualified local residents but in no case will he employ any person whose age or physical condition is such as to make his employment dangerous to the health or safety of himself or of others employed on the work.
- B. All workmen will have sufficient skill and experience to properly perform the work assigned to them. On any special or skilled work or in any trade, only qualified, careful and efficient mechanics will be used.
- C. Any employee of the Contractor who may be adjudged by the Owner to be incompetent, untrustworthy or otherwise undesirable will be removed from the work immediately upon request of the Owner and will not be reemployed on the work thereafter.
- D. The Contractor will furnish such equipment as is considered necessary for the prosecution of the work in an acceptable manner and at a satisfactory rate of progress.

9. TRAFFIC CONTROL

- A. The Contractor will, at his own expense, maintain sufficient warning lights, traffic signs, traffic cones, etc. on or along any or all portions of any street or alley which, due to the Contractor's operations, are

not in their normal condition to handle vehicular or pedestrian traffic. All traffic signs, cones, warning lights, barricades, detour signs, flagmen and their location(s), number, sequence, size, etc., will all be in accordance with the Georgia Department of Transportation Traffic Control Procedures.

- B. The Contractor will maintain access for local residents, businesses, and emergency vehicles at all times. The Contractor will coordinate his work with the adjacent property Owners and businesses.
- C. The Contractor will comply with all the traffic requirements of local and state governments. The cost of any traffic control and traffic maintenance by local or state governments will be considered incidental to the work.

10. EXISTING CONDITIONS AND EXISTING UTILITIES

- A. The Engineer has attempted to shown on the Plans all pertinent surface features and utilities as existed at the time of the survey. The Contractor is urged to view the construction route and to identify any new or overlooked features. No claim for extra work will be allowed for any feature not shown on the plans.
- B. Only approximate utility locations are shown on the Plans. The Contractor will be responsible for notifying the utility company, for determining the precise utility location and having the utility company mark the utility location in the field, and for coordinating his work with the utility company. The Contractor will notify the utility a minimum of 48 hours prior to doing any work in the area of the utility. No excavation work will proceed until all utilities have been located and marked. No extra payment will be made for any deviation from proposed alignment as shown on the Plans (or increased depth) to avoid existing utilities.

11. AGREEMENTS WITH PROPERTY OWNERS

- A. Any agreement made by the Contractor with any property Owner in connection with construction of this project will be made in writing, a copy of which will be supplied to the Engineer. Upon satisfactory completion of the terms of the agreement the Contractor will obtain a written release from the property Owner, a copy of which will also be supplied to the Engineer.

12. CHEMICALS

- A. All chemicals used during Project construction or furnished for Project operation, whether herbicide, pesticide, disinfectant, polymer, reactant, or of other classifications, must show approval of either E.P.A. or U.S.D.A. Use of such chemicals and disposal of residues shall be in strict conformance with instructions of the chemical manufacturer.

13. MATERIALS AND EQUIPMENT FOR THE PROJECT

- A. The Owner and Engineer have selected materials and equipment as made by certain manufactures to be used in the Project. These manufactures are named in the Detailed Specifications and their names are followed by the term, "or Approved Equal". The lump sum and/or unit price bids shown in the Proposal shall be for these materials and equipment of the specified manufacturers named in the Detailed Specifications.

END OF SECTION

DIVISION 1
GENERAL REQUIREMENTS

SECTION 01010

SUMMARY OF WORK

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. The Work comprises Contract A - 2023 Whitesville Force Main I-85 Bores located in LaGrange, Georgia for the City of LaGrange.
- B. The Work to be done under the Agreement will consist of the complete construction of each and every unit described in the Advertisement for Bid and Contract Documents together with all authorized alterations. The Contractor will furnish, unless definitely and expressly provided to the contrary in the Contract Documents, all materials, implements, machinery, equipment, tools, supplies, transportation, and labor necessary to the prosecution and completion of the Work.
- C. The Engineer may, without notice to the Surety and without change in the unit prices bid, make alterations in the Drawings or in the nature of the Work which he may consider necessary or desirable during the progress of the Work to complete fully and acceptably the proposed construction. Alterations provided for herein will not be considered as waiving any of the General Conditions or Supplementary Conditions or invalidating any of the provisions thereof. The Contractor will perform the Work as increased or decreased and no allowances will be made for anticipated profits. The Engineer may, under this reservation, increase or decrease any or all of the quantities of the unit-price items as set out in the bid. Such increases or decrease will not be considered as a waiver of any General Conditions, Supplementary Conditions, or Bonds.
- D. The Engineer will not be responsible for the means, methods, techniques, sequences, or procedures of construction selected by the Contractor or the safety precautions and programs incidental to the work of the Contractor.
- E. It is the sole responsibility of the Contractor to initiate, maintain and supervise all safety precautions and programs in connection with the Work.

1.02 RELATED REQUIREMENTS

- A. Conditions of the Contract: Additional responsibilities of all parties.

1.03 CONTRACTS

- A. Perform the Work under a separate lump sum and unit price contract with Owner.

1.04 WORK BY OTHERS - None.

1.05 WORK SEQUENCE - Not Used - See Specification Section 00800.

1.06 CONTRACTOR'S USE OF PREMISES

- A. Contractor will limit his use of the premises for Work and for storage, to allow for:
 - 1. Work by other Contractors.
 - 2. Owner occupancy.

- B. Coordinate use of premises under direction of Engineer.
- C. Assume full responsibility for the protection and safekeeping of Products under this Contract, stored on the site.
- D. Move any stored Products, under Contractor's control, which interfere with operations of the Owner or separate contractor.
- E. Obtain and pay for the use of additional storage or work areas needed for operations.
- F. Contractor will at all times conduct his operations so as to insure the least inconvenience to the general public including local property owners.
- G. Rights-of-Way and Right-of-Way stipulations from local property owners will be constraints.

1.07 OWNER OCCUPANCY

- A. None.

END OF SECTION

SECTION 01050

FIELD ENGINEERING

PART 1 - GENERAL

1.01 CONSTRUCTION GRADES AND STAKES

- A. The Engineer will establish bench marks and a base line for the proposed Improvements, all permanently and conveniently located, which will govern the elevations and locations of all portions of the Work as shown on the Drawings.
- B. The Contractor will satisfy himself to the accuracy of all measurements before proceeding with the Work.
- C. The Contractor will do all the detail survey layout work of locating the individual points, elevations, structures and other details for the construction of the proposed project.

1.02 CONTRACTOR'S RESPONSIBILITY FOR PRESERVING CONTROL POINTS

- A. The Contractor will be held responsible for the preservation of all stakes and marks.
- B. Any survey controls established by the Engineer that was destroyed by the Contractor, either carelessly or willfully, and requiring replacement will be restored by the Engineer's forces at his current surveying rate at the Contractor's expense.

END OF SECTION

SECTION 01150

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 STANDARD MEASURES AND WEIGHTS

- A. All Unit Price work acceptably completed under the Contract will be measured by the Engineer according to United States standard measures and weights, unless otherwise provided on the drawings or in the Special Provisions. No local rules or customs will be adhered to or considered.

1.02 SPECIFIC PAYMENT ITEMS RELATING TO THIS CONTRACT

- A. General
1. This article is intended to clarify and describe the method of measurement and the basis of payment for the items listed in the Proposal. Item Number refers to the specific item as shown in the Proposal. When the word "include, includes, included or including" is used in this article, it will be defined as "includes, but not limited to."
 2. The Basis of Payment will be either Unit Price Bid or Lump Sum Bid as listed in the Proposal. It will be understood that the Unit Price Bid or the Lump Sum Bid will be considered as payment in full, for furnishing all labor, equipment, tools and supplies, and for furnishing and installing all materials necessary to do the Work for each Item in the Proposal.
 3. **Refer to Section 01152, Part 1.10 & Part 1.11 for an explanation of the various Bid Items and how payment will be determined.**

END OF SECTION

SECTION 01152

APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Submit Applications for Payment to Engineer in accord with the schedule established by Conditions of the Contract and Agreement between Owner and Contractor.

1.02 RELATED REQUIREMENTS

- A. Agreement Between Owner and Contractor: Lump Sum and Unit Prices
- B. Conditions of the Contract: Progress Payments, Retainage, and Final Payment
- C. Section 01153: Change Order Procedures
- D. Section 01159: Schedule of Values
- E. Section 01310: CPM Construction Schedules
- F. Section 01700: Project Closeout

1.03 FORMAT AND DATA REQUIRED

- A. Submit applications in the form required by Owner.
- B. The application must be in a format which contains the Schedule of Values accepted by Engineer.
- C. Submit applications for partial and final payment on forms which contain the following Contractor's Certificate:

CONTRACTOR'S CERTIFICATE

I, _____, the duly qualified and authorized agent of the Contractor, , on the above Project, do hereby certify that we have performed all of the Work set forth in strict accordance with the Contract Documents, laws, and ordinances applicable thereto, and do further certify that all materials and equipment listed herein have been paid for in full as allowed on all prior estimates and, if requested to do so, we will show evidence of payment for the same in writing before the final payment of this estimate. We further certify (if this is a final estimate) that the amount received hereunder is considered compensation and final payment in full for all Work performed under the Contract, including any amendments thereto and, upon payment of the said sum, hereby releases the Owner, its employees, agents and representatives in accordance with said Contract. We further certify that we fully guarantee all Work performed hereunder for a period of twelve months from the date of payment of the final estimates (in accordance with the terms of our original Contract and all amendments thereto), during which time all terms and conditions of the original Contract Documents will remain in full force and effect, including the insurance requirements, hold harmless provision and indemnity and insurance requirements as contained in said Contract Documents.

CERTIFIED TO FOR PAYMENT ON THIS _____ DAY OF _____, 2023.

(Contractor)

BY _____ TITLE _____

WITNESS _____ TITLE _____

1.04 SCOPE OF PAYMENT

- A. **QUANTITIES:** Quantities of separate items of Work listed in the Schedule of Values will serve as a guideline for payment for Work partially completed during a payment period, but payment for any item will not exceed the value assigned to the item, regardless of the actual quantity of the item in stalled.
- B. **BASIS OF PAYMENT:** The Contractor will accept the compensation, as herein provided, as full payment for furnishing all materials, labor, tools, equipment and incidentals necessary to the completed Work, and for performing all Work contemplated and embraced under the Contract; also for all loss or damage arising from the nature of the Work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the Work and until its final acceptance, and for all risks of every description connected with the prosecution of the Work; also for all expenses incurred in consequence of the suspension of the Work as herein authorized.
- C. **UNIT PRICE COVERAGE:** In cases where the "Basis of Payment" clause in the Specifications relating to any unit price in the bid schedule requires that the said unit price cover and be considered compensation for certain Work or materials essential to the item. This same Work or material will not be measured or paid for under any other pay item which may appear elsewhere in the Specifications.
- D. **REPAIR OR RENEWAL OF DEFECTIVE WORK:** The payment of any current estimate will in no way affect the obligation of the Contractor to repair or renew any defective parts of the construction, or to be responsible for all damages due to such defects.

1.05 PAYMENT FOR WORK PERFORMED

- A. The Contractor will receive and accept payment for Work performed under his Contract as follows:
 - 1. **ITEMS OF WORK:** Items of Work performed which are covered by definite prices stipulated in the Contract.
 - 2. **EXTRA WORK:** Extra Work performed in accordance with the requirements and provisions of these Specifications will be paid for at the unit price or lump sum stipulated in the Change Order Agreement, or in lieu of such Agreement, the Engineer may require the Contractor to do such Work on a Cost Plus basis. Extra Work, whether Unit Price, Lump Sum, or Cost Plus, will be paid for as specified in Change Order Procedures, Section 01153.

1.06 PAYMENT FOR ALTERED QUANTITIES

- A. When the actual quantities of Unit Price Work ordered and performed vary from the corresponding quantities, set out in the Bid Form, and whether or not there have been any changes in the drawings, the Contractor will accept as payment in full, so far as Contract Items are concerned, payment at the original Contract unit prices for the actual quantities of Work done. Alteration of drawings or character of Work involving extra Work will be paid for as stipulated in a Change Order prepared according to the requirements of Section 01153. Relocation of water or sewer lines from existing location to allow construction of new structures and/or new water, sewer or drainage lines will not be considered an alteration of the drawings.

1.07 PREPARATIONS OF APPLICATION FOR EACH PROGRESS PAYMENT

- A. Application for payment will include an Application Form of the format which complies with the requirements of the Owner and Engineer. The application will also include a Stored Material Schedule and invoices to support this Schedule.

- B. The Application Certification must be executed with the signature of a responsible officer of the Contracting firm.
- C. Stored material for which payment is requested must be listed by pay item number in schedule form, complete with supporting invoices for new material added to the list monthly. Invoice totals and pay item numbers must be clearly shown on all submitted invoices. Only materials which fully comply with the Drawings and Specifications will qualify as Stored Material. If any material is paid for and later discovered to not fully comply with the Drawings and Specifications, the Stored Material total, and the next Application for Payment will be reduced by the appropriate invoice amounts. In allowing an estimate for materials stored on the Project site, the Contractor will be required to furnish the Engineer certified copies of the invoices or other evidence satisfactory for all prior months showing that they have been paid.
- D. Retainage
The Owner may retain a portion of the amount otherwise due the Contractor, except as State law otherwise provides. The amount the Owner retains will be limited to the following:
 - 1. Withholding of not more than ten percent (10%) of the payment claimed until Work is fifty percent (50%) complete.
 - 2. When Work is fifty percent (50%) complete, no additional withholding of the payment claimed will be made provided that the Contractor is making satisfactory progress and there is no specific cause for greater withholding.
 - 3. When the Work is substantially complete (operational or beneficial occupancy), the withheld amount may be further reduced to only that amount necessary to assure completion.
 - 4. The Owner may reinstate up to ten percent (10%) withholding if the Owner determines, at its discretion, that the Contractor is not making satisfactory progress or there is other specific cause for such withholding.
- E. Payment for Work under this Contract will be made by Owner in lawful money of the United States drawn against funds which are legally available for such Work.

1.08 PREPARATION OF APPLICATION FOR FINAL PAYMENT

- A. Fill in Application form as specified for progress payments.
- B. Final application must comply with the requirements as specified in Section 01700 - Project Closeout.
- C. Procedure: Final payment will be in accordance with the Engineer's final estimate, properly executed and duly signed by the Contractor. Current estimates or partial payments are subject to correction in the final payment. Final payment to the Contractor will not be made until the Contractor has furnished in writing to the Engineer and Owner releases from all persons, firms, corporations or governing bodies upon whose Right-of-Way or property any Work was performed. These releases will state that all Work has been performed in accordance with the provisions of permits and is acceptable.

1.09 SUBMITTAL PROCEDURE FOR PROGRESS AND FINAL PAYMENTS

- A. Submit Applications for Payment to Engineer at the times stipulated in the Agreement.
- B. Number: Four copies of each application, unless otherwise directed.
- C. When Engineer finds application properly completed and correct, he will transmit certificate for payment to the Owner, with a copy to the Contractor

1.10 EXPLANATION OF BID ITEMS AND PAYMENT

- A. Work under the following Base Bid Items shall include all labor, equipment, and materials necessary to construct, install, test and place into service each of the Base Bid Items as shown in the Bid Documents. The work performed under this Contract includes bidding the Bores using the HDD Bore Method as depicted below:

HDD Bore Method:

1. Base Bid Item No. 1 – Install 432 LF of 20” HDPE DIPS DR 13.5 Casing, for two Force Main Lines. Complete per the Plans, Specifications & Contract Documents, per LF.
 2. Base Bid Item No. 2 – Install 500 LF for each Force Main, a 6” & a 4” HDPE Force Main, both DIPS DR 11, with End Seals. Complete per the Plans, Specifications & Contract Documents, per LF.
 3. Base Bid Item No. 3 – Install 436 LF of 20” HDPE DIPS DR 13.5 Casing for three Electric Lines & one Telecom Line. Complete per the Plans, Specifications & Contract Documents, per LF.
 4. Base Bid Item No. 4 – Install 500 LF for each of three 4” Electric HDPE Pipes & one 2” Telecom HDPE Pipe, all DIPS DR 11, with End Seals. Complete per the Plans, Specifications & Contract Documents, per LF.
 5. Base Bid Item No. 5 – Install 100 LF if the Rock Clause requires. Provide the Rock Cost per LF above the No Rock Cost per LF as Bid in Items 1 & 3 above.
 6. Base Bid Item No. 5 - Allowance for Mobilization, per Lump Sum.
 7. Base Bid Item No. 6 - Allowance for Demobilization, per Lump Sum
- B. **The City of LaGrange will award the Contract to the “low, responsive, responsible Bidder” that submits the lowest Total Base Bid Amount.**

1.11 WORK ITEMS REQUIRED FOR NO ADDITIONAL PAYMENT

A. General

The items in the Bid Form are intended to provide full compensation to the Contractor for providing a complete and functional Project. Any major Bid Item which is found by the proposed bidder shall be called to the attention of the Engineer prior to the Bid. **Payment for any minor items necessary to satisfactorily complete the project which is not listed in the Bid Form shall be included in the prices bid for the items in the Bid Form. No additional payment will be made for these items. The following items are included as minor items:**

1. Engineering Controls and Surveying
The Contractor shall provide and maintain construction stakes, centerlines, right-of-ways, cut and fill cross-sections, construction grades and final grades for the proper prosecution of the work under the Contract, all in accordance with the Specifications. No additional payment will be made for engineering controls and surveying.

END OF SECTION

SECTION 01153

CHANGE ORDER PROCEDURES

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. Changes in the Scope of the Work, additive and deductive, will be documented as described hereinafter. Individual scope changes or groups of scope changes will be made a part of the Contract in the form of Change Orders.
- B. Changes in the scope of the Work may be documented in the form of the following, as applicable:
 - 1. Proposal Requests
 - 2. Change Requests
 - 3. Construction Change Authorizations
- C. Costs or credit for changes in the scope of the Work may be calculated by the following methods, as allowed by the Engineer and as applicable:
 - 1. Unit Price
 - 2. Lump Sum
 - 3. Cost-Plus or Time-and-Material
- D. Throughout the prosecution of the Work, Contractor will:
 - 1. Provide full backup and other supporting documentation required to evaluate all Change Requests.
 - 2. Maintain detailed records of all authorized Work done on a Cost-Plus basis.
 - 3. Keep Construction Schedules, Schedule of Values, Application for Payment, Drawings Contract Documents, and Project Record Documents current with regard to approved Change Orders.
- E. Owner will designate in writing the person who is authorized to execute Change Orders.

1.02 CHANGE INITIATION PROCEDURES

- A. Owner or Engineer may initiate changes by submitting a Proposal Request to Contractor. The Proposal Request will include:
 - 1. Detailed description of the change, products, and location of the change in the Project.
 - 2. Supplementary or revised Drawings and Specifications.
 - 3. The projected time span for making the change.
 - 4. A specific period of time during which the requested price will be considered valid.
- B. In lieu of Proposal Request, Engineer may issue a Construction Change Authorization for Contractor to proceed with a change for subsequent inclusion in a Change Order.
 - 1. Authorization will describe changes in the Work, both additions and deletions, with attachment of revised Contract Documents to define details of the change, and will designate the method of determining any change in the Contract Price and any change in Contract Time.
 - 2. Owner and Engineer will sign and date the Construction Change Authorization as authorization for the Contractor to proceed with the changes.
 - 3. Contractor will sign and date the Construction Change Authorization to indicate agreement with the terms therein.

4. Contractor will document costs for the authorized cost, in the manner designated by the Engineer, in a Change Request submitted to the Engineer.
- C. Contractor will respond to Proposed Request, document costs associated with a Construction Change Authorization, or initiate changes by submitting a written Change Request to Engineer, containing:
 1. Description of changes.
 2. Statement of the reason for making the changes.
 3. Statement of the effect on the Contract Price and the Contract Time.
 4. Statement of the effect on the work of separate contractors.
 5. Documentation supporting any change in Contract Price or Contract Time, as appropriate.

1.03 DOCUMENTATION OF CHANGE REQUESTS

- A. Support Change Requests for anticipated Lump Sum changes and for new Unit Price items with cost backup data to justify additions or deductions to the Contract Amount and to the Contract Time:
 1. Labor; time and pay rates
 2. Equipment required.
 3. Products required.
 - a. Recommended source of purchase and unit cost quotation.
 - b. Quantities required.
 4. Taxes, insurance and bonds.
 5. Credit for work deleted from Contract, similarly documented.
 6. Fee (overhead and profit).
 7. Justification for any change in Contract Time and impact on Project Schedule.
- B. Support each Change Request for additional work done on a Cost-Plus basis with documentation as required for a Lump Sum Change Requests, plus additional information:
 1. Name of the Owner's authorized agent who ordered the additional work, and date of the Order.
 2. Dates and times work was performed, and by whom.
 3. Time record, verified by Project Representative, summary of hours worked, and hourly rates paid.
 4. Receipts and invoices for:
 - a. Equipment used, listing dates and times of use.
 - b. Products used, listing quantities.
 - c. Subcontracts.

1.04 LIMITATIONS

- A. Change Requests involving previously-established Unit Prices will be limited to the subject Unit Prices multiplied by quantities agreed upon by Contractor and Engineer. Unit Prices include fee, so no additional fee may be added.
- B. Pricing for Lump Sum or Cost-Plus Change Requests may include costs of materials, labor (including foremen), equipment use, subcontracts, taxes, insurance, bonds and fee (overhead and profit). Costs of supervision, management, office support, miscellaneous expendable items, small tool purchase and use, and incidentals will be considered to be overhead expenses, and thus covered under by fee.
- C. Fee on additive Change Requests will be subject to the following limitations:
 1. For Work performed by subcontractors:
 - a. performing subcontractor may add fee of not more than fifteen (15) percent of the total of eligible

- costs.
- b. each higher tier of subcontractor or contractor may add fee of not more than eight (8) percent of the performing subcontractor's total of eligible costs.
- 2. Contractor may add fee of not more than fifteen (15) percent of the total of all other eligible costs.
- D. On deductive Change Requests, fee calculated at one-half (½) the rates prescribed for additive Change Requests will also be deducted as profit. The other half of fee may be retained for overhead expenses associated with processing the Change Request and Change Order.

1.05 APPROVAL

- A. Contractor will not proceed with work described in Proposal Request(s) or Change Request(s) until Engineer accepts and approves the Change Request(s) concerned.
- B. Contractor may proceed with work described in Construction Change Authorization(s) upon receipt of such authorization signed by the Owner and the Engineer.

1.06 PREPARATION OF CHANGE ORDERS

- A. Periodically throughout the course of the Project, the Engineer will compile all approved Change Requests (except those Change Requests included in a previous Change Order) into a sequentially numbered Change Order.
- B. Change Orders will be itemized by Change Request number, change description, cost amount (additive or deductive) and effect on Contract Time.
- C. Change Order will include revised Contract Documents as required.

1.07 IMPLEMENTATION OF CHANGE ORDERS

- A. Upon approval of a Change Order, Contractor will revise the Schedule of Values to reflect the approved changes.
 - 1. Each approved Change Request included in the Change Order will be listed as a separate new item in the Schedule of Values, and will be further broken down into component costs as approved in the Change Requests.
 - 2. The Contract Amount will be revised to reflect the sum total of the approved Change Orders.
- B. The revised Schedule of Values will then serve as the basis of all subsequent Applications For Payment.
- C. Contractor will update the Construction Schedule to reflect Change Order items as described in Section 01310, Construction Schedules.
- D. Upon completion of work under a Change Order, Contractor will enter pertinent changes in Record Documents.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MATERIALS

All materials and/or products furnished and installed under a Change Order will meet the requirements of similar materials and/or products specified in the original Contract Specifications. If the material and/or product was not specified in the original Specifications, then the material and/or product will meet the requirements of all Specifications made part of the Contract by Change Order.

PART 3 - EXECUTION

3.01 CONSTRUCTION OBSERVATION

Items of Work cited in the signed and dated Change Order will be done under the observation of the Project Representative or Engineer, and his decision will be final and binding. The Drawings, if any, to be followed for such work; the equipment to be used; and the amount and character of labor to be employed will meet with his approval. Nothing stated in this paragraph will be construed to prevent the Contractor from seeking court review.

END OF SECTION

SECTION 01159

SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Submit to the Engineer a Schedule of Values allocated to the various portions of the Work, within ten days after award of Contract.
- B. Upon request of the Engineer, support the values with data which will substantiate their correctness.
- C. The Schedule of Values, unless objected to by the Engineer, will be used only as the basis for the Contractor's Applications for Payment.

1.02 RELATED REQUIREMENTS

- A. Section 00700: General Conditions
- B. Section 01152: Application for Payment.
- C. Section 01310: CPM Construction Schedules.

1.03 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. The schedule of values shall Identify:
 - 1. Title of Project and Contract number.
 - 2. Name and address of Engineer.
 - 3. Name and address of Contractor.
 - 4. Date of submission.
- B. Schedule will list the installed value of the component parts of the Work in sufficient detail to serve as a basis for computing values for progress payments during construction.
- C. Identify each line item with the number and title of the respective major section of the Specifications.
- D. For each major line item list sub-values of major products or operations under the item.
- E. For the various portions of the Work:
 - 1. Each item will include a directly proportional amount of the Contractor's overhead and profit.
 - 2. Submit a subschedule for each separate stage of work specified.
- F. The sum of all values listed in the schedule will equal the total Contract Price.

END OF SECTION

SECTION 01200

PROJECT MEETINGS

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Engineer shall schedule and administer Pre-Construction meeting, periodic Progress Meetings, and specially called meetings throughout progress of the work.
 - 1. Prepare agenda for meetings.
 - 2. Distribute notice of each meeting date.
 - 3. Make physical arrangements for meetings.
 - 4. Preside at meetings.
 - 5. Record the minutes; include significant proceedings and decisions.
 - 6. Distribute copies of minutes.

1.02 RELATED REQUIREMENTS

- A. Section 01310: CPM Construction Schedules.
- B. Section 01340: Shop Drawings, Produce Data and Samples.
- C. Section 01720: Project Record Documents.
- D. Section 01730: Operating and Maintenance Data.

1.03 PRE-CONSTRUCTION MEETING

- A. Schedule date acceptable to Owner and Contractor, after the Notice to Proceed.
- B. Location: A central site designated by Engineer.
- C. Attendance:
 - 1. Owner's Representative.
 - 2. Engineer and his professional consultants as needed.
 - 3. Contractor's Representative.
 - 4. Major Subcontractors.

1.04 PROGRESS MEETINGS

- A. Schedule regular monthly periodic meetings.
- B. Location: A central site designated by Engineer.
- C. Attendance:
 - 1. Owner's Representative.
 - 2. Engineer and his professional consultants as needed.

3. Contractor's Representative.
4. Major Subcontractors.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF SECTION

SECTION 01310

CPM CONSTRUCTION SCHEDULES

PART 1 - GENERAL

1.01 GENERAL

- A. The CPM Construction Schedule is the mutually-agreed construction plan which demonstrates to the Owner and Engineer that the Contractor has thought through all elements of the construction process, has conformed to the requirements of the Contract Documents, and can execute, including updates, the major construction elements and activities within the contractual time frames of the Contract Documents.

1.02 WORK INCLUDED

- A. Prepare and submit to Engineer a CPM Construction Schedule for the Construction Project, with major elements of construction and related activities and sub-activities which are essential to its progress of the Construction Project per the Contract Documents.
- B. Consider any recommended sequence of construction proposed in the Contract Documents during the preparation of the CPM Construction Schedule.
- C. It is the Contractor's responsibility to develop a totally functional CPM Construction Schedule that will comply with the Project Plans and Contract Documents.
- D. The Contractor shall develop the CPM Construction Schedule for the Contract A - 2023 Whitesville Force Main I-85 Bores. The Contractor must schedule and sequence all work associated with the Project to minimize any operational disturbance. All planned operational disturbances must be approved by the Owner.

1.03 CONTENT OF THE "CPM CONSTRUCTION SCHEDULES"

- A. Consider any recommended sequence of construction proposed in the Contract Documents during the preparation of the CPM Construction Schedule.
- B. Organize the CPM by each major elements of construction, such as,
 - 1. Erosion Control Installation
 - 2. Construction of the I-85 Bore with a 6" Force Main & a 4" Force Main.
 - 3. Construction of the I-85 Bore with three 4" Electrical Pipes & one 2" Telecom Pipe,
 - 4. Construction of the Project.
- C. Identify each activity of all major elements of construction, such as,
 - 1. Submittal Schedule
 - 2. Delivery of Materials
 - 4. Construction and Installation Activities
 - 5. Completion of Activity
- D. Show the dates for the beginning, and completion of each major element, activity and/or sub-activity of the CPM Construction Schedule.

- E. Show projected percentage of completion for each item, as of the first day of each month.
- F. Identify all Critical Portions of the CPM Construction Schedule required to comply with the Contract Documents.

1.05 REVISED SCHEDULES

- A. Indicate progress of each of the major elements, activities and sub-activities to date of submission of the Revised Schedules.
- B. Show changes occurring since previous submission of schedule:
 - 1. Major changes in scope.
 - 2. Activities modified since previous submission.
 - 3. Revised projections of progress and completion.
 - 4. Other identifiable changes.
- C. Provide a narrative report as needed to define:
 - 1. Problem areas, anticipated delays, and the impact on the schedule.
 - 2. Corrective action recommended, and its effect.
 - 3. The effect of changes on schedules submitted.

1.06 SUBMISSION OF SCHEDULES

- A. Submit initial schedules within 10 days after Award of Contract. Engineer will review schedules and return review copy within 10 days after receipt.
- B. Submit revised schedules with each application for payment.
- C. Submit four (3) copies which will be retained by the Engineer.

END OF SECTION

SECTION 01340

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Submit Shop Drawings, Product Data and Samples on all materials and equipment that are to be incorporated into the Project by the provisions of these Contract Documents.
- B. Designate in the Construction Schedule, or in a separate coordinated schedule, the dates for submission of the Shop Drawings.

1.02 SHOP DRAWINGS

- A. Shop Drawings will be presented in a clear and thorough manner. Details will be identified by reference to detail sheet or schedule shown on drawings.
- B. Drawings for steel structures will consist of shop drawings showing layout, connection details, dimensions, sizes of material, elevation views and other information necessary for the complete fabrication of the metal Work.
- C. Drawings for concrete structures will consist of detailing of the reinforcing steel.
- D. Details for falsework, bracing, cribs, coffer dams, centering and form work, masonry layout and similar work are not required since they are the complete responsibility of the Contractor in all of their aspects.
- E. Drawings for plant and yard piping will consist of details, dimensions, layout, and bill of materials necessary for the complete fabrication and installation of the piping and appurtenances.

1.03 PRODUCT DATA

- A. Identify specification section, location on Project, size and quantities. Show performance characteristics and capacities and show dimensions and clearances required. Show wiring or piping diagrams and controls.
- B. Manufacturer's standard schematic drawings and diagrams should provide information specifically applicable to the Work.

1.04 SAMPLES

- A. Office samples will be of sufficient size and quantity to clearly illustrate the functional characteristics of the product, with integrally related parts and attachment devices. Provide full range of color, texture and pattern in the sample submittal.

1.05 CONTRACTOR RESPONSIBILITIES

- A. Review Shop Drawings, Product Data and Samples prior to submission.
- B. Determine and verify field measurements and conformance with Specifications.

- C. Coordinate each submittal with requirements of the Work and of the Contract Documents.
- D. Notify the Engineer in writing of any deviations in the submittals from requirements of the Contract Documents. Each deviation should be marked in "red" on the shop drawings.
- E. If the Contractor fails to notify the Engineer of any deviation in the shop drawing submittals from the requirements of the Contract Documents and the deviations are not noted in the Engineers review, it becomes the Contractor's responsibility to correct any problems during construction, at no cost to the Engineer or Owner, resulting from the Contractor's failure to note deviations and have such deviations resolved during the shop drawing process. Contractor must compensate Owner for Engineer's expense to solve any field construction problems resulting from such deviations.
- F. Begin no fabrication of Work which requires submittals until return of submittals with Engineer approval.

1.06 SUBMISSION REQUIREMENTS

- A. Make submittals promptly in accordance with approved schedule.
- B. Number of submittals required:
 - 1. Submit the number required by the Engineer.

1.07 RESUBMISSION REQUIREMENTS

- A. Make any corrections or changes in the submittals required by the Engineer and resubmit until approved.

1.08 ENGINEER DUTIES

- A. Review submittals with reasonable promptness and in accordance with schedule.
- B. Affix stamp and initials or signature, and indicate exceptions taken, if any, and requirements for resubmittal.
- C. Return submittals to Contractor.

1.09 ENGINEER REVIEW

- A. It is expressly understood that the review by the Engineer of the Contractor's Work on drawings relates to the general intended requirements and details. Such review will not relieve the Contractor of any responsibility for accuracy of dimensions and details.
- B. The Contractor will be responsible for agreement and conformity of his working drawings with the Drawings and Specifications.

1.10 COMPENSATION

- A. Compensation for preparing and furnishing all working drawings will be included in the lump sum price and/or unit prices bid for the Work and such drawings will be furnished by the Contractor without additional compensation.

END OF SECTION

SECTION 01430

CONTRACTOR SUPERVISION OF WORK

PART 1 - GENERAL

1.01 CONTRACTOR RESPONSIBILITIES

- A. The Contractor will be responsible for planning, scheduling, organization and prosecution of the Work in accordance with the Drawings, Specifications and Contract Documents.
- B. Observations, construction reviews, tests, recommendations or approvals by the Engineer, or by persons other than the Contractor, will in no way relieve the Contractor of his obligation to complete all Work in accordance with the Drawings, Specifications and Contract Documents.
- C. All Work will be done under the direct supervision of the Contractor.
- D. The Contractor will be responsible for construction means, methods, techniques and procedures, and for providing a safe place for the performance of the Work by the Contractor, by all subcontractors, by all suppliers, and by the employees of all of those heretofore named.
- E. The Contractor will also be responsible for safe access to the Work, safe use of the Work, safe working conditions, and safe occupancy of the Work by and/or for all authorized persons.

1.02 SUPERINTENDENCE

- A. The Contractor will maintain on the Project a qualified superintendent, who will provide the efficient supervision required for the successful and satisfactory completion of the Work.
- B. The superintendent will have the authority to act in behalf of the Contractor.
- C. All communication with the superintendent will be considered as communication with the Contractor.
- D. The Contractor's superintendent will be present on the site of the Work at all times as required to adequately perform his supervisory duties.

1.03 SUBCONTRACTORS

- A. The Contractor will coordinate and supervise all Work performed under this Contract by subcontractors.
- B. The Contractor will be totally responsible for the quality of the subcontractor's Work.

END OF SECTION

SECTION 01500

TEMPORARY UTILITIES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish, install and maintain temporary utilities as required for the Construction Project.
- B. Remove all temporary utilities upon completion of the Work.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable Federal, State and Local codes, standards and regulations.

2.02 TEMPORARY ELECTRICITY, AS REQUIRED

- A. Arrange with utility company to provide all service required for power and lighting. Pay all costs for service and for power used.
- B. All temporary electrical facilities shall be installed, maintained and utilized in a safe manner, meeting all applicable electrical codes and OSHA requirements.

2.03 TEMPORARY LIGHTING, AS REQUIRED

- A. Provide and maintain lighting for construction operations as deemed necessary.
- B. All temporary lighting facilities shall be installed, maintained and utilized in a safe manner, meeting all applicable codes and OSHA requirements.

2.04 TEMPORARY WATER SERVICE, AS REQUIRED

- A. Make connections to existing facilities to provide water for construction purposes.
- B. Pay all costs for installation, maintenance and removal, and service charges for water used.

2.06 TEMPORARY SANITARY FACILITIES, AS REQUIRED

- A. Provide sanitary facilities for the use of the Contractor's employees as may be necessary to comply with the rules and regulations of the State Board of Health or of other authorities having jurisdiction. Pay all costs for installation, maintenance and service charges for sewer service used.
- B. Service, clean and maintain facilities and enclosures.

END OF SECTION

SECTION 01530

BARRIERS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish, install and maintain suitable barriers as required to prevent public entry onto the project site, and to protect the Work, existing facilities, trees and plants from construction operations.
- B. Remove barriers when no longer needed, or at completion of Work.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Materials may be new or used, suitable for the intended purpose, but must not violate requirements of applicable Federal, State and Local codes, standards and regulations.

2.02 BARRIERS

- A. To Contractor's option, materials as appropriate to serve each specified required purpose.
- B. Install barriers of reasonable uniform appearance, structurally adequate for required purposes.
- C. Maintain barriers during entire construction period.
- D. Relocate barriers as required by progress of construction.

2.03 REMOVAL

- A. Completely remove barricades when they are no longer needed, and when approved by Engineer.
- B. Clean and repair damage caused by installation.

2.04 COST

- A. The Contractor shall pay all cost for temporary barriers.

END OF SECTION

SECTION 01540

SECURITY

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide barricades, lanterns and other such signs and signals as may be necessary to warn of the dangers in connection with open excavation and obstructions.
- B. Provide an adequate and approved system to secure the Project area at all times, especially during non-construction periods; the Contractor shall be solely responsible for taking proper security measures.

1.02 COSTS

- A. Contractor shall pay all costs for protection and security systems.

END OF SECTION

SECTION 01550

ACCESS ROADS AND PARKING AREAS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide and maintain vehicular access to site and within site to provide uninterrupted access:
 - 1. To temporary construction facilities, storage and Work areas.
 - 2. For use by persons and equipment involved in construction of Project.
 - 3. For use by emergency vehicles.
- B. Provide and maintain temporary parking facilities for use by construction personnel.
- C. Remove temporary construction materials and facilities when no longer needed, and restore areas.

1.02 SITE ACCESS ROADS

- A. Provide site access for construction equipment and vehicles.

1.03 ON-SITE ROADS AND PARKING AREAS

- A. Locate roads, drives, walks and parking facilities to provide uninterrupted access to construction offices, mobilization, work, storage areas, and other areas required for execution of the Contract.
 - 1. Location: as designated; consult with Contractor regarding any desired deviation therefrom.
 - 2. Size of parking facilities: Adequate to provide for needs of personnel. Provide additional off-site facilities if required.
- B. Provide access for emergency vehicles to the Project site.
- C. Maintain traffic free as possible of excavated materials, construction equipment and debris.

1.04 EXISTING PAVEMENTS

- A. Designated existing on-site streets and driveways may be used for construction traffic. Provide temporary roads as needed for required construction access.
- B. Do not allow existing parking facilities to be used by construction personnel or for Contractor's vehicles or equipment.

PART 2 - PRODUCTS

2.01 BASE AND TOPPING MATERIALS

- A. For temporary construction which will be removed when no longer needed for construction purposes: At Contractor's option.
- B. For earthwork and topping which will become a permanent part of the Work: Materials will comply with the respective Sections of Specifications.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Clear areas required for access roads and parking areas.
- B. Fill, compact and grade areas as necessary to provide suitable support for vehicular traffic under anticipated loadings.
- C. Provide for surface drainage of facilities and surrounding areas. Provide and operate temporary pumps as required.

3.02 CONSTRUCTION

- A. Construction methods for temporary facilities to be removed when no longer needed: At Contractor's option to provide the required results.
- B. For Work, which will become a part of permanent Work, comply with respective sections of Specifications for preparation and construction.

3.03 MAINTENANCE

- A. Maintain roads, walks and parking areas in a sound, clean condition. Repair or replace any portions damaged during progress of construction Work.

3.04 REMOVAL

- A. Completely remove temporary materials and construction when construction needs can be met by use of permanent installation.
- B. Restore areas to original or to specified conditions at completion of Work.

3.05 COST

- A. The Contractor shall pay for all costs associated with the requirements of these Specifications.

END OF SECTION

SECTION 01560

TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide and maintain methods, equipment, and temporary construction, as necessary to provide controls over environmental conditions at the construction site and related areas under Contractor's control.

1.02 DUST CONTROL

- A. Execute Work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into the atmosphere.

1.03 WATER CONTROL

- A. Provide methods to control surface water runoff to prevent damage to the site or adjoining properties. Control fill, grading and ditching to direct surface drainage away from excavations, pits, tunnels and other construction areas and to direct drainage to proper runoff control devices.

1.04 DEBRIS CONTROL

- A. Initiate and maintain a specific program to prevent accumulation of debris at construction site, storage and parking areas, or along access roads and haul routes. Provide containers for deposit of debris. Prohibit overloading of trucks to prevent spillages on access and haul routes.

1.05 POLLUTION CONTROL

- A. Provide methods, means and facilities required to prevent contamination of soil, water or atmosphere by the discharge of noxious substances from construction operations.
- B. Perform special measures to prevent harmful substances from entering public waters. Prevent disposal of wastes, effluents, chemicals, or other such substances adjacent to streams, or in sanitary or storm sewers.

1.06 EROSION CONTROL

- A. Plan and execute construction and earth work by methods to control surface drainage from cuts and fills, and from borrow and waste disposal areas, to prevent erosion and sedimentation.
- B. The Contractor will comply with the Erosion Control Plan depicted in the Drawings and Specifications and will comply with the requirements to obtain a state and/or local agency approved Erosion Control Plan.
- C. The installation of the erosion control measures to comply with the Contract Document as well as the State and/or Local Agency approved Erosion Control Plan will be installed prior to land-disturbing activities and will be maintained at all times.

END OF SECTION

SECTION 01570

TRAFFIC REGULATION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide, operate and maintain equipment, services and personnel, with traffic control and protective devices, as required to expedite vehicular traffic flow on haul routes, at site entrances, on on-site access roads, and in parking areas.
- B. Remove temporary equipment and facilities when no longer required. Restore grounds to original, or to specified conditions.

1.02 TRAFFIC CONTROL IN WORK AREAS

- A. Provide and operate traffic control and directional signals required to direct and maintain an orderly flow of traffic in all areas under Contractor's control or affected by Contractor's operations.
- B. All traffic signs, warning lights, barricades and flagmen, as well as their number and placement, will be in accordance with the Department of Transportation "Manual on Uniform Traffic Control Devices for Streets and Highways," latest edition for the State in which the Project is located.
- C. Comply with all traffic requirements of local and state governments.

1.03 FLAGMEN

- A. Provide trained and suitably equipped flagmen to regulate traffic when construction operations encroach on public traffic lanes.

1.04 FLARES AND LIGHTS

- A. Provide flares and lights during periods of low visibility. Clearly delineate traffic lanes and guide traffic.
- B. Provide illumination of critical traffic and parking areas.

1.05 ROAD CLOSING, DETOURS, AND MAINTENANCE

- A. No highway, road or street or section thereof will be closed to public traffic except with the written permission of the Agency governing and maintaining that road, street or highway. The Contractor will maintain all detours for traffic along or over the Work. Unless otherwise provided in the Supplementary Conditions, the road, street or highway upon which the improvement or installation is being made, will, except at times when deemed impracticable by the Engineer, be kept continuously open to public traffic and in passable and safe condition.
- B. Where the Work to be constructed under this Contract follows the general route of an existing road which is wholly or in part used by the traveling public, the Contractor will, without extra compensation, repair and maintain in safe, passable and convenient condition all such part or parts of such existing roads as are being so used between extreme limits of the Work under this Contract during the entire time from the date of the Notice to Proceed on this Contract until the final acceptance of the Work hereunder.

- C. The Contractor will be required to carry traffic over the roads or streets with the least inconvenience to traffic within the limits of the Right-of-Way and on detours for which he is responsible as hereinabove provided.

1.06 CONSTRUCTION PARKING CONTROL

- A. Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, Owner's operations, or construction operations.
- B. Monitor parking of construction personnel's private vehicles. Maintain free vehicular access to and through parking areas. Prevent parking on or adjacent to access roads, or in non-designated areas.

1.07 HAUL ROUTES

- A. Consult with governing authorities, and establish public thoroughfares which will be used as haul routes and site access.
- B. Roads used by the Contractor for hauling materials and equipment will be maintained by the Contractor without extra compensation.

1.08 PAYMENT

- A. No direct payment will be made for the traffic control requirements listed in this Section. Such costs will be included in the lump sum price or distributed among the bid unit prices on the Bid Form.

END OF SECTION

SECTION 01700

PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. The Work under this Section includes the general requirements in preparation for final acceptance, final payment, normal termination of the contract, occupancy by the Owner, and similar actions evidencing completion of the Work. The time of closeout is recognized to be directly related to Substantial Completion and therefore may be either a single time period for the entire Work or a series of time periods for individual parts of the Work which have been certified as substantially complete at different dates.

1.02 SUBSTANTIAL COMPLETION

- A. Prior to requesting the Engineer observe the Work for Certification of Substantial Completion, complete the following:
1. Submit the last partial-payment request with the Contractor's sworn statement showing one hundred percent (100%) completion of the Work.
 2. Submit a release of liens for all materials, labor and other Work incorporated in the Project.
 3. Submit a consent of surety.
 4. Submit special guarantees, warranties, final certifications and similar documents.
 5. Obtain and submit final inspection test certificates and similar releases enabling the Owner's full and unrestricted use of the Work and access to services and utilities.
 6. Submit record drawings, maintenance manuals, and similar final record information.
 7. Complete start-up testing of systems and instruct Owner's personnel of maintenance and operating procedures. Submit all start-up and training reports.
 8. Discontinue and remove from the site any remaining temporary facilities, fencing and services, along with construction tools and facilities, and similar elements.
 9. Complete the final cleaning to the satisfaction of the Engineer. Remove all debris, rubbish, and other waste materials from the Project site.
 10. Touch-up and otherwise repair and restore marred exposed finishes.

1.03 FINAL ACCEPTANCE

- A. Prior to requesting the Engineer's final inspection for certification of final acceptance and final payment, complete the following:
1. Submit a request for final payment with final releases not previously submitted and accepted. Include certificates of insurance for products and completed operations.
 2. Submit certified copy of the Engineer's final punch list of itemized Work to be completed or corrected stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by the Engineer.

END OF SECTION

SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. The Contractor shall keep and maintain in good condition at the Project site, one (1) set of full size plan prints of the contract drawings.
- B. The Contractor shall enter upon these prints, from day to day, the actual "as built" record of the construction progress. Entries shall be made in a neat and legible manner and these prints shall be delivered to the Engineer upon completion of the Project.
- C. Approval for final payment will be contingent upon compliance with this Section of the Specifications.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Maintain at the site, for the Owner, one record copy of:
 - 1. Drawings
 - 2. Specifications
 - 3. Addenda
 - 4. Change Orders and other modifications to the Contract
 - 5. Engineer Field orders or written instructions
 - 6. Approved Shop Drawings, Product Data and Samples
 - 7. Field Test Records
 - 8. Construction Photographs

1.03 RECORDING

- A. Label each document "PROJECT RECORD".
- B. Record information concurrently with construction progress.

1.04 SUBMITTAL

- A. At Contract close-out, deliver Record Documents to Engineer for the Owner.

END OF SECTION

SECTION 01740

WARRANTIES AND BONDS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Compile all specified warranties and bonds.
- B. Compile specified service and maintenance contracts.
- C. Co-execute warranties, bonds and contracts when so specified.
- D. Review warranties, bonds and contracts to verify compliance with the requirements of the Contract Documents.
- E. Submit two (2) original signed copies of the warranties, bonds and contracts to Engineer for review and submittal to owner.
- F. All warranties and bonds will be from the date of Substantial Completion and for a duration of one (1) year, unless specified for a time period greater than one (1) year in other Sections of the Specifications.

1.02 FORM OF SUBMITTALS

- A. Include submittal copies of each specified warranties, bonds, and service and maintenance contracts.
- B. Submit record copies of all specified warranties, bonds, and service and maintenance contracts, compiled in a single three-ring binder.

1.03 TIME OF SUBMITTALS

- A. Make submittals within ten days after date of substantial completion, prior to final request for payment.
- B. For items of work where acceptance is delayed materially beyond date of substantial Completion, provide updated Submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.04 SUBMITTALS REQUIRED

- A. Submit warranties, bonds, service and maintenance contracts as specified in respective Sections of Specifications.
- B. Provide a Summary List for all warranties and bonds, listing the start of each and duration for each, as specified in these Specifications.

END OF SECTION

DIVISION 2

SITEWORK

SECTION 02100

SITE PREPARATION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. The work under this section includes, but is not limited to the following:
 - 1. Clearing and grubbing
 - 2. Topsoil removal
 - 3. Site grading
 - 4. Material disposal
- B. Related work specified elsewhere:
 - 1. Section 02200 - Earthwork - General
 - 2. Section 02201 - Earthwork - Pipeline

1.02 JOB CONDITIONS

- A. The Engineer will provide:
 - 1. Permanent base lines
 - 2. Property lines
 - 3. Easement lines
 - 4. Permanent bench marks
- B. The Contractor will:
 - 1. Provide all construction layout
 - 2. Provide temporary bench marks
 - 3. Verify all dimensions in relation to existing facilities
 - 4. Comply with all Federal, State, and local laws and regulations.

PART 2 - PRODUCTS

2.01 CLEARING

- A. The site will be cleared of all trees and other vegetation not specifically designated to remain.
- B. The site will be cleared of all downed timber, snags, and rubbish.

2.02 GRUBBING

- A. The site will have all stumps and roots 2 inches and larger removed to a depth of not less than 6 inches below the original ground surface.
- B. Areas of structural excavation will have all visible stumps and roots 2 inches and larger removed.

2.03 TOPSOIL REMOVAL AND STORAGE

- A. Topsoil will be removed, generally 2 to 6 inches, from all areas to be excavated or filled.

- B. Topsoil will be stockpiled at a location approved by the Engineer.

2.04 SITE GRADING

- A. The site will be graded during construction to eliminate unnecessary ponding of water and provide as dry as possible work site.
- B. The finish grading will be accomplished after placement of 3 inches of topsoil in all disturbed areas.
 - 1. The finished grade will be within 0.10 foot of the grade shown on the Drawings in areas within 10 feet of any structure or paved area.
 - 2. The finished grade in other areas will be within 0.15 foot of the grade shown on the Drawings.

2.05 MATERIAL DISPOSAL

- A. Salvageable items:
 - 1. All items of equipment and material salvaged will be the property of the Owner.
 - 2. The Contractor will carefully remove, clean, inspect and transport salvaged items to the place designated by the Owner.
 - 3. Salvaged materials are not to be used in the new work unless called for on the Drawings or authorized in writing by the Engineer.
- B. Waste: No waste material will remain on the jobsite except as authorized in writing by the Engineer.

PART 3 - EXECUTION

3.01 CONSTRUCTION METHODS

- A. Clearing, grubbing, topsoil removal, intermediate grading disposal will be accomplished by methods determined by the Contractor and will be the total responsibility of the Contractor.

3.02 FINISH GRADING

- A. Finish grading may be accomplished by mechanical means.
- B. Failure to achieve the grades as specified in Part 2.04B of this Section will result in the Engineer requiring the Contractor to use hand tools and labor.

END OF SECTION

SECTION 02200

EARTHWORK - GENERAL

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. The Work under this section includes but is not limited to the following:
 - 1. Excavation
 - 2. Drilling and Blasting
 - 3. Fills and Embankments
 - 4. Structural Backfill
 - 5. Borrow Material
 - 6. Structural Foundation Material
 - 7. Rip Rap
 - 8. Disposal of Materials
 - 9. Foundation drilling
 - 10. Sheet piling, shoring and bracing
- B. Related Work Specified Elsewhere:
 - 1. Section 02100 - Site Preparation
 - 2. Section 02930 - Grassing

1.02 JOB CONDITIONS

- A. All excavation will be unclassified. No additional payment will be made for rock excavation.
- B. The Contractor will be responsible for providing adequate sheet piling and shoring and will repair, at no cost to the Owner, all damage resulting from failure to provide adequate support.
- C. The Contractor will be responsible for damage to property and injury to persons caused directly or indirectly by blasting operations or inadequate sheet piling and shoring.

1.03 EXCAVATION

- A. Structural Excavation
 - 1. Excavation for structures will be sufficiently large for the proper placing of forms and concrete and for dewatering purposes, but will not be excessively large in horizontal area. It will be the Contractor's responsibility to dewater excavation and keep water level at least two feet below excavation for building. Banks may be sloped at a safe angle provided that such excavation does not endanger or damage existing or proposed structures pipelines, etc. The bottom of the excavation will be true to the required shape and elevations shown on the plans. No earth backfilling will be permitted under structures unless specifically shown on the plans. Should the Contractor excavate below the elevations shown or specified, he will fill the void thus made with crushed stone acceptable to the Engineer and thoroughly compacted or with Class B concrete at his own expense.
 - 2. On unit price contracts the horizontal limits for structural excavation will be measured for payment between the vertical planes passing 12-inches beyond the outer vertical surface of the structure or beyond the outer edge of the structure footing, whichever is greater.
 - 3. All footing excavations will be tested per Section 01410 to determine if the material is suitable for the foundations. All unsuitable material will be removed per Part 1.03A.4., below.

4. When muck, quicksand, soft clay, swampy or other material unsuitable for foundations are encountered which extend beyond the limits of the excavation, such materials will be removed only after approval of the Engineer and replaced with structural foundation material per Part 2.02 of this Section and thoroughly compacted, or with Class B concrete.
5. In all cases where materials are deposited along open excavation, they will be placed so that in the event of rain, no damage will result to the work or adjacent property.

B. Underwater Excavation:

1. Where the excavation area shown on the plans is under the water surface or near the banks of a flowing stream or other body of water, the Contractor may adopt and carry out any method he may deem feasible for the performance of the excavation work and for the protection of the work thereafter; provided the method and equipment to be used results in completed work which complies with the specifications and is acceptable to the Engineer. In such cases, the excavation area will be effectively protected from damage during the excavation period and until all contemplated construction work therein has been completed. The cost of all temporary construction work necessary or incidental thereto, including the cost of installing and removing sand bags, coffer dams, sheet piling excavation and backfill, pumping and dewatering, will be considered as an integral part of the cost of excavation and no separate payment therefor will be allowed or made.

1.04 DRILLING AND BLASTING

- A. Drilling and blasting methods used in rock excavation will be optional with the Contractor but will be conducted with due regard to the safety of persons and property in the vicinity of the work and in strict conformity with all laws, ordinances or regulations governing blasting and the use of explosives. Rock excavation near existing structures of all types will be conducted with the utmost care, and every precaution will be taken to prevent damage to such structures. Any damage or injury of whatever nature to persons or property caused directly or indirectly by blasting operations will be promptly repaired, replaced or compensated for by the Contractor at his own expense and to the entire satisfaction of the persons injured or the Owners of the property damaged.
- B. Where future units are adjacent to structures requiring rock excavation, the rock will be drilled and blasted (not excavated) for a distance of approximately 10 feet from the present construction or as directed by the Engineer.

1.05 FILLS AND EMBANKMENTS

- A. Fills and embankments will be constructed of rolled or compacted earth conforming to these specifications and to the lines and grades shown on the drawings.
- B. The area to be occupied by the embankment will be stripped of all surface material to a depth of not less than 6 inches and this material will be removed and stockpiled for reuse as topsoil as specified elsewhere. The surface thus exposed will then be machine-graded to planes suitable for embankment foundations. Any materials such as large stones or stumps found embedded in the exposed surface that would interfere with proper compaction and consolidation of the starting layers of embankment will also be removed. Any material thus removed from the embankment area which is unsuitable for embankment construction will be disposed of in a suitable manner and will not be used in the work.
- C. Material used for embankment construction will consist of a mixture of the available soils. It will be entirely free of brush, stumps, heavy sods, heavy growth of grass and other organic matter and will not contain any stones larger than 5 inches in greatest dimension. Material will be placed in the embankment in successive layers of not more than 12 inches in loose depth and then rolled and compacted as specified

herein. Starting layers will begin at the lowest points in the fill. All starting layers will be carefully placed and compacted in such manner as will provide a complete bond between the compacted fill and the natural ground on which it rests so as to prevent the development of planes of weakness. Successive layers will be approximately horizontal after compaction, and will be sloped slightly to the outside edge of the fill to provide proper drainage while the work is in progress. Material for successive layers may be dumped onto preceding layers; but it will then be spread, by the use of blade graders, bulldozers or similar equipment, so that when properly compacted it will form a layer of uniform thickness over the entire preceding layers.

- D. The material will be distributed and mixed in each layer so that all parts of the finished will be a uniform composite mixture of all of the viable soils, and will be free of lenses, pockets, streaks or layers which differ materially in texture or density from adjoining layers. No pockets or clusters of stones will be permitted to form in the completed work.
- E. The optimum water content and the maximum density produced by proper compaction of the available soils will be pre-determined by the Engineer and will govern the compaction operations throughout the progress of the work. The maximum density and optimum moisture content will be determined in accordance with the requirements of the Georgia Department of Transportation, Standard Specifications, Latest Edition. Material containing too much moisture, or which is frozen, will not be placed in the embankment. Its placement may be delayed until it has dried out to the proper moisture content, or it may be thoroughly mixed with a drier material to obtain the desired water content. Material with insufficient moisture will be wetted before compaction, the amount of water to be added to be determined in each instance by the Engineer. Adequate equipment for furnishing and sprinkling water will be kept available at all times during the progress of the work.
- F. After the material has been properly spread in layers, it will then be compacted by rolling with tractor sheep's-foot roller or other types of tamping rollers until all parts of the layer have been compacted. The Contractor shall compact the roadbed layers to 100% of the maximum density determined in accordance with the requirements of the Georgia Department of Transportation, Standard Specifications, Latest Edition. The number of passes of the roller required to obtain the desired density will be as designated by the Engineer based upon soil testing performed under Section 01410. In no case will material for a following layer be placed until rolling operations have continued long enough to produce the required density. Earth-moving equipment may be routed over the work to assist in compaction.
- G. The slopes and the top of the fill will be carefully trimmed so that after making proper allowance for shrinkage they will conform to the slopes and dimensions called for on the drawings. No material will be left on the outside surfaces of the fill which is at a steeper slope than that shown on the drawings.
- H. The number, type, size and operating conditions of all equipment used in the work will be suitable for the work to be performed. Any unsuitable or inadequate equipment will be replaced.

1.06 STRUCTURAL BACKFILL

- A. All forms, debris, foreign material, etc., will be removed prior to backfilling.
- B. Moisture density determinations will be performed for each soil type to provide data for quality control, per Section 01410. The moisture content at the time of compaction will be within 3% above or below optimum moisture content which will allow the required compaction to be obtained.
- C. Material used for backfilling will be suitable, job excavated material subject to the approval of the Engineer. It will be entirely free of large clods, brush, stumps, heavy sods or growths of grass, and other

organic matter and will not contain any stones larger than 5 inches in greatest dimension.

- D. The dry, fine material will be placed in 6 inch layers and compacted to a minimum of 95 percent Standard Proctor maximum dry Density, based upon soil testing performed under Section 01410. Under pavements and floor slabs the compaction will increased to 98% of the Standard Proctor maximum dry Density for the upper 18 inches. In-place density tests should be performed every two (2) feet vertically and 2500 square feet horizontally. An experienced soil engineering technician under the supervision of the Engineer will observe the fill operations and perform sufficient in-place density tests.
- E. Compaction will be accomplished by appropriate mechanical means which must be approved by the Engineer.

PART 2 - PRODUCTS

2.01 BORROW MATERIAL

- A. Wherever the backfill or embankment requires a volume of material that is in excess of the volume of suitable material available from the authorized excavations, such excess volume will be obtained from other sources. Where borrow pits on the construction site are specifically designated on the plans, borrow excavation will be obtained therefrom; otherwise, the Contractor will provide suitable borrow material from areas accessible to the work. Before a borrow pit is opened the quality and suitability of the material to be obtained therefrom will be approved by the Engineer.
- B. Borrow pits will not be opened until the original surface has been cross-sectioned so that the volume of material removed therefrom may be accurately determined at any time as the work progresses. Borrow pits will be properly cleared and grubbed and all objectionable matter will be removed from the borrow pit material prior to its placement in the backfills.
- C. Borrow pits will be excavated so that the remaining surfaces and slopes will be reasonably smooth and even and will provide adequate drainage over the entire area. Drainage ditches will be constructed where necessary to provide outlets of water to the nearest natural channel so that the formation of pools in the borrow pit area will be avoided. Sides of borrow pit cuts will be left at two to one slope unless otherwise authorized by the Engineer.

2.02 STRUCTURAL FOUNDATION MATERIAL OR (CRUSHED STONE)

- A. Structural foundation material (crushed stone) will be placed in a minimum layer of six (6) inches under all structures and a minimum of twelve (12) inches outside from all footings unless noted otherwise by the Special Conditions or where shown on the Plans.
- B. Structural foundation material will be Type II quarry run crushed limestone or granite ranging in size from one (1) inch to a maximum size of one and one-half (1-1/2) inches. The material will be power tamped in six (6) inch layers.
- C. Structural foundation material will be used under structures when specified in the Special Conditions or where shown on the Plans in local areas where unsuitable materials such as muck or, quicksand, soft clay, or swampy material make it necessary to provide a satisfactory foundation. No separate payment will be made for structural foundation material required by the Special Conditions or where shown on the Plans.
- D. Structural foundation material used to replace unsuitable materials which were not identified by the

Special Conditions or shown on the Plans as described above will be measured for payment only in specific locations where its use is authorized in writing by the Engineer before this work is performed.

2.03 RIP-RAP

- A. All stone for rip rap will be sound, durable pieces meeting the quality requirements of Class A or B coarse aggregate and will be resistant to the action of air and water, and in all other respects suitable for use as rip rap. Materials not meeting these requirements will be not used unless approved by petro graphic analysis. Flat, slabby and shaley pieces are not acceptable.
- B. Stone Dumped Rip Rap: Stone for dumped rip rap will be processed in such a manner as to produce a quarry-run material including rock fines which will meet the gradation for the following:
 - 1. The largest pieces of material will have a maximum approximate volume of one (1) cubic foot. At least 35% of the mass will be comprised of pieces which weigh 15 pounds or more.

PART 3 - EXECUTION

3.01 DISPOSAL OF MATERIALS

- A. All materials removed by excavation which are suitable for the purpose will be used whenever practical for fills, embankments, backfilling structures, and for such other purposes as may be shown on the plans or authorized by the Engineer. All materials not used for such purposes will be considered as waste materials and disposed of by the Contractor.
- B. Waste materials may be deposited in spoil banks on the site of the work if space is available. Such on-site spoil bank locations will be authorized by the Engineer. Waste materials will not be left in unsightly piles but will be spread in uniform layers and neatly leveled and shaped. Spoil banks will be provided with adequate openings to permit surface drainage of adjacent lands.
- C. On completion of any part of the work proper disposal will be made of all surplus or unused materials within the construction limits of such work and the surface of the work left in a neat and workmanlike condition.
- D. Disposal of excavated materials will be considered an integral part of the excavation work and no separate payment therefor will be allowed.

3.02 FOUNDATION DRILLING

- A. When the excavation for foundations for buildings, tanks and other major structures is completed, the Contractor if ordered by the Engineer, will test drill these excavations. Where the foundation is in rock excavation, test holes will be drilled to a depth of not less than 6 feet below grade. In earth excavation, holes will be drilled to rock and 5 feet into such rock, except that no holes will be required to be drilled deeper than 15 feet below grade. Holes will be spaced approximately 25 feet apart. Should such drillings indicate the presence of cavities or other unsatisfactory foundation conditions; such areas will be excavated as authorized by the Engineer. Any such excavation authorized by the Engineer will be measured for payment.

3.03 SHEETING, SHORING, AND BRACING

- A. The sides of all excavations will be sufficiently sheeted, shored and braced whenever necessary to prevent slides, cave-ins, settlements or movement of the banks and to maintain the excavation clear of obstructions that will, in any way, hinder or delay the progress of the work or endanger workmen. Wood or steel sheet piling of ample design and type will be used when necessary. All sheeting, shoring and bracing will have sufficient strength and rigidity to with stand the pressures exerted and to maintain the walls of the excavation properly in place and protect all persons and property from injury or damage.
- B. Where excavations are made adjacent to existing buildings or other structures or in paved streets or alleys, the Contractor will take particular care to sheet, shore and brace the sides of the excavation adequately so as to prevent any undermining of or settlement beneath such structures or pavement. The Contractor will be liable for any damage to any structure or injury to any person that results from his operations.
- C. Sheeting, shoring or bracing materials will not be left in place unless as shown by the plans or permitted by the Engineer. Such materials will be removed in such manner as will not endanger or damage the new structure or any existing structures or property, either public or private, in the vicinity, and so as to avoid cave-ins or slides. All trench sheeting and bracing will be left in place until the trench has been backfilled one foot above the top of the pipe.
- D. Sheeting, shoring and bracing will be considered as an integral part of the work and no specific payment will be made.

END OF SECTION

SECTION 02201

EARTHWORK - PIPELINE

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Work:
 - 1. Excavation - Sanitary Sewer Pipeline
 - 2. Excavation - Water, Gas, Pressure Forcemain Pipeline
 - 3. Underwater Excavation
 - 4. Rock Excavation
 - 5. Pipe Foundation Backfill
 - 6. Trench Backfilling - Sanitary Sewer Pipeline
 - 7. Trench Backfilling - Water, Gas & Pressure Forcemain Pipeline
 - 8. Crushed Stone
 - 9. Pipe Foundation Material
 - 10. Disposal of Material
 - 11. Sheet piling, Shoring & Bracing
- B. Related Work Specified Elsewhere:
 - 1. Site Preparation: Section 02100
 - 2. Grading: Section 02930

1.02 JOB CONDITIONS

- A. All excavation work will be unclassified excavation and no specific payment will be allowed for rock excavation.
- B. The Contractor will be responsible for providing adequate sheet piling and shoring and will repair, at no cost to the Owner, all damage resulting from failure to provide adequate support.
- C. The Contractor will be responsible for damage to property and injury to persons caused directly or indirectly by blasting operations or inadequate sheet piling and shoring.

1.03 EXCAVATION - SANITARY SEWER PIPELINE

- A. Trench Excavation
 - 1. Trench excavation or excavation for pipelines will consist of excavation necessary for the construction of the pipeline (gravity sewer) and all appurtenant facilities, including manholes, fittings, valves, encasement pipe material and pipe protection as called for on the Plans. It will include backfilling and tamping of pipe trenches and around structures and the disposal of waste materials, all of which will conform to the applicable provisions of these specifications.
 - 2. Trench excavation will be open cut unless tunneling or boring is shown on the Plans. When practical the banks of the trenches will be cut in vertical, parallel planes equal distance from the pipe center line. Unless indicated otherwise on the Plans, the over all width of trench will be 24 inches for pipes 6 inches in diameter and smaller, 28 inches for pipes 8 inches in diameter, 30 inches for pipes 10 inches and 12 inches in diameter, and for pipes 15 inches in diameter and larger it will be determined from the formula $4/3d$ plus 12 inches, in which "d" is the inside diameter of the pipe in inches. When vertical banks for trench excavation are not practical to construct or create dangerous conditions to

workmen, the banks may be sloped provided that such excavation does not damage adjacent structures. When trench banks are sloped, such banks will be cut to vertical planes as specified above for that part of the ditch below the level of 12 inches above the top of the pipeline. The bottom of the trench will be level in cross section and will be cut true to the grade of the pipe except where concrete cradles or pipe encasement materials are shown on the Plans, specified, or authorized by the Engineer, in which case the excavation will extend to the bottom of the cradle or encasement materials.

3. The depth of excavation will be sufficient to provide a minimum six inches under cut below the outside barrel of the pipe. Bell holes will be excavated to provide the same clearance, and will be installed at proper intervals so that the barrel of the pipe will rest for its entire length upon the bottom of the trench. The space excavated below the barrel and bell holes will be backfilled with crushed stone, as shown on the Plans.
4. Unless otherwise directed, not more than 300 feet of trench will be opened in advance of, nor be left unfilled in the rear of, laying or jointing of any sewer line. The trench will be excavated full depth for at least 10 feet in advance of the construction of any sewer or of its foundation.
5. When muck, quicksand, soft clay, swampy or other material unsuitable for foundations or sub-grade are encountered which extend beyond the limits of the excavation, such material will be removed and replaced with pipe foundation backfill or approved granular material.
6. Pipe trenches will not be excavated more than 300 feet in advance of pipe laying; and all work will be performed so as to cause the least possible inconvenience to the public. Temporary bridges or crosswalks will be constructed where necessary to maintain vehicular or pedestrian traffic. Crosswalks and bridges will have hand rails or other features necessary for safe use by the public.
7. In all cases where materials are deposited along open trenches they will be placed so that in the event of rain, no damage will result to the work or adjacent property.

1.04 EXCAVATION - WATER, GAS & PRESSURE FORCEMAIN PIPELINE

A. Trench Excavation:

1. Trench excavation or excavation for pipelines will consist of excavation necessary for the construction of the pipeline and all appurtenant facilities, including fittings, valves, encasement pipe material and pipe protection as called for on the Drawings. It will include backfilling and tamping of pipe trenches and around structures and the disposal of waste materials, all of which will conform to the applicable provisions of these specifications.
2. Excavation of trenches for laying the pipelines specified herein will follow as closely as possible the lines shown on the Drawings or directed by the Engineer. The normal dimensions of trenches for the various sizes of pipelines to be constructed will be as that described in detail on the Drawings. Unless existing field conditions govern otherwise, forty-eight (48) inches will be the minimum allowable depth as measured from the normal ground level to top of pipe. The Contractor will have the right to dig the ditch deeper than above specified should he desire to do so in order to facilitate construction, and no additional charge will be made to the Owner for such additional depth of ditch as approved by Engineer. Where pipe is laid within the right-of-way limits of highways, roads or railroads, the minimum cover will be as specified in the permit issued by the proper authorities controlling the right-of-way, should said cover exceed that specified herein, but no additional payment will be made for such additional depth of trench.
3. Trench excavation will be open cut unless tunneling, boring or horizontal directional drilling is shown on the Drawings. When practical the banks of the trenches will be cut in vertical, parallel planes equal distance from the pipe center line. When sheeting is used, the distance between vertical planes will be measured from the inside faces of the sheeting. When vertical banks for trench excavation are not practical to construct or create dangerous conditions to workmen, the banks may be sloped provided that such excavation does not damage adjacent structures. When trench banks are sloped, such banks will be cut to vertical planes as specified above for that part of the ditch below the level of twelve (12) inches above the top of the pipeline. The bottom of the trench will be level in

cross section and will be cut true to the grade of the pipe except where concrete cradles or pipes encasement materials are shown on the Drawings, specified or authorized by extended to the bottom of the cradle or pipe encasement materials.

4. Bell holes will be excavated at all locations of fittings, valves and other obstacles not shown on the Drawings along with couplings used in composite pipeline construction. Bell holes will be of sufficient depth to permit the pipeline to rest on firm trench bottom for the full length of the barrel with couplings, clear of contact with trench and bell hole bottoms.
5. At any draw, creek, gully crossing or other place where rough terrain prevails requiring a sag-bend or deflection of pipe greater than $2\frac{1}{2}^{\circ}$, the trench will be graded to avoid the use of bends or deflections in excess of $2\frac{1}{2}^{\circ}$ unless otherwise authorized by the Engineer. The minimum allowable cover for overbends will be forty-eight (48) inches.
6. Where the pipelines specified herein cross other pipelines, drain tiles, sewers conduits, or similar underground structures, the pipe will be laid so as to permit a minimum clearance of one (1) foot between the two structures, but no additional payment will be made for such additional depth of trench.
7. When muck, quicksand, soft clay, swampy or other material unsuitable for foundations or subgrade are encountered which extend beyond the limits of the excavation, such material will be removed and replaced with pipe foundation backfill or approved granular material.
8. In all cases where materials are deposited along open trenches, they will be placed so that in the that in the event of rain, no damage will result to the work or adjacent property.

1.05 UNDERWATER EXCAVATION

- A. Where the excavation area shown on the plans is under the water surface or near the banks of a flowing stream or other body of water, the Contractor may adopt and carry out any method he may deem feasible for the performance of the excavation work and for the protection of the work thereafter; provided the method and equipment to be used results in completed work which complies with the specifications and is acceptable to the Engineer. In such cases, the excavation area will be effectively protected from damage during the excavation period and until all contemplated construction work therein has been completed. The cost of all temporary construction work necessary or incidental thereto, including the cost of installing and removing sand bags, coffer dams, sheet piling excavation and backfill, pumping and dewatering, will be considered as an integral part of the cost of excavation and no separate payment therefore will be allowed or made.

1.06 ROCK EXCAVATION

- A. All excavation work will be unclassified and no specific payment will be allowed for rock excavation, unless a Bid Item for Unclassified Rock Excavation is provided in the Bid Form. Rock shall be defined as any material, which occurs in its original position in ledges or bedded deposits of such hardness or texture that cannot be loosened, broken or removed without the use of drilling and blasting methods.
- B. Rock encountered in trench excavation for pipelines will be removed for the overall width of trench and to a depth of 6 inches below the bottom of the pipe for pipes smaller than 24" in diameter and to a depth of 12 inches below the bottom of the pipe for pipes greater than 24" in diameter. The space excavated below the barrel will be backfilled with crushed stone as shown on the Plans. All of the applicable provisions of the above specifications for excavation and sheeting, shoring, and bracing will apply to rock excavation.
- C. Drilling and blasting methods used in rock excavation will be optional with the Contractor, but will be conducted with due regard to the safety of persons and property in the vicinity of the work and in strict conformity with all laws, ordinances, or regulations governing blasting and the use of explosives. Rock

excavation near existing structures of all types will be conducted with the utmost care, and every precaution will be taken to prevent damage to such structures. Any damage or injury of whatever nature to persons or property caused directly or indirectly by blasting operations will be promptly repaired, replaced or compensated for by the Contractor at his own expense and to the satisfaction of the persons injured or the Owners of the property damaged.

1.07 PIPE FOUNDATION BACKFILL

- A. If, after excavating the pipe trench in accordance with 1.03 and 1.04 of these Specifications, the Engineer determines the sub grade to have inadequate bearing capacity, the unstable material will be removed and replaced with pipe foundation material per 2.02 of these Specifications, until a stable sub grade is achieved. Pipe foundation material will be placed, for the full width excavated in horizontal layers not to exceed six inches. Each layer will be thoroughly compacted until the sub grade elevation is reached.

1.08 TRENCH BACKFILLING - SANITARY SEWER PIPELINE

- A. Before backfilling is begun, all extraneous material (except bracing and sheeting) will be removed from the excavation. Backfilling will not be commenced over any sewer line or structure until such sewer line or structure or portion thereof has been approved for backfilling by the Engineer. Only suitable materials will be used for backfilling and the Engineer will be the sole judge of the suitability of materials and may require such selection of materials as may be necessary to insure a satisfactory backfill.
- B. After the pipe has been placed on the prepared #57stone base, identical #57stone will be placed on both sides of the pipe to full width of the trench and thoroughly and carefully tamped or rammed around the pipe with approved power tools up to the top of the pipe for ductile iron pipe and to six (6) inches above the top of pipe for PVC pipe, refer to 2.01 A of these Specifications. Careful attention will be given to compacting the stone under the haunches of the pipe. Loose, fine earth or crushed stone, as called for on the Plans, will then be carefully deposited and compacted in six (6) inch layers to a plane twelve (12) inches over the top of the pipe. This earth material will be free of large clods, stones, vegetable matter, debris, and/or objectionable material. Particular care will be exercised to prevent damage to pipes and joints by tamping and compacting. The remaining backfill, except under paved streets or where noted on the Plans, may be pushed into the trench loose. Normally the trench will be backfilled so that there will be an eight (8) inch mound over the pipe above the surrounding ground, and the backfill must be trimmed in such a manner as to meet the approval of the Engineer.
- C. Where the trench extends along or across streets, roadways, sidewalks or structures the trench will be backfilled above the pipe bedding with #8910 stone, refer to 2.01A of these Specifications. Backfilling will be done in layers not exceeding six (6) inches and each layer thoroughly compacted with vibratory compaction equipment before the succeeding layer is placed. As noted on drawings, pipe under structures will be encased in concrete in accordance with the Plans at no additional payment.
- D. Where the pipe trenches are cut across or along pavement, the Contractor will construct a permanent replacement surface over the compacted Type I crushed stone backfill in accordance with Section 02500 - Pavement Replacement and SD 320 - Pavement Replacement Detail. Payment is based on the Contract, refer to Section 00300.
- E. From a plane twelve (12) inches over the top of the pipe upward, except under streets, usable alleys, roadways, or sidewalks, the loosely placed backfill will consist of "trench spoil" except that a broken stone content of not more than fifty (50) percent by volume will be allowed of stones not exceeding six (6) inches maximum dimension, provided these stones are thoroughly mixed with earth.

- F. Where excavation has been made within the limits of easements across private property, the top one (1) foot of backfill material will consist of fine loose earth free of large clods, vegetable matter, debris, stones, and/or objectionable materials.
- G. Terraces and drainage ditches will be built in such places as the Engineer may deem necessary on hillside or steep inclines so as to keep the backfill and the right-of-way from eroding or washing. on hillsides, breakers built of suitable material such as sacks or poles will be placed in the ditch before backfilling to prevent water washing down the trench. These breakers are to be furnished and placed by the Contractor without cost to the Owner. Backfill will be completed in such a manner as to conform to the general drainage and improvements of the adjoining and existing right-of-way.

1.09 TRENCH BACKFILLING - WATER, GAS & PRESSURE FORCEMAIN PIPELINE

- A. Immediately following the lowering of the pipe into the trench, each joint or section will be center filled in order to prevent floating of pipe in case water enters the ditch from any cause. The remaining backfill will be made as soon as possible thereafter so that a minimum amount of trench wherein the pipe has been lowered will remain open at any time. It will be carefully placed so as to not cause damage to the protective coating.
- B. Where the trench extends along or across city streets, roadways, usable alleys, or sidewalks, the trench will be completely backfilled with #8910, refer to 2.01 A of the Specifications, as shown on the Drawings detail sheets. No separate payment will be made for the stone, concrete and paving replacement. The backfill will be deposited in six (6) inch layers (before compaction) and thoroughly compacted vibratory compaction equipment. See Part F this Section for trenches along State Highway right-of-way.
- C. Unless otherwise specified in the Special Conditions or shown on the Drawings, other trenches will be backfilled with material consisting dry, fine earth free of large clods, stones, vegetable matter, debris, and/or other objectionable material. Backfilling of all pipe will be done in layers not exceeding six (6) inches and each layer thoroughly tamped before the succeeding layer is placed. See the Drawings for details on pipe trenches and backfilling. This method of backfilling will continue until backfill is a minimum of one (1) foot over the top of the pipe. The remaining backfill may be pushed into the trench loose. Normally the trench will be backfilled so that there will be not less than an eight (8) inch crown over the pipe above the level of the surrounding ground, and the backfill must be trimmed up in such a manner as to meet the approval of the Engineer.
- D. Where excavation has been made within the limits of easements across private property, the top one (1) foot of backfill material will consist of fine loose earth free from large clods, vegetable matter, debris, stones, and/or other objectionable materials.
- E. Where the pipe trenches are cut across or along pavement, the Contractor will construct a permanent replacement surface over the compacted Type I crushed stone backfill in accordance with Section 02500 - Pavement Replacement and SD 320 - Pavement Replacement Detail. Payment is based on the Contract, refer to Section 00300.
- F. Terraces and drainage ditches will be built in such places as the Engineer may deem necessary on hillside or steep inclines so as to keep the backfill and the right-of-way from eroding or washing. on hillsides, breakers built of suitable material such as sacks or poles will be placed in the ditch before backfilling to prevent water washing down the trench. These breakers are to be furnished and placed by the Contractor without cost to the Owner. Backfill will be completed in such a manner as to conform to the general drainage and improvements of the adjoining and existing right-of-way.

PART 2 - PRODUCTS

2.01 CRUSHED STONE

- A. Crushed stone will be limestone or granite. Pipe bedding crushed stone shall be #57 stone and trench backfill under roads, streets, etc. and above the pipe bedding will be #8910 stone.

2.02 PIPE FOUNDATION MATERIAL

- A. Pipe foundation material will be Type II quarry run crushed limestone or granite ranging in size from one (1) inch to one and one-half inches. The material will be power tamped in six (6) inch layers.
- B. Pipe foundation material will be used in local areas where unsuitable materials such as muck, quicksand, soft clay, or swampy material make it necessary to provide a satisfactory pipe foundation.
- C. Pipe foundation material used as described above will be measured for payment only in specific location where its use is authorized in writing by the Engineer before this work is performed.

PART 3 - EXECUTION

3.01 DISPOSAL OF MATERIALS

- A. All materials removed by excavation which are suitable for the purpose will be used when ever practical for fills, embankments, backfilling pipe trenches, and for such other purposes as may be shown on the plans or authorized by the Engineer. All materials not used for such purposes will be considered as waste materials and disposed of by the Contractor.
- B. Waste materials may be deposited in spoil banks on the site of the work if space is available. Such on-site spoil bank locations will be authorized by the Engineer. Waste materials will not be left in unsightly piles but will be spread in uniform layers and neatly leveled and shaped. Spoil banks will be provided with adequate openings to permit surface drainage of adjacent lands.
- C. On completion of any part of the work proper disposal will be made of all surplus or unused materials within the construction limits of such work and the surface of the work left in a neat and workmanlike condition.
- D. Disposal of excavated materials will be considered an integral part of the excavation work and no separate payment therefore will be allowed.

3.02 SHEETING, SHORING AND BRACING

- A. The sides of all excavations will be sufficiently sheeted, shored and braced whenever necessary to prevent slides, cave-ins, settlements or movement of the banks and to maintain the excavation clear of obstructions that will, in any way, hinder or delay the progress of the work or endanger workmen. Wood or steel sheet piling of ample design and type will be used when necessary. All sheeting, shoring and bracing will have sufficient strength and rigidity to withstand the pressures exerted and to maintain the walls of the excavation properly in place and protect ail persons and property from injury or damage.
- B. Where excavations are made adjacent to existing buildings or other structures or in paved streets or alleys. the Contractor will take particular care to sheet, shore and brace the sides of the excavation adequately

so as to prevent any undermining of or settlement beneath such structures or pavement. The Contractor will be liable for any damage to any structure or injury to any person that results from his operations.

- C. Sheeting, shoring or bracing materials will not be left in place unless as shown by the Plans or permitted by the Engineer. Such materials will be removed in such manner as will not endanger or damage the new structure or any existing structures or property, either public or private, in the vicinity, and so as to avoid cave-ins or slides. All trench sheeting and bracing will be left in place until the trench has been backfilled one foot above the top of the pipe.
- D. Sheeting, shoring and bracing will be considered as an integral part of the Work and no specific payment will be made.

END OF SECTION

SECTION 02930

GRASSING

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. The Work under this section includes, but is not limited to:
 - 1. Grassing Right-of-Way
 - 2. Restoring sodded lawns and grassed areas
 - 3. Shrubbery and ornamental Trees
- B. Related Work specified elsewhere:
 - 1. Section 02100 - Site Preparation

1.02 SUBMITTALS

- A. Submit to the Engineer, prior to planting grasses, an affidavit from the nursery supplying the materials that all materials supplied comply with the grade standards, type and species as specified.

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Take all necessary precautions not to disturb or damage subsurface improvement such as underground cables, utility lines, tanks, drainage lines, etc. All damage to underground utilities or subsurface improvements shall be repaired at the Contractor's expense.
- B. Planting may be done whenever the weather and soil conditions are favorable or as otherwise authorized by the Owner or his representative and with the consent of the Contractor.

1.04 JOB CONDITIONS

- A. Protect newly seeded areas from all traffic by erecting temporary fences and signs. Protect slopes from erosion. Properly and promptly repair all damaged work when required.
- B. At the time of final inspection of work, but before final acceptance, remove all debris, rubbish, excess materials, tools and equipment from landscaped areas.

1.05 GUARANTEE, MAINTENANCE, AND RESEEDING

- A. Guarantee: In addition to the guarantees specified in the General Conditions, comply with the following requirements:
 - 1. All seeding shall be guaranteed by the General Contractor to be in a vigorous growing condition.
 - 2. All seeding (grass) shall be guaranteed for one growing cycle including one summer and one winter season.
 - 3. All necessary reseeding shall be made at the first succeeding planting season and carry the guarantee of 1.05.A.1 and 1.05.A.2 of this Section. Any Work damaged during replacement operations shall be restored and all paved and sidewalk areas cleaned.

- B. Maintenance
 - 1. Maintenance shall begin immediately after each area is seeded and shall continue for a period extending through one full growing season after the last plant is installed.
- C. Replacement: During the maintenance-guarantee period grassed areas which die or which, in the opinion of the Engineer, are in an unhealthy or badly growth condition shall be reseeded by the Contractor just as soon as is reasonably possible after their unsatisfactory condition is evident. No reseeding will be required in any season definitely unfavorable for seeding the kind of grasses involved.

PART 2 - PRODUCTS

2.01 TOPSOIL:

- A. Stockpiled topsoil from the jobsite.

2.02 LIMESTONE:

- A. Limestone shall be agricultural grade dolomitic lime stone ground sufficiently fine so that at least 50 percent will pass a No. 8 sieve and shall contain not less than 50 percent calcium carbonate equivalent. Moisture content, at time of delivery shall not exceed 8 percent.

2.03 FERTILIZER

- A. Commercial fertilizers shall be in compliance with the State fertilizer laws, rules, regulations, etc. Fertilizer numerical designations indicate the respective minimum percentages of total nitrogen, available phosphoric acid, and water-soluble potash, contained in the fertilizer.
- B. Fertilizer shall be Type 1 with a chemical designation of 5-10-5 unless otherwise approved by the Engineer. At least 50 percent of the nitrogen content shall be from a nonwater-soluble organic source or, from a urea-formaldehyde source provided it is not derived from a waste product of the plastic industry.

2.04 MULCH

- A. Mulch for seeded areas shall be high-quality, air dried straw or hay, consisting of oat, rye, or wheat straw, and shall be free from noxious weeds and weed seeds detrimental to growth of the specified plants. only undeteriorated mulch which can be readily cut into the soil shall be used.
- B. Other mulching materials shall not be used without written approval of the Engineer.

2.05 WATER

- A. Water to be used in grassing operations shall be free of excess and harmful chemicals, acids, alkalies, oils or any substance which might be harmful to plant growth or obnoxious to residents or operating personnel. Salt water shall not be used.

2.06 GRASS SEED

- A. All grass seed shall meet the requirements of the State Department of Agriculture and all applicable state laws. The seed shall be of the best grade and of known vitality, purity, and germination and shall be delivered in standard sealed containers bearing seed tags as required by law showing percentage of germination, purity of seed, and percentages of weed content. All seeds shall be reasonably free of noxious weeds and total weed content shall not exceed one percent. Seed which has become wet, moldy or otherwise damaged in transit or storage will not be acceptable.
- B. Seeding for all areas (except slopes steeper than 3:1) shall be applied at a rate of pounds per acre according to following seasonal limitation table:

Seeds	Feb.15 - Apr.15	Apr.16 - Aug.31	Sep.1 - Nov.15
Common Burmuda Grass (Hulled)	4	4	--
Common Burmuda Grass(Unhulled)	4	4	--
Tall Fescue	--	--	50
Weeping Lovegrass	--	--	20
White Dutch Clover	6	--	6
Pensacola Bahia	50	50	--
Korean Lespedeza	20	--	--

- C. Seeding for all slopes steeper than 3:1 shall be applied at a rate of pounds per acre according to following seasonal limitation table:

Seeds	Feb.15-Jun.30 (lbs/acre)	Jul.1 -Aug.31 (lbs/acre)	Sep.1-Nov.15 (lbs/acre)
Virgata Lespedeza	50	75	75
Common Bermuda Grass (Hulled)	--	8	--
Common Bermuda Grass(Unhulled)	--	--	8
Tall Fescue	--	--	30
Weeping Lovegrass	4	4	4

PART 3 - EXECUTION

3.01 PREPARATION

- A. Stockpiled topsoil shall be evenly spread on the disturbed area to a minimum depth of 3 inches.
- B. Loosen topsoil by tilling or disk harrowing to a suitable depth and smooth out all surface irregularities resulting therefrom. Leave area free of rocks, hard soil clods, etc., which will not pass through the tines of a standard garden rake.

3.02 APPLICATION

- A. Seed: Seed shall be applied at a rate in pounds per acre and with the seasonal limitation shown in the tables shown in Part 2.06.B. and Part 2.06.C. or these specifications.
- B. Fertilizer and Limestone
 - 1. The County Agricultural Agent for the County in which the project is located shall be contacted for his recommendations regarding application of fertilizer and limestone and his recommendation shall be followed.
- C. Lawns
 - 1. Sodded lawns and areas: In areas where sodded lawns are maintained, the Contractor will remove the sod with topsoil and replace it after construction. The Contractor will be responsible for maintaining and protecting the sod until it has been relaid or the Contractor shall purchase sod of the same grass and relay it solid after backfilling. The Contractor shall water the grass a minimum of three (3) times weekly until the sod is rerooted or for a period of two (2) months. All hybrid and special grasses shall be removed as sod.
 - 2. Lawns and Grassed Areas: Where lawn grass cannot be removed as sod, the Contractor shall remove the topsoil during construction and stockpile it. After construction, the Contractor shall spread the topsoil over the construction area. The Contractor shall seed the lawn with the same kind of grass as the original lawn during the appropriate planting period for that grass. The grass shall be maintained by the Contractor and watered a minimum of three (3) times weekly until a stand is well established or for a period of two (2) months.
 - 3. All lawns and grassed areas shall be restored to a condition equal to or better than the original conditions and to the satisfaction of the property owner.

3.03 SHRUBBERY AND ORNAMENTAL TREES

Any shrubbery or ornamental tree removed or damaged by the Contractor shall be replaced in kind to the satisfaction of the Owner.

3.04 PAYMENT

- A. Payment for grassing (including all preparation and associated materials) will be included in the Lump Sum Bid. No separate payment will be made for restoring lawns, sodding lawns, or replacing shrubbery and ornamental trees. Such costs will be included in the Lump Sum.

END OF SECTION

DIVISION 3
CONCRETE

SECTION 03100

WOOD FORMS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Definitions:
 - 1. Concrete Surfaces: Formed surfaces where appearance is not of major importance.
- B. Related Work Specified elsewhere
 - 1. Section 01340 - Shop Drawings, Product Data and Samples
 - 2. Section 03200 - Reinforcing Steel
 - 3. Section 03250 - Concrete Accessories
 - 4. Section 03300 - Cast-in-Place Concrete

1.02 QUALITY ASSURANCE

- A. Design Criteria:
 - 1. General: Conform to ACI 347, Chapter 1 - Design.
 - 2. Plywood: Conform to tables for form design in APA Form V 34S, including strength.
- B. Requirements of Regulatory Agencies: Erect forms to meet requirements of Standard Building Code.
- C. Allowable Tolerances:
 - 1. Concrete: Conform to ACI 347, 2.4.

1.03 SUBMITTALS:

- A. Product Data
 - 1. Submit manufacturer's product data on forming accessories.

1.04 JOB CONDITIONS

- A. Unless noted otherwise on Drawings or elsewhere in these Specifications, all formwork will conform to non-architectural concrete requirements.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Conform with ACI 347, Chapter 3, Materials and Form Work
- B. Lumber:
 - 1. Softwood framing lumber: Kiln dried, PS 20.
 - 2. Boards less than 1½ in. thick and 2 in. wide, used for basic forms and form liners: Kiln dried.
 - 3. Grade marked by grading rules agency approved by American Lumber Standards Committee.
 - 4. Light framing or studs for board or plywood forms, 2 in. to 4 in. in width and thickness. Construction standard grade.

- 5. Boards for basic forms or form liners: Construction standard.
- 6. Board surface: smooth.
- C. Plywood:
 - 1. Exterior type softwood plywood, PS 1.
 - 2. Each panel stamped or branded indicating veneer grades, species, type, and identification.
 - 3. Overlay plywood for concrete surfaces:
 - a. Panel veneer grades: B - B.
 - b. Mill-oiled sides and mill-sealed edges of panels.
- D. Corner Formers:
 - 1. Profile type: chamfered.
 - 2. Material: wood.
- E. Ties:
 - 1. Material: Carbon steel
 - 2. Type: Snap ties.
 - 3. Depth of breakback: 1".
 - 4. Maximum diameter: ¼ in.
- F. Form Coatings:
 - 1. Non-staining.
- G. Sealant: As recommended by form manufacturer.
- H. Steel Form Systems: May be allowed as an alternative to other systems.

PART 3 - EXECUTION

3.01 GENERAL:

- A. Conform to ACI 347, Chapter 2, Construction
- B. Framing, Bracing, and Plywood Form Liners: APA Form V 345.

END OF SECTION

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. The Work under this section includes, but is not limited to the following:
 - 1. Concrete materials
 - 2. Concrete
 - 3. Mixing, placing and curing cast-in-place concrete
 - 4. Finishing concrete
- B. Related work specified elsewhere:
 - 1. Section 01340: Shop Drawings, Product Data and Samples
 - 2. Section 01410: Testing Laboratory Services
 - 3. Section 02200: Earthwork-General
 - 4. Section 03100: Wood Forms
 - 5. Section 03200: Reinforcing Steel
 - 6. Section 03250: Concrete Accessories
 - 7. Section 03600: Grout
- C. Design, the material, and workmanship will be in accordance with Specifications and the current edition of the following standards, unless otherwise modified on the Drawings or in the Specifications:
 - 1. ACI 318 Building Code requirements for reinforced concrete
 - 2. ACI 315 Manual of Standard Practice for Detailing Reinforced Concrete Structure
 - 3. ACI 301 Specifications for Structural Concrete for Buildings
 - 4. CRSI Recommended Practice for Placing Reinforcing Steel

1.02 QUALITY ASSURANCE

- A. The Engineer will have access to and have the right to observe the premises and materials of suppliers or manufacturers providing products under these Specifications.
- B. Unless otherwise noted on the Drawings, all concrete will be Class A concrete.
- C. Quality control testing during construction:
 - 1. Owner will employ a testing laboratory to perform tests and to submit test reports. See Section -01410 for further requirements.
 - 2. Sampling and testing for quality control during placement of concrete may include the following, as directed by Engineer.
 - a. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.
 - b. Slump: ASTM C 143; one test at point of discharge for each load of concrete; additional tests when concrete consistency seems to have changed.
 - c. Air Content: ASTM C 231 pressure method for normal weight concrete; one for each of compressive strength test specimens.
 - d. Concrete Temperature: Test hourly when air temperature is 40° F (4°C) and below, when 80° F (27° C) and above, and each time a set of compression test specimens is made.
 - e. Compression Test Specimen: ASTM C 31; one set of 4 standard cylinders for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory cured test

- specimens except when field cure test specimens are required.
- f. Compressive Strength Tests: ASTM C 39; one set for each day's pour exceeding 5 cu. yds. plus additional sets for each 50 cu. yds. more than the first 25 cu. yds. of each concrete class placed in any one day; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.
 - g. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength, and no individual strength test result falls below specified compressive strength by more than 500 psi.
- 3. Test results will be reported in writing to Engineer, Owner, Ready-Mix Producer, and Contractor within 24 hours after tests. Reports of compressive strength tests will contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day tests and 28-day tests.
 - 4. Additional Tests: The testing service will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Engineer. Testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed. Contractor will pay for such tests when unacceptable concrete is verified.
 - 5. Concrete structures that are to contain water, sludge, or other liquids, such as settling or digestion tanks, coagulation basins, reservoirs, filter basins and similar structures will be hydrostatically tested for leakage. Testing will consist of filling each structure with water so that the Engineer can observe any leaks when the structure has been full of water from 24 to 48 hours. When practical, such tests will be made before backfill is placed around the structure. All leaks in the structure are to be repaired in an approved manner. Patching or caulking or any other method of repair on the outside or dry side of walls will not be permitted. Damp areas or spots on permanently exposed walls, such as in filter galleries, will be considered leaks. For structures below finished grade, hydrostatic testing may be omitted when specifically authorized by the Engineer.
- D. Work determined by the Engineer to be unsatisfactory or damaged will be removed and replaced by the Contractor.
- E. All concrete trucks will meet ASTM Standard and ACI Concrete Inspection. Counters, meters, water gauge, etc. will be in proper working order.
- F. Allowable Tolerances: Flatwork true to plan 1/8" in 10 feet.

1.03 SUBMITTALS

- A. Submit product data as specified in Section 01340.
- 1. Submit concrete mix design.
 - a. Break down material content per cubic yard of concrete.
 - b. Show dry weight of cement.
 - c. Show saturated, surface-dried weights of fine and coarse aggregate.
 - d. Show weight of water.
 - e. List quantities, types, and names of admixtures.
 - 2. Submit trial mix laboratory reports.
 - 3. Submit product data on each admixture proposed.
 - 4. Submit certification of aggregate quality. Include statement for an independent lab that aggregates used are not reactive.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Cement: Store in weather tight enclosures and protect against dampness, contamination, and warehouse set.
- B. Aggregates: Stock pile to prevent excessive segregation, or contamination with other materials or other sizes of aggregates. Use only one supply source for each aggregate stock pile.
- C. Admixtures: Store to prevent contamination, evaporation, or damage. Protect liquid admixtures from freezing or harmful temperature ranges. Agitate emulsions prior to use.
- D. Batching: Concrete batching equipment used on the jobsite will have a minimum capacity to produce 250 cubic yards of concrete in an eight (8) hour period.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Allowable Concrete Temperatures: concrete will be placed only when the temperature is above 40° F. The concrete will be maintained at a temperature of not less than 50° F nor more than 90° F for a period not less than 72 hours.
- B. Do not place concrete during rain, sleet, or snow unless protection is provided.

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS

- A. Portland Cement
 - 1. All Water Bearing Structures: Type I/II ASTM C150 including optional tables -Latest Revision. Tricalcium Aluminate will not exceed 5%.
 - 2. Non Water Bearing Structures: ASTM C150 Type I may be used.
 - 3. Use one brand of cement throughout project unless otherwise acceptable to Engineer.
- B. Fly Ash: ASTM C 618, Type C or Type F.
- C. Normal Weight Aggregates: ASTM C 33 and as herein specified. Provide aggregates from a single source for exposed concrete.
 - 1. For exterior exposed surfaces, do not use fine or coarse aggregates containing spell-causing deleterious substances.
 - 2. Local aggregates not in compliance with the soundness and durability requirements of this standard will not be used except with prior written approval of the Engineer, and provided it can be shown by special testing or a record of past performance that these aggregates produce concrete of adequate strength and durability. Aggregate soundness testing for fine and coarse aggregates will be in accordance with ASTM C88 using a sodium sulfate solution.
- D. Fine Aggregates: ASTM C 33. Content of material passing a number 200 sieve will not exceed 4%. Use only clean, sharp, natural sand.
- E. Coarse Aggregate: Use only natural gravels, a combination of gravels and crushed gravels, crushed stone, or a combination of these materials containing no more than 15% flat or elongated particles (long dimension more than five times the short dimension). Content of material passing a number 200 sieve will not exceed 0.5%.

- F. Water will be clean and potable.
- G. Admixtures, General: Provide concrete admixtures which contain not more than 0.1% chloride ions.
 - 1. Water-Reducing Admixture: ASTM C494, Type A.
 - 2. Air-Entraining Admixture: ASTM C260, certified by manufacturer to be compatible with other required admixtures.
 - 3. High-Range Water-Reducing Admixture (Super Plasticizer): ASTM C494, Type F or Type G.
 - 4. Water-Reducing, Accelerating Admixture: ASTM C494, Type E.
 - 5. Water-Reducing, Retarding Admixture: ASTM C494, Type D.

2.01 RELATED MATERIALS

- A. Granular Base: Provide evenly graded mixture of fine and coarse aggregates with maximum particle size of 1" to provide, when compacted, a smooth and even surface below slabs on grade. Granular base will be 6" thick.
- B. Sand Cushion: Provide 2" of clean, manufactured or natural sand between vapor barrier and underside of slab.
- C. Vapor Retarder: Provide vapor retarder cover over prepared base material where indicated below slabs on grade. Use only materials that are resistant to deterioration when tested in accordance with ASTM E154. Vapor retarder will consist of a polyethylene sheet not less than 6 mils thick.
- D. Absorptive Cover: Provide burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2, where required.
- E. Moisture-Retaining Cover: Provide one of the following complying with ASTM C171, where required:
 - 1. Waterproof paper
 - 2. Polyethylene-coated burlap
- F. Liquid Membrane-Forming Curing Compound: Provide liquid type membrane-forming curing compound complying with ASTM C309, Type I, Class A where required. Moisture loss will not exceed 0.055 gr./sq. cm. when applied at 200 sq. ft./gal.
- G. Water-Based Acrylic Membrane Curing Compound: ASTM C309, Type I, Class B.
- H. Bonding Compound: Polyvinyl acetate or acrylic base.
- I. Epoxy Adhesive: ASTM C881, two-component material suitable for use on dry or damp surfaces. Provide material Type, Grade, and Class to suit project requirements.
- J. Sealer: The Ashford Formula, as manufactured by Curecrete Chemical Company, Inc., or equal.
- K. Forms will be new material at project start. Undamaged forms, meeting the requirements of allowable tolerances, may be reused in accordance with Paragraph 3.10.

2.03 PROPORTIONING AND DESIGN OF MIXES

- A. An independent testing facility acceptable to Engineer for preparing and reporting proposed mix designs will prepare design mixes for each type and strength of concrete by laboratory trial batch methods as specified in ACI 301. The testing facility will not be the same as used for field quality control testing.

- B. Design mixes will provide normal weight, air-entrained concrete with the following properties, as indicated on Drawings and schedules, per ASTM C94 latest revision or its equivalent.
1. Cement: Type I/II ASTM C150 including optional tables - Latest Revision. Tricalcium Aluminate for all water bearing structures and surfaces will not exceed 5%. Type I may be used for non-water bearing structures.
 2. Admixtures:
 - a. Air entraining: ASTM C 260 - Latest Revision
 - b. Pozzolans: ASTM C 618 - Latest Revision
 - c. Admixtures other than air-entraining agents and pozzolans will be used only when authorized in writing by the Engineer.
 3. Coarse Aggregate: Size number 57, ASTM C33 - Latest Revision.
 4. Fine Aggregate: ASTM C33 - Latest Revision.
 5. Slump: 3 - 5 inches.
 6. Air Content: ASTM C94 - Latest Revision. 6% Air Entrainment + 1 %.
 7. Mix Proportioning: One Cubic Yard

Item	Class A	Class B
a. Minimum 28 day compressive strength(psi)	4,000	3,000
b. Cement content (lbs./CY concrete)		
Minimum	517	423
Maximum	N/A	517
c. Pozzolan/fly ash (lbs./CY concrete)	100	N/A
d. Max. Water content (gal./CY concrete)	*	7.5
e. Air entrainment in fresh mix	ASTM C94	0

* water to cement (w:c) for all water bearing structures and surfaces will be in the range of 0.45 to 0.48

- C. For concrete surfaces designated to receive a Heavy Duty Concrete Floor Surfacing (as specified in Section 03320), the mix design will be subject to the following additional constraints:
1. Slump will not exceed 3".
 2. Air content will not exceed 3%.
 3. Calcium chloride, or admixtures containing calcium chloride, will not be used.
 4. Admixtures which tend to increase bleeding will not be used.

2.05 CONCRETE MIXING

- A. Ready-Mix Concrete: Comply with requirements of ASTM C94, and as specified.
- B. Mix concrete only in quantities for immediate use.
- C. Do not retemper or use set concrete.
- D. Type I/II cement will be used for all sewage-containing structures.

PART 3 - EXECUTION

3.01 GENERAL

- A. Coordinate the installation of joint materials and vapor retarders with placement of forms and reinforcing steel.

3.02 JOINTS

- A. Construction Joints: Locate and install construction joints as indicated or, if not indicated, locate so as not to impair strength and appearance of the structure, as acceptable to Engineer.
- B. Provide keyways as shown in the Drawings details in construction joints in walls and slabs and between walls and footings.
- C. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints except as otherwise indicated. Do not continue reinforcement through sides of strip placements.
- D. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.
- E. Provide waterstops in construction joints as indicated. Install waterstops to form continuous diaphragm in each joint. Make provisions to support and protect exposed waterstops during progress of work. Field-fabricate joints in waterstops in accordance with manufacturer's printed instructions.
- F. Isolation Joints in Slabs-on-Ground: Construct isolation joints in slabs-on-ground at points of contact between slabs-on-ground and vertical surfaces, such as equipment bases and elsewhere as indicated.

3.03 INSTALLATION OF EMBEDDED ITEMS

- A. General: Set and build into work anchorage devices and other embedded items required for other work that is attached to or supported by cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of items to be attached thereto.
- B. Forms for Slabs: Set edge forms, bulkheads, and intermediate screed strips for slabs to obtain required elevations and contours in finished surfaces. Provide and secure units to support screed strips using strike-off templates or compacting-type screeds.
- C. Chamfer: All exposed formed concrete edges will have $\frac{3}{4}$ " chamfer unless otherwise noted.

3.04 PREPARATION OF FORM SURFACES

- A. General: Coat contact surfaces of forms with an approved, nonresidual, low-VOC, form-coating compound before reinforcement is placed.
- B. Do not allow excess form-coating material to accumulate in forms or to come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.
- C. Coat steel forms with a nonstaining, rust-preventative material. Rust-stained steel formwork is not acceptable.

3.05 CONCRETE PLACEMENT

- A. Inspection: Prior to the Contractor placing order for concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. In addition to other equipment required for placement, the Contractor will provide standby vibrators (minimum of two (2) units) during all concrete placement.
- B. General: Comply with ACI 304, "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete", and as herein specified.
- C. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete that has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete to avoid segregation at its final location.
- D. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while the preceding layer is still plastic, to avoid cold joints. When placing concrete, use of aluminum pipe or other aluminum conveying devices will not be permitted. Maximum height of concrete free fall will not exceed 5 feet. Use placement devices such as chutes, pouring spouts, and pumps as required. Concrete which has contained its water content for more than 50 minutes will not be placed unless a variance is approved by the Engineer.
 - 1. Consolidate placed concrete by hand held mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI 309. Form vibrators are prohibited.
 - 2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.
- E. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.
 - 1. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - 2. Bring slab surfaces to correct level with straightedge and strike off. Use bull floats or derbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.
 - 3. Maintain reinforcing in proper position during concrete placement.
- F. Cold-Weather Placing: Comply with provisions of ACI 306, and as follows: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
- G. When air temperature has fallen to or is expected to fall below 40° F (4° C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50° F (10° C) and not more than 80° F (27° C) at point of placement.
 - 1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 - 2. Do not use calcium chloride, salt, and other materials containing antifreeze agents or chemical accelerators unless otherwise accepted in mix designs.

3. The concrete will be maintained at a temperature of not less than 50° F nor more than 90° F for a period not less than 72 hours.
- H. Hot-Weather Placing: When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.
1. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90° F (32° C). Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water. Use of liquid nitrogen to cool concrete is Contractor's option.
 2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
 3. Use water-reducing or set retarding admixture when required by high temperatures, low humidity, or other adverse placing conditions, when acceptable to Engineer.

3.06 FINISH OF FORMED SURFACES

- A. Rough Form Finish will be acceptable for formed concrete surfaces not exposed to view in the finish work or concealed by other construction. The concrete surface may show the texture imparted by the form-facing material used. Tie holes and defective areas will be repaired and patched and fins and other projections exceeding ¼ " in height rubbed down or chipped off.
- B. Smooth Form Finish will be given to formed concrete surfaces to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, damp-proofing, veneer plaster, painting, or other similar system. The as-cast concrete surface will be obtained with selected form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch defective areas with fins and other projections completely removed and smoothed.
- C. Rubbed or float finish treatment will be given to all interior and exterior surfaces exposed to normal operating access. This will apply to waterholding structures to a level of two (2) feet below normal water level.
1. Cure 5 days minimum before rubbing.
 2. Complete rubbing within 10 days of concrete placement.
 3. Remove all burrs and form marks using a No. 16 Carborundum stone.
 4. Remove all swirl marks, surplus material, and obtain a smooth uniform finish and color using a No. 50 Carborundum stone.

3.07 MONOLITHIC SLAB FINISHES

- A. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as hereinafter specified.
1. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating, using float blades or float shoes only, when surface water has disappeared, when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats or by hand-floating if area is small or inaccessible to power units. Check and level surface planes to a tolerance not exceeding 1/8" in 10 feet when tested with a 10 foot straightedge. Cut down high spots and fill in low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.
- B. Trowel Finish: Apply trowel finish to monolithic slab surfaces to be exposed to view.
1. After floating, begin first trowel finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface

- by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and with surface leveled to tolerances not exceeding 1/8" in 10 feet when tested with a 10 foot straightedge.
2. Slabs which are designed and detailed to drain to a floor drain will in fact adequately drain regardless of tolerances and the contractor will be fully responsible to achieve this important function in the finished structure.
- C. Nonslip Broom Finish: Apply nonslip broom finish to exterior concrete slabs and elsewhere as indicated. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Engineer before application.

1.08 CONCRETE CURING AND PROTECTION

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather, protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply in accordance with manufacturer's instructions after screeding and bull floating, but before power floating and troweling.
- B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep concrete surface continuously moist for not less than 7 days.
- C. Curing Methods: Perform curing of concrete by curing and sealing compound, by moist curing, by moisture-retaining cover curing, and by combinations thereof, as herein specified.
- D. Provide moisture curing by following methods.
1. Keep concrete surface continuously wet by covering with water.
 2. Use continuous water-fog spray.
 3. Cover concrete surface with specified absorptive cover, thoroughly saturate cover with water, and keep continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4" lap over adjacent absorptive covers.
- E. Provide moisture-cover curing as follows:
1. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3" and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
- F. Provide curing and sealing compound to exposed interior slabs and to exterior slabs, walks, and curbs as follows unless noted otherwise.
1. Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours and after surface water sheen has disappeared). Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.
 2. Use membrane curing compounds that will not affect surfaces to be covered with finish materials applied directly to concrete.
 3. Provide sealer to interior slab on grade in accordance with manufacturer's recommendations.
- G. Curing Formed Surfaces: Cure formed concrete surfaces by moist curing with forms in place for full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.
- H. Curing Unformed Surfaces: Cure unformed surfaces, such as slabs, toppings, and other flat surfaces, by application of appropriate curing method.

3.09 REMOVAL OF FORMS

- A. Forms will not be removed without the authorization of the Engineer. Removal will be accomplished in such manner as will prevent injury to the concrete. Forms will be left in place for the following minimum durations:
 - 1. Elevated Slabs 14 days
 - 2. Monolithic Pipe 7 days
 - 3. Columns and Walls 3 days
 - 4. Other Concrete 3 days
 - 5. Slabs on Grade (edge forms) 3 days

3.10 REUSE OF FORMS

- A. Clean and repair surfaces of forms to be reused in work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-coating compound as specified for new formwork.
- B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joint to avoid offsets. Do not use "patched" forms for exposed concrete surfaces except as acceptable to Engineer.

3.11 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work or other trades is in place. Mix, place, and cure concrete as herein specified, to blend with in-place construction. Provide the miscellaneous concrete filling shown or required to complete work.
- B. Equipment Bases and Foundations: Provide machine and equipment bases and foundations, as shown on Drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of manufacturer furnishing machines and equipment.

3.12 CONCRETE SURFACE REPAIRS

- A. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to Engineer.
 - 1. Cut out honeycomb, rock pockets, voids over ¼" in any dimension, and holes left by tie rods and bolts, down to solid concrete but in no case to a depth of less than 1". Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with specified bonding agent. Place patching mortar before bonding compound has dried.
 - 2. For exposed-to-view surfaces, blend white Portland cement and standard Portland cement so that, when dry, patching mortar will match color surrounding. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.
- B. Repair of Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Engineer. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections on surface, and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes, fill with dry-pack mortar, or precast cement cone plugs secured in place with bonding agent.
 - 1. Repair concealed formed surfaces, where possible, that contain defects that affect the durability of

concrete. If defects cannot be repaired, remove and replace concrete.

- C. Repair of Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface plane to tolerances specified for each surface and finish. Correct low and high areas as herein specified.
 - 1. Repair finished unformed surfaces that contain defects that affect durability of concrete. Surface defects, as such, include crazing and cracks in excess of 0.01" wide (or that penetrate to reinforcement or completely through nonreinforced sections regardless of width), spelling, popouts, honeycomb, rock pockets, and other objectionable conditions.
 - 2. Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.
 - 3. Correct low areas in unformed surfaces during or immediately after completion of surface finishing operations by cutting out low areas and replacing with patching compound. Finish repaired areas to blend into adjacent concrete. Proprietary underlayment compounds may be used when acceptable to Engineer.
 - 4. Repair defective areas, except random cracks and single holes not exceeding 1" in diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least ¾" clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding compound. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
- D. Repair isolated random cracks and single holes not over 1" in diameter by dry-pack method. Groove top of crack and cut out holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Mix dry-pack, consisting of 1 part Portland cement to 2½ parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Place dry-pack before bonding compound has dried. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for not less than 72 hours.
- E. Perform structural repairs with prior approval of Engineer for method and procedure, using specified epoxy adhesive and mortar.
- F. Repair methods not specified above may be used, subject to acceptance of Engineer.

END OF SECTION

CONSTRUCTION PLANS

PLAN SHEET I-85-1

**I-85 CROSSING FOR 4" & 6" HDPE,
DIPS DR 11 FORCE MAINS**

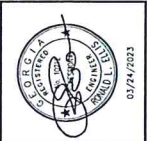


ELLIS & ASSOCIATES
RONALD L. ELLIS
ASSOCIATES, INC.
Consulting Engineers
Fellham, Alabama

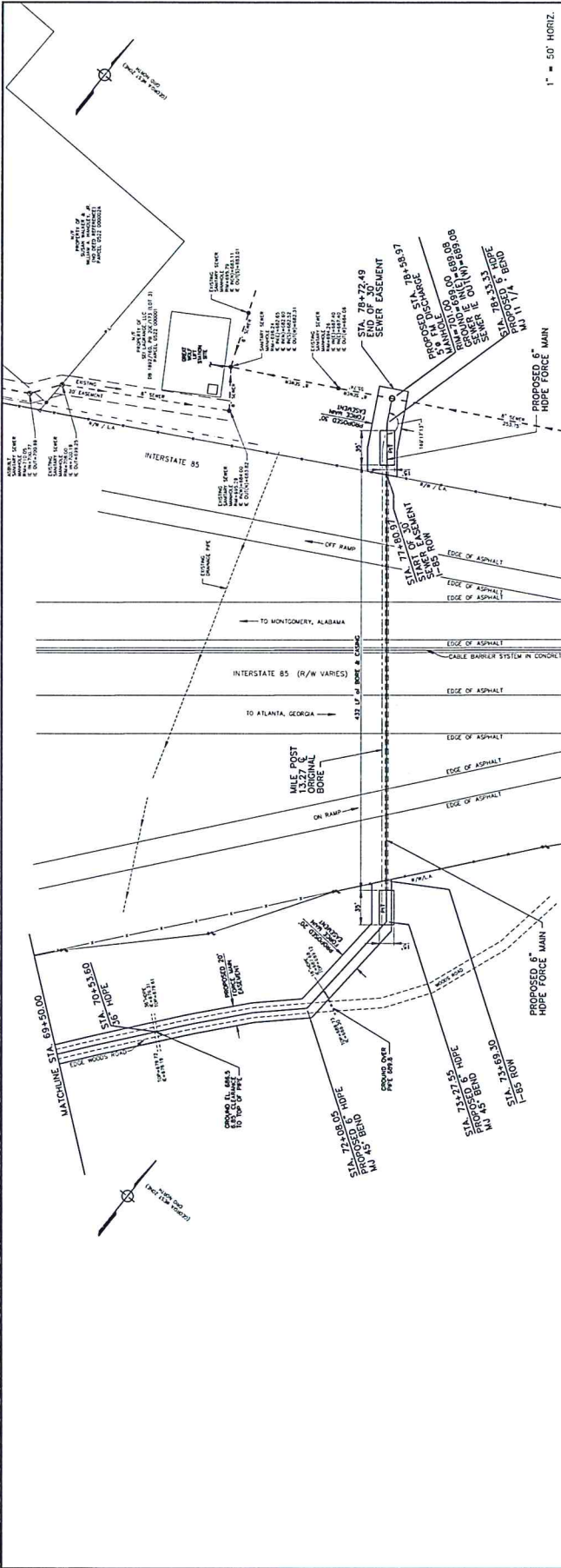
CITY OF LAGRANGE, GEORGIA
2023 - WHITESVILLE ROAD
FORCE MAIN IMPROVEMENTS
I-85 CROSSING FOR 4" & 6" HDPE, DIPS DR 11 FORCE MAINS

DRAWING NAME: I-85 CROSSING-1
PROJECT NO.: 21-220
DRAWN BY: JLE
CHECKED BY: JLE
APPROVED BY: JLE
SCALE: AS SHOWN
DATE: 03/27/2023

REV	DATE	DESCRIPTION

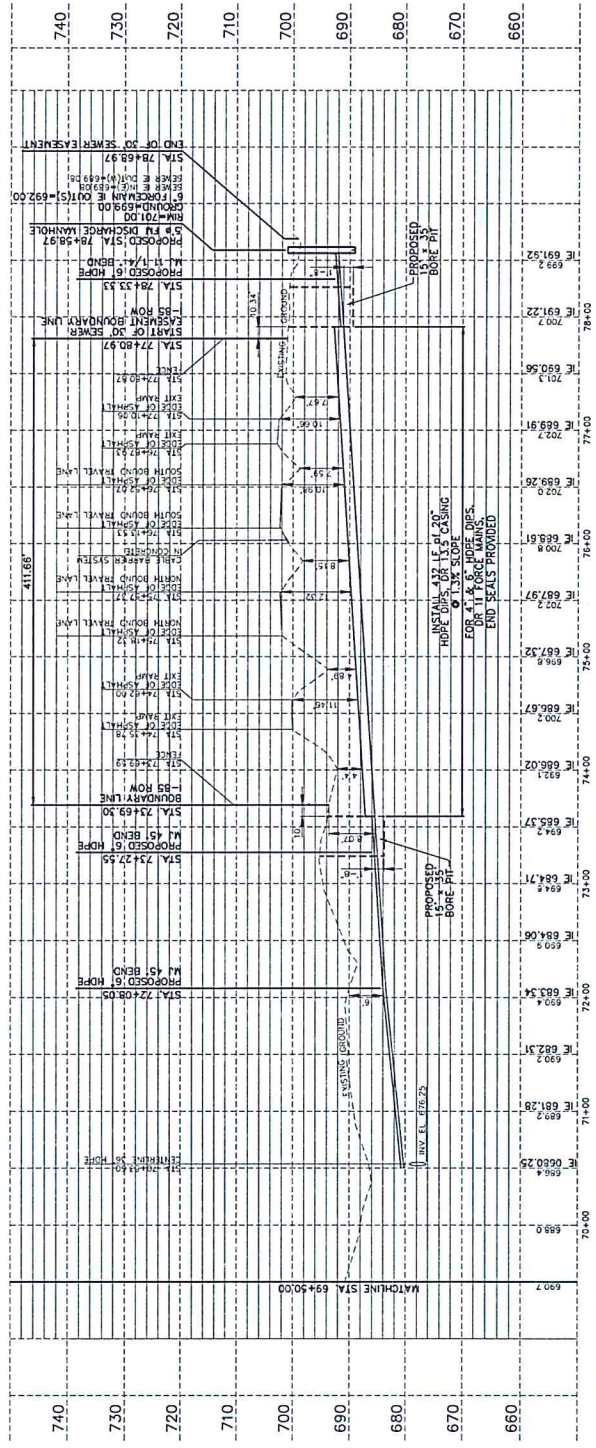


SHEET NO.
I-85-1



1" = 50' HORIZ.
1" = 10' VERT.

ALSO Q OF I-85 TO Q ORIGINAL BORE = 1423.93'



CONSTRUCTION PLANS

PLAN SHEET I-85-2

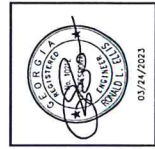
**I-85 CROSSING FOR THREE ELECTRICAL & ONE
TELECOM CONDUIT, HDPE DIPS DR 11**



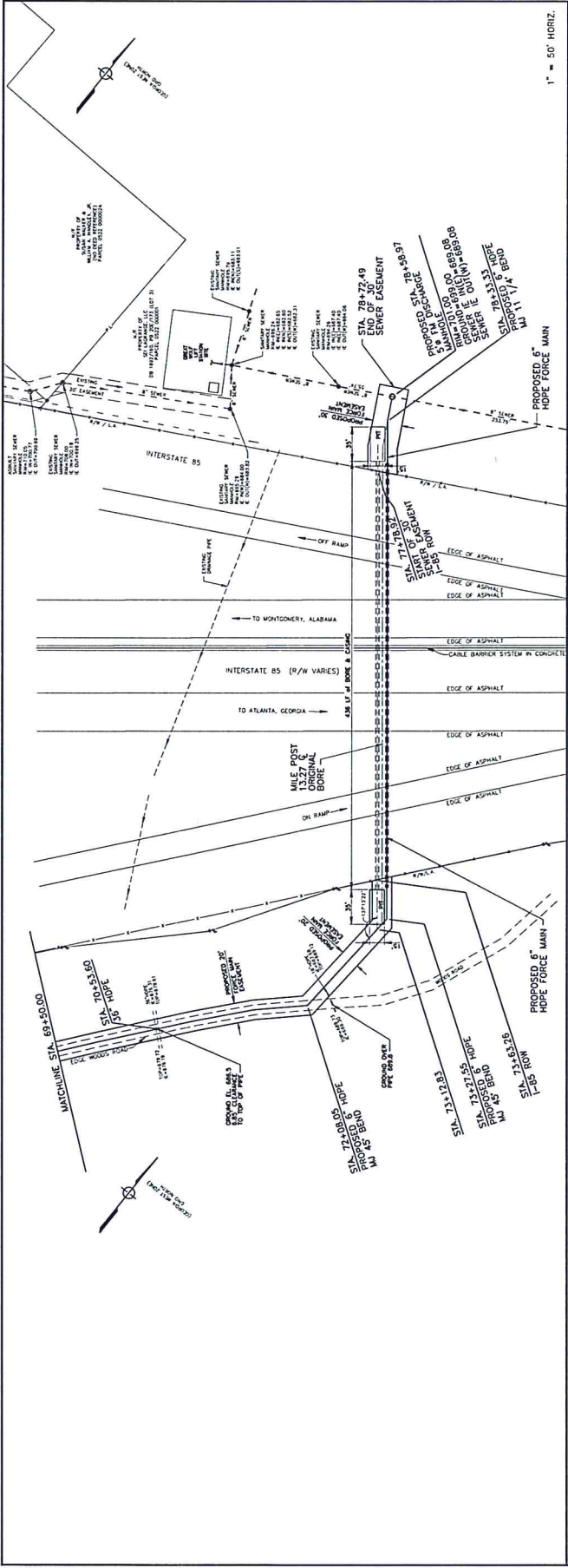
CITY OF LAGRANGE, GEORGIA
2023 - WHITESVILLE ROAD
FORCE MAIN IMPROVEMENTS
I-85 CROSSING FOR THREE ELECTRICAL
& TELECOM CONDUITS, HDPE DIPS, DR 11

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PROJECT NO.	23-240
DRAWN BY	RL
CHECKED BY	RL
DATE	03/24/2023

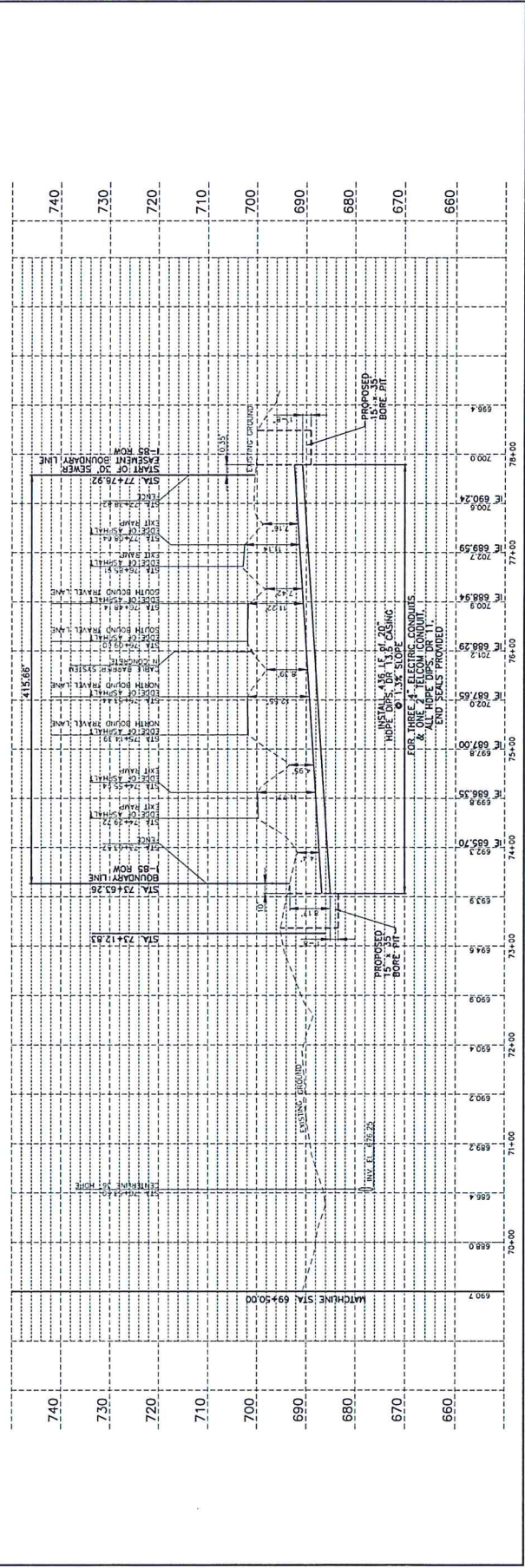
NO.	DATE	DESCRIPTION



SHEET NO. 1-85-2



1" = 50' HORIZ
1" = 10' VERT.



GADOT PERMIT No. 1287197

I-85 CROSSING FOR 4" & 6" HDPE,

DIPS DR 11 FORCE MAINS

DEPARTMENT OF TRANSPORTATION

State of Georgia
Atlanta, Georgia 30308

APPLICATION AND PERMIT FOR UTILITY FACILITY ENCROACHMENT

APPLICATION IS HEREBY MADE TO THE GEORGIA DEPARTMENT OF TRANSPORTATION BY:

CITY OF LAGRANGE

(UTILITY - NAME AND ADDRESS)

200 Ridley Ave. , LaGrange GA-30240

FOR PERMISSION TO CONSTRUCT OPERATE AND MAINTAIN THE FOLLOWING DESCRIBED UTILITY FACILITY WITHIN OR FROM THE RIGHT-OF-WAY OF STATE HIGHWAY NO. 040300 COUNTY ROAD NO. _____ IN Troup COUNTY.

DESCRIPTION: The city of LaGrange is needing to directional bore a 20 inch hdpe casing under the interstate. This will have a 4inch and 6inch force sewer mains inside the casing. We would like to include both main inside the 20 inch HDPE casing.

LOCATION: Mile Point (11.64) TO Mile Point (11.96)

THE UTILITY SHALL COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) CURRENT EDITION. IT IS ANTICIPATED THAT THE TEMPORARY TRAFFIC CONTROL UTILIZED FOR THIS INSTALLATION WILL BE IN ACCORDANCE WITH ONE OF THE FOLLOWING:

☒ MUTCD 6-TYPICAL APPLICATION PLAN

☐ DETAILED TRAFFIC CONTROL PLAN
(ATTACHED)

☐ COMBINATION TYPICAL APPLICATION &
DETAIL TRAFFIC CONTROL PLAN (ATTACHED)

THE UTILITY FACILITIES COVERED HEREBY SHALL BE INSTALLED IN ACCORDANCE WITH THE PLANS ATTACHED HERETO AND MADE A PART HEREOF. UTILITY AGREES TO COMPLY WITH AND BE BOUND BY THE DEPARTMENT'S UTILITY ACCOMMODATION POLICY AND STANDARDS, CURRENT EDITION, ON FILE IN THE GENERAL OFFICE OF THE DEPARTMENT OF TRANSPORTATION, MADE A PART HEREOF BY REFERENCE, AND ALL GENERAL PROVISIONS AND SPECIAL PROVISIONS SHOWN ON THE REVERSE HEREOF, OR ATTACHED HERETO, DURING THE INSTALLATION, OPERATION AND MAINTENANCE OF SAID UTILITY FACILITIES WITHIN OR FROM THE RIGHT-OF-WAY.

PERMIT REQUESTED THIS 3 DAY OF April, 2023

100030

(MEMBER CODE)

Zachary Rhodes

WITNESS TO SIGNATURE

(SIGNATURE - Electronic)

Zachary Rhodes

Design / GIS Specialist 706-883-2061

(TITLE & PHONE NUMBER)

PERMISSION IS GRANTED FOR THE ABOVE DESCRIBED UTILITY FACILITY ENCROACHMENT IN ACCORDANCE WITH THE PLANS AND PROVISIONS HEREOF.

THIS PERMIT IS TO BE STRICTLY CONSTRUED AND NO WORK OTHER THAN THAT SPECIFICALLY DESCRIBED ABOVE IS HEREBY AUTHORIZED.

PERMIT GRANTED THIS 28 DAY OF APRIL 2023.

DEPARTMENT OF TRANSPORTATION

BY: TYLER DAVIS PEEK

(DISTRICT ENGINEER)

DISTRICT NO. 3 COUNTY Troup

STATE ROUTE NO. 040300 U.S. _____ CO. RD. NO.

PROJECT NO. ACTIVE

PERMIT NO. 1287197

UNDER CONSTR _____

PERMIT DATA FOR PERMIT APPLICATION 1287197

The work category of your project is **Sewer & Drain**

in **Troup** County/Counties

Location Information

The Utility installation location was narrowed down to

Beginning Mile Point **11.64** and Ending Mile Point **11.96**

on Route No **040300**

Map Uploads

General Encroachment Information

Traffic Control type is **MUTCD Part 6 - Typical Application Plan**

Traffic Control Plan Upload

Utility Information

Work description **The city of LaGrange is needing to directional bore a 20 inch hdpe casing under the interstate. This will have a 4inch and 6inch force sewer mains inside the casing. We would like to include both main inside the 20 inch HDPE casing.**

Work days estimate **50** Bridge and Wall Attachments **No**

Facility Placement Type **Crossing** Installation Length **400**

Facility Type **Sewer** Service Type **NA**

Pipe Size **6** Pipe Material **HDPE**

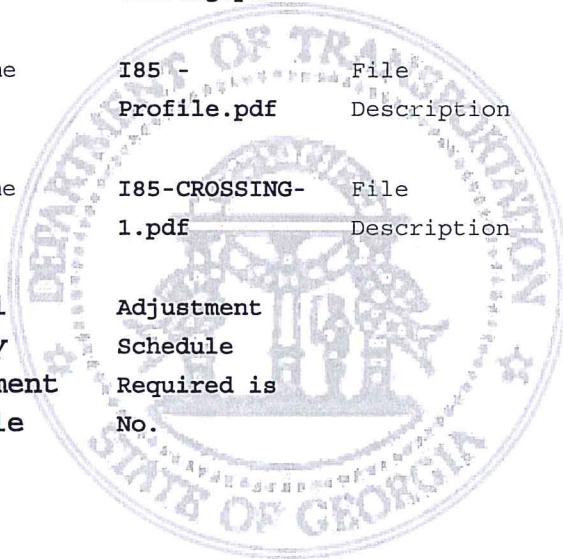
Pressure **50** Casing Material **HDPE**

Casing Diameter **20** Valve Quantity **0**

Main Type **Pressure**

Manhole Quantity **0** Handhole Quantity **0**

Minimum Depth		10	Maximum Depth		20
Number of Test Holes		0	Involves Pavement Cutting		No
Joint Trench	No	Underground Construction Type(s)	Horizontal Directional Drilling	Drawings Upload	Upload #
1	File Name	1287197_Map.j pg	File Description	Map	Upload #
2	File Name	Special Provision.pdf	File Description	Permit Documents	Upload #
3	File Name	Interstate bore casing drawing.pdf	File Description	Permit Documents	Upload #
4	File Name	I85 - Profile.pdf	File Description	Permit Profiles	Upload #
5	File Name	I85-CROSSING- 1.pdf	File Description	Permit Plans	Blasting Information
Blasting Required is No.	General Utility Adjustment Schedule	Adjustment Schedule Required is No.			



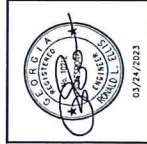


ELLIS
ASSOCIATES
RONALD L. ELLIS
ASSOCIATES, INC.
Civil & Mechanical Engineers
Tulahoma, Alabama

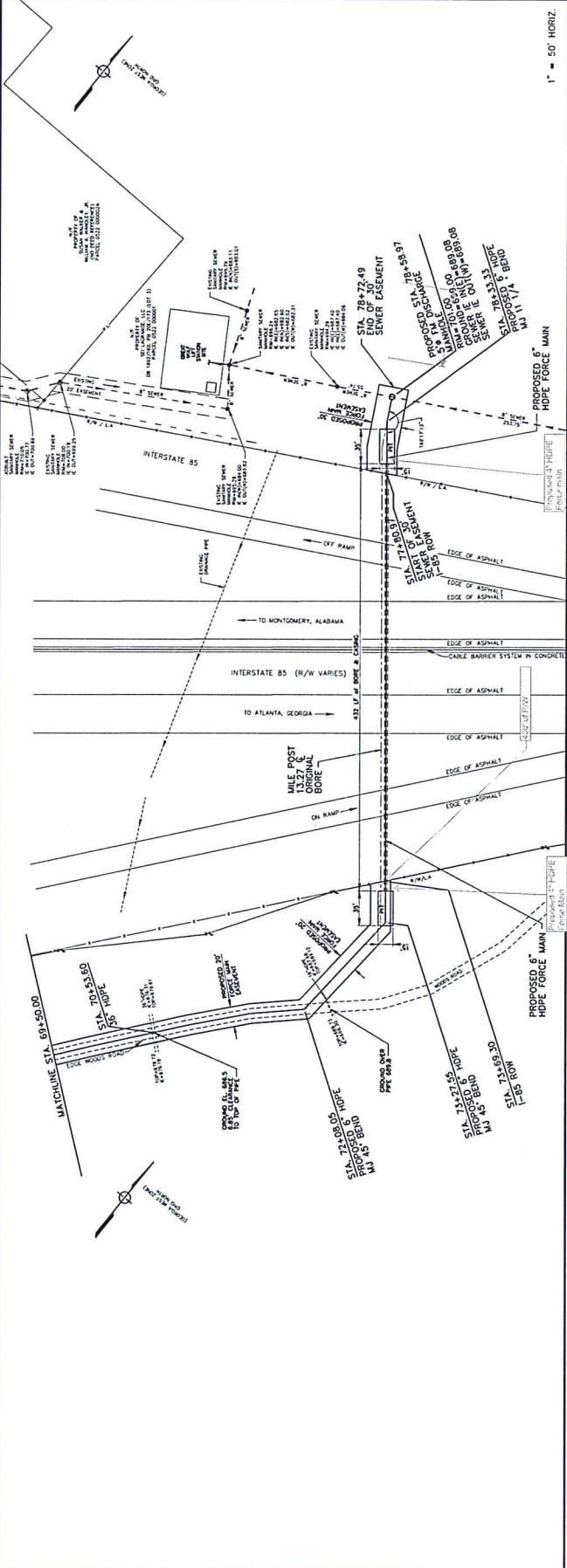
CITY OF LAGRANGE, GEORGIA
2023 - WHITESVILLE ROAD
FORCE MAIN IMPROVEMENTS
I-85 CROSSING FOR 4" & 6" HDPE, DIPS DR 11 FORCE MAINS

DRAWING NAME: I-85 CROSSING-1
PROJECT NO.: 21-220
DRAWN BY: RLE
CHECKED BY: RLE
APPROVED BY: RLE
SCALE: AS SHOWN
DATE: 03/24/2023

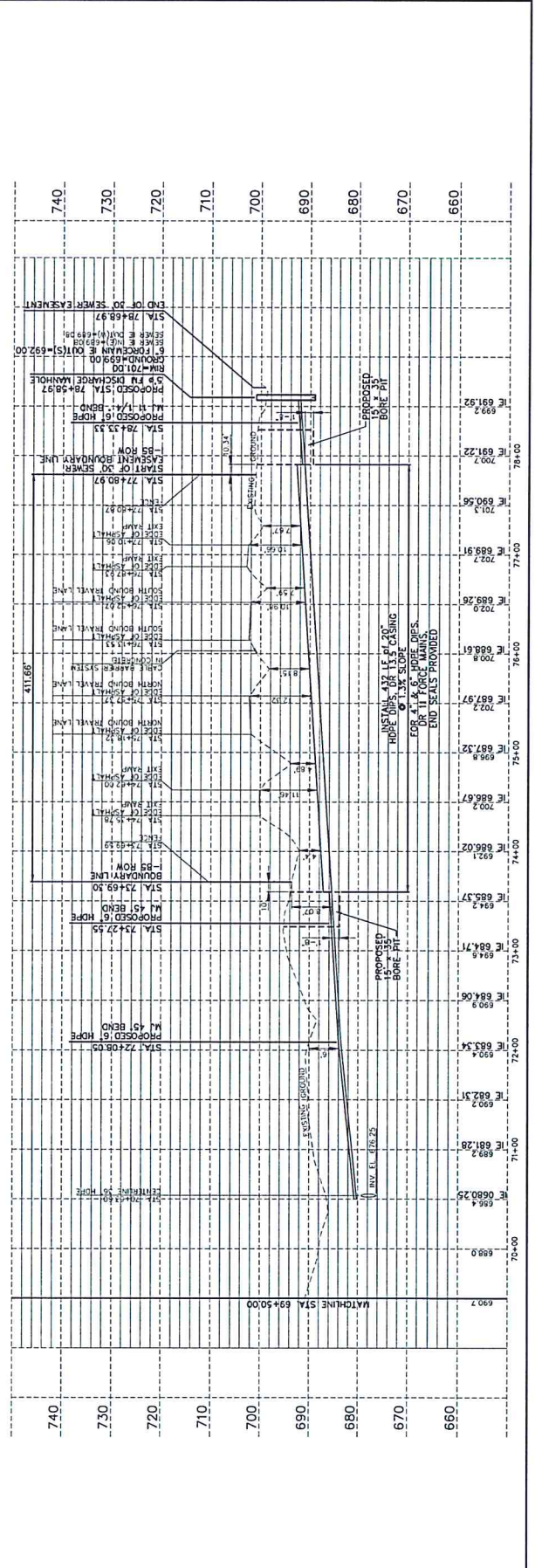
NO.	DATE	REVISION



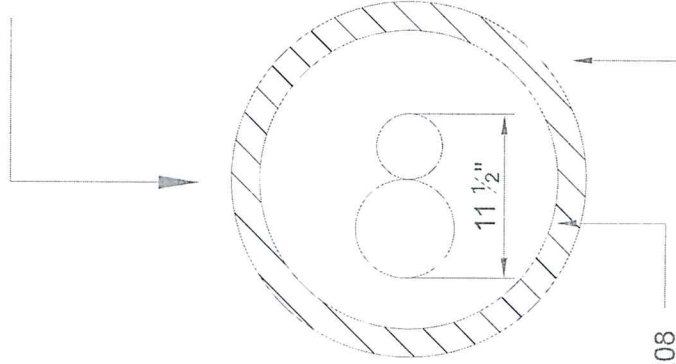
SHEET NO.
I-85-1



1" = 50' HORIZ.
1" = 10' VERT.



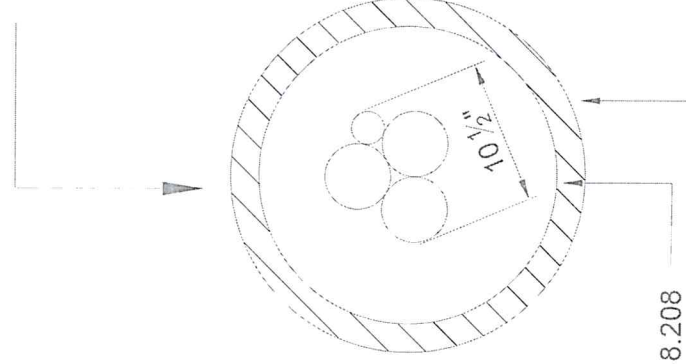
20" HDPE
DR 13.5
Casing for 6"
HDPE and
4" HDPE
SDR 11



AVG I.D. 18.208

AVG O.D. 21.60

20" HDPE
DR 13.5
Casing for 3
- 4" electric
conduits,
1-2" telecom
conduit



AVG I.D. 18.208

AVG O.D. 21.60



UTILITY PERMIT CHECKLIST INFORMATION

UTILITY COMPANY CITY OF LAGRANGE COUNTY Troup DATE 03-MAY-23

PERMIT NO 1287197 ROUTE NO 040300 BEG MILE POINT 11.64 ENDING MILE POINT 11.96

UTILITY REPRESENTATIVE zach rhodes Phone 7068832061 Est Start Date: 01-JUL-23 Est End Date: 23-DEC-23

1. WILL YOU BE THE PRIME CONTRACTOR ? (Yes)
IF NOT, WHO WILL BE ?
2. WHO WILL SUPERVISE THE CONSTRUCTION ? NAME zach rhodes EMERGENCY PHONE 7068832061
3. DO YOU UNDERSTAND THE PERMIT COMPLETELY ? (Yes)
4. DO YOU UNDERSTAND THAT THE PERMIT AND PLANS ARE TO BE ON LOCATION WHEN ANY WORK IS BEING DONE AND THAT AN ORANGE PERMIT SIGN IS TO BE ERECTED AND MAINTAINED UNTIL WORK IS COMPLETE ? (Yes)
5. DO YOU UNDERSTAND THE TRAFFIC CONTROL REQUIREMENTS ? (Yes)
6. DO YOU UNDERSTAND THAT BLOCKING OF THE LANES MUST BE APPROVED BY THE AREA PERMIT INSPECTOR OR THE AREA ENGINEER ? (Yes)
7. DO YOU UNDERSTAND THAT ANY FLAGGING OF TRAFFIC WILL BE DONE BY CERTIFIED FLAGGERS ? (Yes)
8. DO YOU UNDERSTAND THAT A MEETING WILL BE NECESSARY BETWEEN YOURSELF, THE CONTRACTOR, AND THE AREA PERMIT ENGINEER ? (Yes)
9. DO YOU UNDERSTAND THAT YOU ARE TO NOTIFY THE AREA PERMIT INSPECTOR 24 HOURS BEFORE ANY WORK IS TO BEGIN ? (Yes)
10. DO YOU UNDERSTAND AN ORANGE PERMIT SIGN IS TO BE ERECTED AND MAINTAINED UNTIL WORK IS COMPLETED ? (Yes)
11. DO YOU UNDERSTAND THAT THE FACILITY WILL NOT BE PLACED IN SERVICE UNTIL ALL CONSTRUCTION ITEMS ARE COMPLETE UNLESS APPROVED BY THE APPROPRIATE DISTRICT OFFICE ? (Yes)
12. DO YOU UNDERSTAND THAT THE AREA PERMIT INSPECTOR WILL GIVE INTERPRETATION WHEN REQUESTED AND WILL MAKE SPOT CHECKS ON THE CONSTRUCTION AS WORK PROGRESS; BUT, WILL BE YOUR RESPONSIBILITY TO SEE THAT THE WORK CONFORMS TO THE OUTLINE IN YOUR PERMIT AND ACCORDING TO YOUR APPROVED PLAN ? (Yes)
13. DO YOU UNDERSTAND THAT YOU MUST COMPLY WITH THE GEORGIA DEPARTMENT OF NATURAL RESOURCES DIVISION SEDIMENT CONTROL RULES AND REGULATION, CHAPTER 391-3-7 + OCGA 12-7-1 (Yes)
14. ARE THERE ANY SPECIAL PROVISIONS THAT NEED TO BE DISCUSSED ? (No)
15. DO YOU UNDERSTAND THE NEED FOR SAFETY EQUIPMENT TO BE WORN AT ALL TIMES ? (Yes)
16. DO YOU ACCEPT THAT NO OPEN PITS ARE ALLOWED IN THE ROW OVERNIGHT ? (Yes)

UTILITY REPRESENTATIVE:

INSPECTOR:

DOT 8520

DEPARTMENT OF TRANSPORTATION

DISTRICT NO. 3 APPROVAL DATE 28-APR-23

PERMIT NO. 1287197 COUNTY Troup

PERMITTEE CITY OF LAGRANGE

CONTRACTOR

STATE INSPECTOR William B. Yearta

TELEPHONE 706-845-4115

INSPECTOR'S LOG

☐ AERIAL

☐ UNDERGROUND

☐ OTHER

INITIAL	DATE	INITIAL	DATE	INITIAL	DATE

DISPLAY THIS WITHIN WORKING AREA SO AS TO BE VISIBLE FROM HIGHWAY

GADOT PERMIT No. 1287199

**I-85 CROSSING FOR THREE ELECTRICAL & ONE
TELECOM CONDUIT, HDPE DIPS DR 11**

DEPARTMENT OF TRANSPORTATION

State of Georgia

Atlanta, Georgia 30308

APPLICATION AND PERMIT FOR UTILITY FACILITY ENCROACHMENT

APPLICATION IS HEREBY MADE TO THE GEORGIA DEPARTMENT OF TRANSPORTATION BY:

CITY OF LAGRANGE

(UTILITY - NAME AND ADDRESS)

200 Ridley Ave. , LaGrange GA-30240FOR PERMISSION TO CONSTRUCT OPERATE AND MAINTAIN THE FOLLOWING DESCRIBED UTILITY FACILITY WITHIN OR FROM THE RIGHT-OF-WAY
OF STATE HIGHWAY NO. 040300 COUNTY ROAD NO. _____ IN Troup COUNTY.DESCRIPTION: The city of LaGrange is needing to directional bore a 20inch HDPE casing to house 3 4inch electrical conduits and 1 2inch for fiber conduit. This would be done 15ft away from a proposed 20inch casing bore for a force sewer main.LOCATION: Mile Point (11.62) TO Mile Point (11.94)THE UTILITY SHALL COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) CURRENT EDITION. IT IS ANTICIPATED THAT THE TEMPORARY TRAFFIC CONTROL UTILIZED FOR THIS INSTALLATION WILL BE IN ACCORDANCE WITH ONE OF THE FOLLOWING:☒ MUTCD 6-TYPICAL APPLICATION PLAN☐ DETAILED TRAFFIC CONTROL PLAN
(ATTACHED)☐ COMBINATION TYPICAL APPLICATION &
DETAIL TRAFFIC CONTROL PLAN (ATTACHED)THE UTILITY FACILITIES COVERED HEREBY SHALL BE INSTALLED IN ACCORDANCE WITH THE PLANS ATTACHED HERETO AND MADE A PART
HEREOF. UTILITY AGREES TO COMPLY WITH AND BE BOUND BY THE DEPARTMENTS UTILITY ACCOMMODATION POLICY AND STANDARDS,
CURRENT EDITION, ON FILE IN THE GENERAL OFFICE OF THE DEPARTMENT OF TRANSPORTATION, MADE A PART HEREOF BY REFERENCE, AND
ALL GENERAL PROVISIONS AND SPECIAL PROVISIONS SHOWN ON THE REVERSE HEREOF, OR ATTACHED HERETO, DURING THE INSTALLATION,
OPERATION AND MAINTENANCE OF SAID UTILITY FACILITIES WITHIN OR FROM THE RIGHT-OF-WAY.PERMIT REQUESTED THIS 3 DAY OF April, 2023100030

(MEMBER CODE)

Zachary Rhodes

WITNESS TO SIGNATURE

(SIGNATURE - Electronic)

Zachary RhodesDesign / GIS Specialist 706-883-2061

(TITLE & PHONE NUMBER)

PERMISSION IS GRANTED FOR THE ABOVE DESCRIBED UTILITY FACILITY ENCROACHMENT IN ACCORDANCE WITH THE PLANS AND PROVISIONS
HEREOF.

THIS PERMIT IS TO BE STRICTLY CONSTRUED AND NO WORK OTHER THAN THAT SPECIFICALLY DESCRIBED ABOVE IS HEREBY AUTHORIZED.

PERMIT GRANTED THIS 28 DAY OF APRIL 20 23 .

DEPARTMENT OF TRANSPORTATION

BY: TYLER DAVIS PEEK

(DISTRICT ENGINEER)

DISTRICT NO. 3 COUNTY TroupSTATE ROUTE NO. 040300 U.S. _____ CO. RD. NO. _____PROJECT NO. ACTIVE _____PERMIT NO. 1287199

UNDER CONSTR _____

PERMIT DATA FOR PERMIT APPLICATION 1287199

The work category of your project is **Electrical**

in Troup County/Counties

Location Information

The Utility installation location was narrowed down to

Beginning Mile Point **11.62** and Ending Mile Point **11.94**

on Route No **040300**

Map Uploads

General Encroachment Information

Traffic Control type is **MUTCD Part 6 - Typical Application Plan**

Traffic Control Plan Upload

Utility Information

Work description **The city of LaGrange is needing to directional bore a 20inch HDPE casing to house 3 4inch electrical conduits and 1 2inch for fiber conduit. This would be done 15ft away from a proposed 20inch casing bore for a force sewer main.**

Work days estimate **50** Bridge and Wall Attachments **No**

Facility Placement Type **Crossing** Installation Length **400**

Facility Type **Distribution** Service Tap Type **NA**

Cable material Type **UGP**

Line Voltage **7,200**

Cable Gauges **1000** Involves Communication Line **Yes**

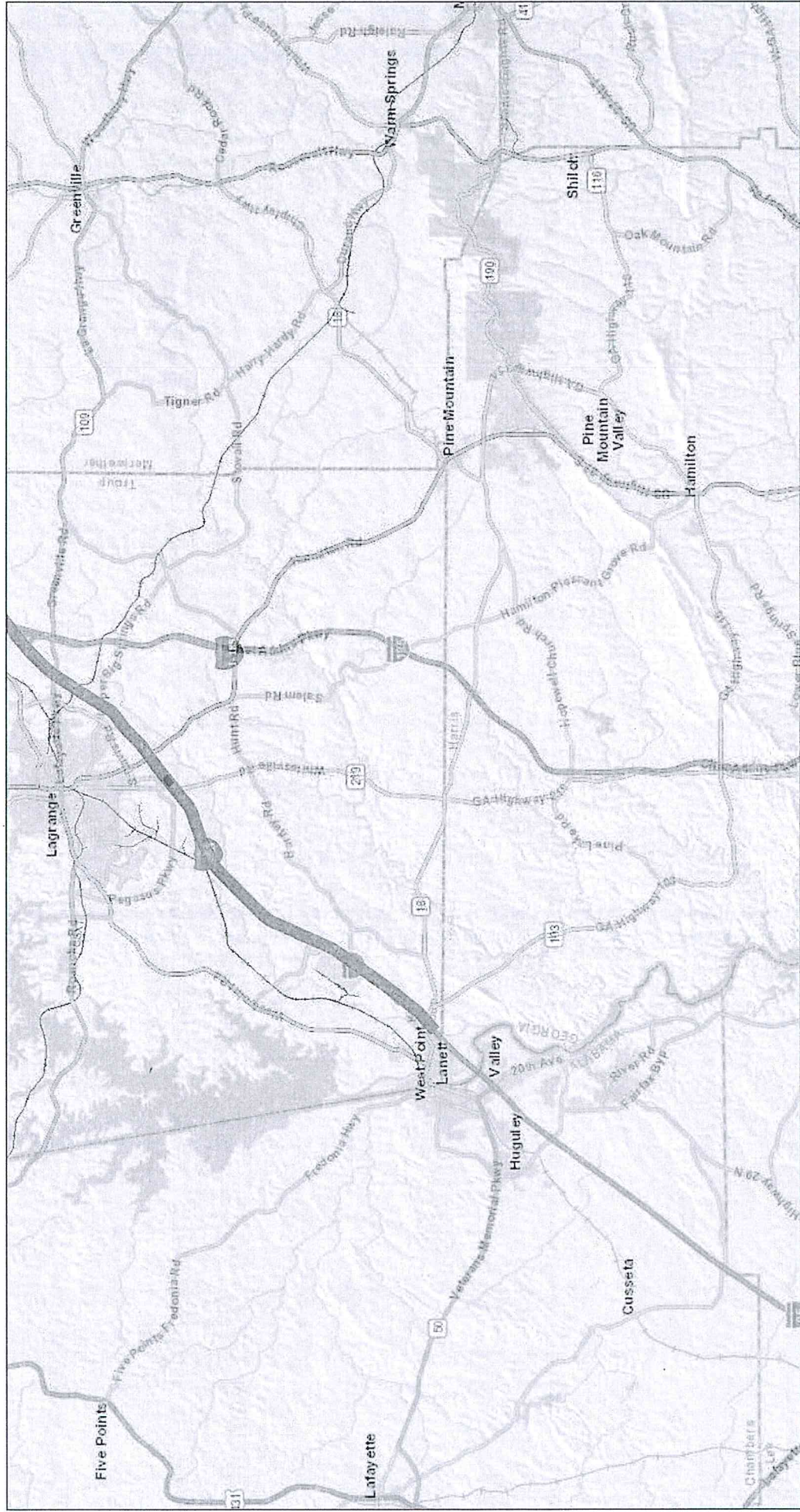
Installation Type **Underground**

Material **HDPE**

Diameter **4** Number of Ducts **3**

Manhole Quantity	0.0	Handhole Quantity	0.0
Minimum Depth	10	Maximum Depth	20
Handhole/value boxes	0	Number of Test Holes	0
Involves Pavement Cutting	No	Joint Trench	
No	Underground Construction Type (s)	Horizontal Directional Drilling	Drawings Upload
File Name	Interstate bore casing drawing.pdf	File Description	Permit Documents
File Name	Special Provision.pdf	File Description	Permit Documents
File Name	1287199_Map.jpg	File Description	Map
File Name	I85-Plan.pdf	File Description	Permit Plans
File Name	I85-Profile.pdf	File Description	Permit Profiles
General Utility Adjustment Schedule	Adjustment Schedule Required is No.	Blasting Information	Blasting Required is No.

1287199_MAP.jpg



April 26, 2023

1:220,075

0 2.25 4.5 7 9 mi
0 3.5 7 14 km

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Georgia Department of Transportation

GDOT GIS
GeorgiaDOT

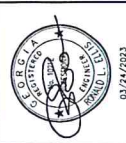


ELLIS & ASSOCIATES
RONALD L. ELLIS
ASSOCIATES, INC.
Consulting Engineers
Pellham, Alabama

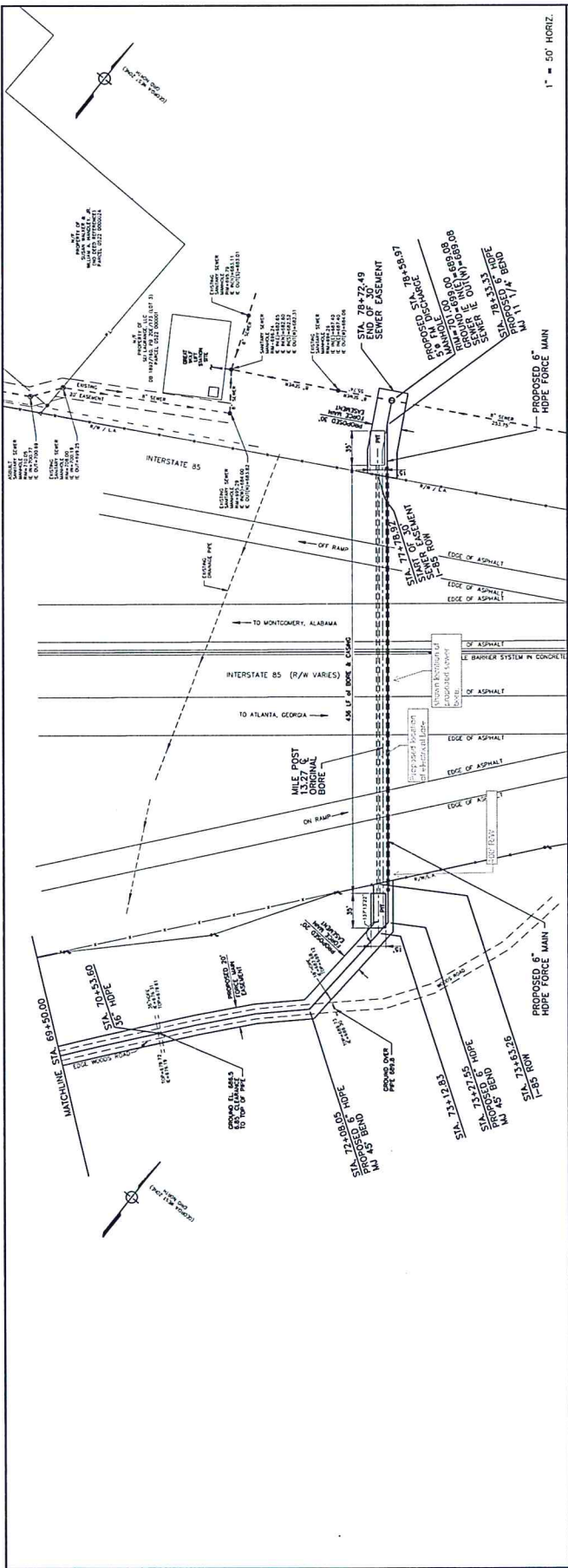
CITY OF LAGRANGE, GEORGIA
2023 - WHITESVILLE ROAD
FORCE MAIN IMPROVEMENTS
1-85 CROSSING FOR THREE ELECTRICAL
& TELECOM CONDUITS, HDPE DIPS, DR 11

DRAWING NAME: 1-85 CROSSING-2
PROJECT NO.: 21-220
DRAWN BY: RLE
CHECKED BY: RLE
APPROVED BY: JAS
SCALE: AS SHOWN
DATE: 03/24/2023

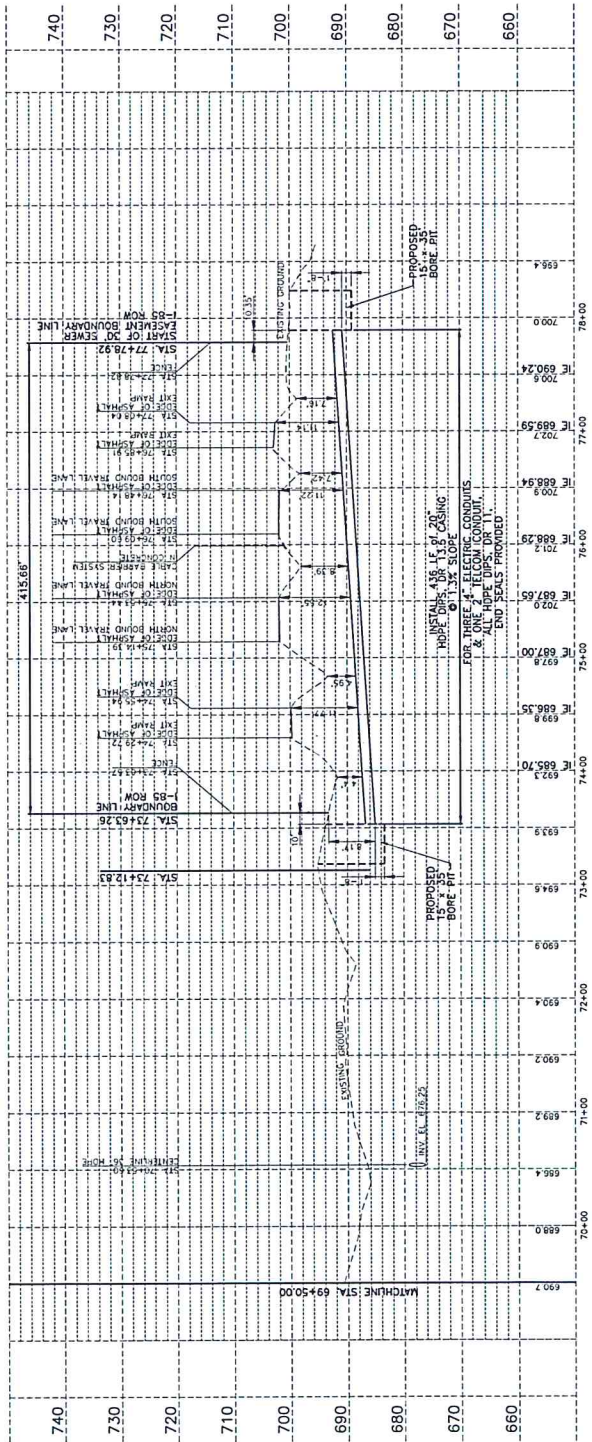
NO.	DATE	DESCRIPTION



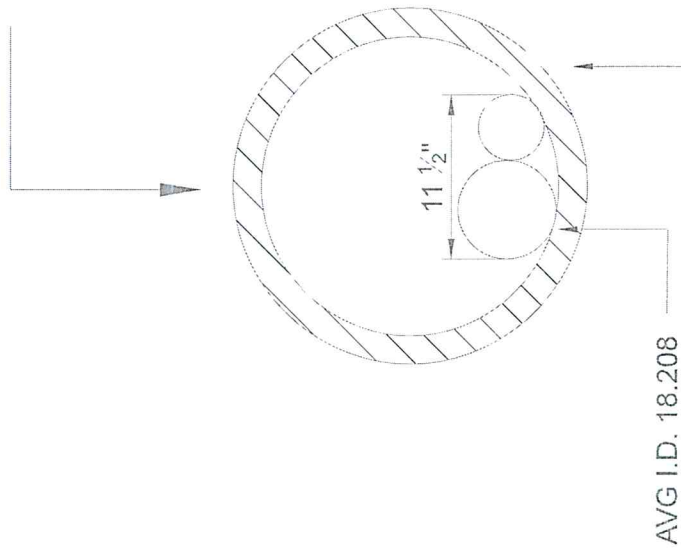
SHEET NO.
1-85-2



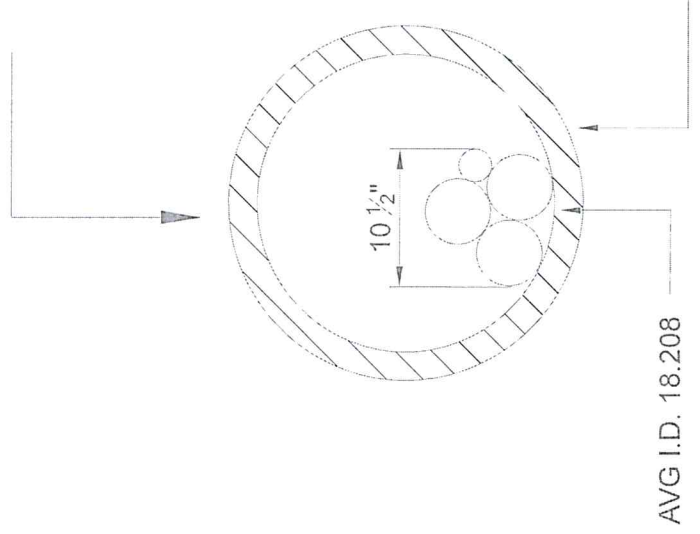
1" = 50' HORIZ.
1" = 50' HORIZ.
1" = 10' VERT.



20" HDPE
DR 13.5
Casing for 6"
HDPE and
4" HDPE
SDR 11



20" HDPE
DR 13.5
Casing for 3
- 4" electric
conduits,
1-2" telecom
conduit



August 9, 2002

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SPECIAL PROVISION

Direction Boring Under Interstate and Limited Access
Highways

Company Name: City of LaGrange

Date: 4/12/2023

Permit No. 1287199

The permit applicant shall furnish, for the Engineer's review and approval, a bore plan showing the proposed methods for the installation of *Interstate or Limited Access Crossing* directional bores. No directional boring work will be allowed until the applicant's submitted plan is approved by the Engineer. This plan shall include, but not be limited to, the following:

1. Boring Machine type and model. American Augers DD110
2. Proposed alignment of bore both horizontal and vertical. Boring will not be allowed in select backfill areas such as at mechanically stabilized wall locations and within 100 feet of Bridges and other Structures.
3. Location of all proposed boring entry and exit pits. (On Plans)
4. Cross Sections of the existing ground. (Attached to Sheet)
5. Entry Angle (%) with respect to horizon. Depending on Machine setup
6. Plan shall show the rod cover (inches).
7. Rod selection:
 - a. diameter (inches) 4 . 5
 - b. rod length (feet) 15
 - c. Bend (feet radius) limit 7 . 6 %
8. Tooling:
 - a. pilot bit diameters (inches) 30
 - b. Reamer diameters (inches) in no case shall the diameter of the back reamer exceed 1.5 times the diameter of the product bundle installation.
 - c. Identify Soil type/Mud factor – sand, gravel, cobble rock or same mixed with clay or reactive shale. Clay

9. Product bundle:

- a. diameters (inches) 20
- b. quantity 1
- c. Bend (foot radius) 7.6%

10. Sonde:

- a. Ascending limit 90Degree-100%
- b. Descending limit 90Degree-100%

- 11. The minimum depths of cover under travel lanes or otherwise outside of the paved shoulder shall be 10 feet.
- 12. This installation shall include a locatable conduit system, with identification markers on each DOT right-of-way fence line.
- 13. The applicant shall continuously monitor the location and alignment of the pilot drill progress to insure compliance with the proposed installation alignment and to verify depth of the bore. Monitoring shall be accomplished by computer generated bore logs which map the bore path based on information provided by the locating/tracking system. Readings or plots shall be obtained on every drill rod, and shall be provided to the Inspector on a daily basis. Upon completion of the bore applicant will furnish an As-built drawing along with a report of the Monitoring of the drilling fluids during the pilot hole and back reamed hole.
- 14. Excess drilling fluids shall be contained at the entry and exit points until recycled or removed from the site. The applicant shall ensure that all drilling fluids are disposed of in a manner acceptable to the appropriate local, state and federal regulations. The applicant's work will be immediately suspended by the inspector whenever drilling fluids seep to the surface other than in the boring entrance or exit pit, or when a paved surface is displaced. The applicant shall then propose a method to prevent further seepage and/or displacement, and shall remove and dispose of any drilling fluid, slurry and soil from the paved surface prior to resuming the boring operation.
- 15. Any surfaces damaged by the work shall be restored to their preconstruction conditions at no additional cost to the Department, and with no increase in contract time.
- 16. Written confirmation from adjacent property owners shall be required when additional Right of Way is required.

GENERAL PROVISIONS

IT IS EXPRESSLY STIPULATED THAT THIS PERMIT IS A LICENSE FOR PERMISSIVE USE ONLY, AND THE PLACING OF UTILITY FACILITIES UPON PUBLIC PROPERTY, PURSUANT TO THIS PERMIT, SHALL NOT OPERATE TO CREATE OR VEST ANY PROPERTY RIGHT IN THE HOLDER.

WHENEVER NECESSARY FOR THE CONSTRUCTION, REPAIR, IMPROVEMENT, MAINTENANCE, SAFE AND EFFECTIVE OPERATION, ALTERATION OR RELOCATION OF ALL OR ANY PORTION OF THE HIGHWAY, AS DETERMINED BY THE DEPARTMENT, ANY OR ALL OF SAID FACILITIES AND APPURTENANCES AUTHORIZED HEREUNDER SHALL BE IMMEDIATELY REMOVED FROM THE RIGHT-OF-WAY, OR RESET OR RELOCATED THEREON, AS REQUIRED BY THE CHIEF ENGINEER, AND AT THE SOLE EXPENSE OF THE UTILITY, UNLESS REIMBURSEMENT IS AUTHORIZED BY SEPARATE AGREEMENT. SHOULD THE UTILITY FAIL TO REMOVE OR RELOCATE ITS FACILITIES UPON DUE NOTICE FROM THE DEPARTMENT, THE UTILITY SHALL BE LIABLE FOR ANY EXTRAORDINARY COSTS OR DAMAGES INCURRED BY THE DEPARTMENT AS A RESULT THEREOF.

IF THE DEPARTMENT UNDERTAKES TO IMPROVE THIS HIGHWAY, IT SHALL BE THE RESPONSIBILITY OF THE UTILITY TO PLAN, WITH THE DEPARTMENT AND ITS CONTRACTOR, A SCHEDULE WHICH WILL CLEARLY SETS FORTH AT WHICH STAGE OF OPERATIONS THE UTILITY WILL BE REQUIRED TO PERFORM ANY ADJUSTMENT TO ITS FACILITIES NECESSARY TO ACCOMMODATE THE HIGHWAY IMPROVEMENTS.

DURING THE INITIAL INSTALLATION OR CONSTRUCTION OF FACILITIES AUTHORIZED BY THIS PERMIT, OR DURING ANY FUTURE REPAIR, REMOVAL OR RELOCATION THEREOF OR ANY MISCELLANEOUS OPERATIONS, THE UTILITY SHALL, AT ALL TIMES, MAINTAIN FLAGMEN, SIGNS, LIGHTS, FLARES, BARRICADES, AND OTHER SAFETY DEVICES IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), CURRENT EDITION, AND, AS MAY BE NECESSARY, TO PROPERLY PROTECT TRAFFIC UPON THE HIGHWAY AND TO WARN AND SAFEGUARD THE PUBLIC AGAINST INJURY OR DAMAGE.

IT IS EXPRESSLY PROVIDED THAT, WITH RESPECT TO ANY LIMITED ACCESS HIGHWAY, THE UTILITY SHALL NOT HAVE OR GAIN DIRECT ACCESS, EITHER INGRESS OR EGRESS, FROM THE MAIN TRAVELED WAY OF SAID HIGHWAY OR ITS ON OR OFF RAMP TO ANY FACILITIES AUTHORIZED BY THE PERMIT EXCEPT UPON SPECIFIC APPROVAL BY THE DEPARTMENT.

IT IS THE UTILITY'S RESPONSIBILITY TO VERIFY THE LIMITS OF RIGHT-OF-WAY FOR LOCATION OF THE UTILITY FACILITIES AUTHORIZED HEREBY.

NO INHERENT OR RETAINED RIGHT OR PRIVILEGE OF ANY ABUTTING PROPERTY OWNER IS AFFECTED BY THIS PERMIT NOR IS THE DEPARTMENT RESPONSIBLE FOR ANY CLAIM WHICH MAY DEVELOP BETWEEN THE UTILITY AND ANY PROPERTY OWNER CONCERNING USE OF THE RIGHT OF WAY. THE UTILITY IS RESPONSIBLE FOR MAINTAINING REASONABLE ACCESS TO PRIVATE DRIVEWAYS DURING INSTALLATION OF ITS FACILITIES AND FOR RESTORATION OF DRIVEWAYS TO THE PROPERTY OWNER'S SATISFACTION.

APPROVAL OF THIS PERMIT DOES NOT CONSTITUTE APPROVAL OF DESIGN OR CONSTRUCTION DETAILS FOR THE PROPOSED UTILITY FACILITIES. THE UTILITY IS RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE GOVERNMENTAL CODES AND REGULATIONS.

THE UTILITY SHALL GIVE THE DEPARTMENT A MINIMUM OF 24 HOURS NOTICE PRIOR TO BEGINNING ANY WORK UNDER THIS PERMIT.

THIS PERMIT SHALL BE VOID UNLESS WORK HEREUNDER IS BEGUN WITHIN TWELVE (12) MONTHS OF THE DATE OF ITS APPROVAL.

THE PROVISIONS OF THIS PERMIT ARE REGULATORY AND NOT CONTRACTUAL. NO INTEREST OR RIGHT OF A UTILITY GRANTED BY THIS PERMIT MAY BE TRANSFERRED TO ANOTHER EXCEPT BY WRITTEN CONSENT OF THE DEPARTMENT. THIS PERMIT MAY BE REVOKED AT THE PLEASURE OF THE DEPARTMENT UPON THIRTY (30) DAYS WRITTEN NOTICE TO THE UTILITY.

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

SPECIAL PROVISION

Permit No. 1287199

- No access or work will be utilized inside SR 403/I-85 right of way. All access and work will be gained via easement off the right of way. No equipment is to be parked, stored, loaded or unloaded from the Interstate right of way. If any work is to be done inside the right of way an additional review, of the work, will be required by this office.
- If an obstruction (example: rock) is hit during boring operations and the bore is to be abandoned the void is to be grout filled immediately.
- Monitor by visual inspection the roadway every two (2) hours during operation for any irregularities.
- Any fencing removed or damaged must be replaced. New fencing may be required.

Thank You, Tonia Hinton, State Utility Permit Manager

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

UTILITY SPECIAL PROVISION

Section 104—Scope of Work

Permit No: 1287199

Add the following:

Section 104—UTILITY RESTORATION AND CLEANUP

Add the following:

104.09 General Description

The utility company or its contractor shall plan, coordinate, and prosecute the work such that disruption to personal property and business is held to a practical minimum.

All construction areas abutting lawns and yards of residential or commercial property shall be restored promptly. Backfilling of underground facilities, ditches, and disturbed areas shall be accomplished on a daily basis as work is completed. Finishing, dressing, and grassing shall be accomplished immediately thereafter as a continuous operation within each area being constructed with emphasis placed on completing each individual

yard or business frontage. Care shall be taken to provide positive drainage to avoid ponding or concentration of runoff.

Handwork, including raking and smoothing, shall be required to ensure that the removal of roots, sticks, rocks, and other debris is removed in order to provide a neat and pleasing appearance. Grassing, when in season, shall immediately follow in order to establish permanent cover at the earliest date. If grassing is not in season, proper erosion control shall be installed and maintained.

The Department's engineer shall be authorized to stop all work by the utility company or its contractor when restoration and cleanup are unsatisfactory and to require appropriate remedial measures.

Date: September 8, 2005
First Use Date GUPS: September 8, 2005
Revised: February 26, 2010

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

UTILITY SPECIAL PROVISION

Section 105— Control of Work

Permit No. 1287199

Add the following:

Section 105—Special Assurances form

Add the following:

105.17 General Description

If the work proposed in this permit is to be done by forces other than the applicant's own and/or approved continuing contractors, a Special Assurances form must be executed and made a part of this permit. Prior to any work, an executed form shall be given to the D.O.T. Inspector.

**SPECIAL ASSURANCES FOR UTILITY CONTRACT WORK WITHIN PUBLIC
RIGHT OF WAY**

Permit Number: _____ Date: _____

Project Identification: _____

Contract Identification: _____

All work under this contract which is to be performed on public right of way under control and permit of the Georgia Department of Transportation shall be done in compliance with the terms and conditions of the Department's utility permit as per the Utility Accommodation Policy and Standards manual, current editions, including any utility installation Standards and Specifications. The Department shall have the right to inspect the work and to require any action necessary to correct all deviations from said terms and conditions.

Contractor agrees that the Georgia Department of Transportation shall not be held liable for any extra expense or damages to the Contractor as a result of the requirement for compliance with the Department's standards and specifications or any corrective action which the Department may order in enforcement thereof.

Company Name

Contractor's Authorized Representative

Date



UTILITY PERMIT CHECKLIST INFORMATION

UTILITY COMPANY CITY OF LAGRANGE COUNTY Troup DATE 28-APR-23

PERMIT NO 1287199 ROUTE NO 040300 BEG MILE POINT 11.62 ENDING MILE POINT 11.94

UTILITY REPRESENTATIVE zach rhodes Phone 7068832061 Est Start Date: 01-JUL-23 Est End Date: 31-DEC-23

1. WILL YOU BE THE PRIME CONTRACTOR ? (Yes)
IF NOT, WHO WILL BE ?
2. WHO WILL SUPERVISE THE CONSTRUCTION ? NAME zach rhodes EMERGENCY PHONE 7068832061
3. DO YOU UNDERSTAND THE PERMIT COMPLETELY ? (Yes)
4. DO YOU UNDERSTAND THAT THE PERMIT AND PLANS ARE TO BE ON LOCATION WHEN ANY WORK IS BEING DONE AND THAT AN ORANGE PERMIT SIGN IS TO BE ERECTED AND MAINTAINED UNTIL WORK IS COMPLETE ? (Yes)
5. DO YOU UNDERSTAND THE TRAFFIC CONTROL REQUIREMENTS ? (Yes)
6. DO YOU UNDERSTAND THAT BLOCKING OF THE LANES MUST BE APPROVED BY THE AREA PERMIT INSPECTOR OR THE AREA ENGINEER? (Yes)
7. DO YOU UNDERSTAND THAT ANY FLAGGING OF TRAFFIC WILL BE DONE BY CERTIFIED FLAGGERS ? (Yes)
8. DO YOU UNDERSTAND THAT A MEETING WILL BE NECESSARY BETWEEN YOURSELF, THE CONTRACTOR, AND THE AREA PERMIT ENGINEER? (Yes)
9. DO YOU UNDERSTAND THAT YOU ARE TO NOTIFY THE AREA PERMIT INSPECTOR 24 HOURS BEFORE ANY WORK IS TO BEGIN? (Yes)
10. DO YOU UNDERSTAND AN ORANGE PERMIT SIGN IS TO BE ERECTED AND MAINTAINED UNTIL WORK IS COMPLETED? (Yes)
11. DO YOU UNDERSTAND THAT THE FACILITY WILL NOT BE PLACED IN SERVICE UNTIL ALL CONSTRUCTION ITEMS ARE COMPLETE UNLESS APPROVED BY THE APPROPRIATE DISTRICT OFFICE? (Yes)
12. DO YOU UNDERSTAND THAT THE AREA PERMIT INSPECTOR WILL GIVE INTERPRETATION WHEN REQUESTED AND WILL MAKE SPOT CHECKS ON THE CONSTRUCTION AS WORK PROGRESS; BUT, WILL BE YOUR RESPONSIBILITY TO SEE THAT THE WORK CONFORMS TO THE OUTLINE IN YOUR PERMIT AND ACCORDING TO YOUR APPROVED PLAN? (Yes)
13. DO YOU UNDERSTAND THAT YOU MUST COMPLY WITH THE GEORGIA DEPARTMENT OF NATURAL RESOURCES DIVISION SEDIMENT CONTROL RULES AND REGULATION, CHAPTER 391-3-7 + OCGA 12-7-1 (Yes)
14. ARE THERE ANY SPECIAL PROVISIONS THAT NEED TO BE DISCUSSED ? (No)
15. DO YOU UNDERSTAND THE NEED FOR SAFETY EQUIPMENT TO BE WORN AT ALL TIMES ? (Yes)
16. DO YOU ACCEPT THAT NO OPEN PITS ARE ALLOWED IN THE ROW OVERNIGHT ? (Yes)

UTILITY REPRESENTATIVE:

INSPECTOR:

DOT 8520

DEPARTMENT OF TRANSPORTATION

DISTRICT NO. 3 APPROVAL DATE 28-APR-23

PERMIT NO. 1287199 COUNTY Troup

PERMITTEE CITY OF LAGRANGE

CONTRACTOR

STATE INSPECTOR William B. Yearta

TELEPHONE 706-845-4115

INSPECTOR'S LOG

☐ AERIAL

☒ UNDERGROUND

☐ OTHER

INITIAL	DATE	INITIAL	DATE	INITIAL	DATE

DISPLAY THIS WITHIN WORKING AREA SO AS TO BE VISIBLE FROM HIGHWAY

GDOT Utility Permit: GUPS - Area Permit Inspector (API) Utility Permit Checklist
Revised 2018-06-25

INSTRUCTIONS:

The Utility Owner will be required to provide the following information to the API in order for the API to activate the permit. The information must be as current as possible. The Utility Owner will be required to notify the API of any changes/revisions/additions to this form at least 72-hrs prior to beginning work. All text box fields are required, unless otherwise noted. All radio button choices require selecting either "Yes" or "No". The Utility Owner must contact the API to discuss any "No" answers.

Permit No.:

1287199

County Name:

Troup

State Route No.:

040300

GDOT PI No., if applicable:

Communication Permit No. : Electric facility owners to provide only if to be paired with an Electrical Permit.

Emergency Permit No., if applicable: Obtained from the District Utilities Office for Emergency work only: Apply for a regular encroachment permit within 5 business days after the onset of the emergency. The emergency permit number must be provided to pair the emergency permit to the encroachment permit.

Utility Owner /Company Name:

City of LaGrange

Utility Owner's Emergency Response Information: Utility Owner must provide a valid emergency contact full name and valid 24-hr phone number.

Zack Rhodes Design/GIS Specialist 706-883-2061, zrhodes@lagrange.ga.org

Utility Representative Information: Must include Rep's full name, job title, a valid 24-hr phone number, and a valid e-mail address.

Zack Rhodes Design/GIS Specialist 706-883-2061, zrhodes@lagrange.ga.org

Estimated work start date: mm/dd/yyyy

07/01/2023

Estimated work completion date: mm/dd/yyyy

12/31/2023

Will the Utility Owner be the Prime Contractor?:

☒ Yes ☐ No

If NOT, who will be the Prime Contractor?: Must include Prime's company name, the Contractor's full name, a valid 24-hr phone number, and a valid e-mail address.

Will the Utility Owner furnish complete construction supervision?:

☒ Yes ☐ No

Who will supervise the construction?: Must include a company name (if other than the Utility Owner), the Field Supervisor's full name, a valid 24-hr phone number, and a valid e-mail address.

Zack Rhodes zrhodes@lagrange.org 706-883-2061 -706-881-5630

Do you understand the permit completely?:

☒ Yes ☐ No

Do you understand that the permit and plans are to be on location (on the work site) when any work is done?:
Failure to do so will result in the issuance of a Stop Work Order.

☒ Yes ☐ No

Do you understand the Traffic Control (TC) requirements?: Improper TC will result in the issuance of a Stop Work Order.

☒ Yes ☐ No

Provide the Worksite Traffic Control Supervisor's (WTCS) full name, 24-hr phone number and e-mail address:
(Per 3.7.D of the UAM.)

Zack Rhodes zrhodes@lagrange.org 706-883-2061 706-881-5630

Will you be milling or excavating within 1000 feet of any existing traffic signal or flashing beacon? If yes notify GDOT Traffic Operations Office at least 24 hours prior to starting any work.

☐ Yes ☒ No

Are there any holiday restrictions on TC?: If "Yes", call the API at least 24-hrs prior to beginning work to discuss.

☐ Yes ☒ No

Do you understand that blocking of travel lanes must be approved by the API and or the Area Engineer?:
Contact the API 3 days (72 hrs) prior to any planned lane closures to provide information required for a Traffic Interruption Report (TIR).

☒ Yes ☐ No

Do you understand that any flagging of traffic will be done by certified flaggers?:

☒ Yes ☐ No

Do you understand that a meeting will be necessary between yourself, the contractor, and the API?:

☒ Yes ☐ No

Do you understand that you are to notify the API 24-hrs before any work is to begin?:

☒ Yes ☐ No

Do you understand that an orange permit sign is to be on-site at all times and maintained until work is complete?: Failure to do so may result in the issuance of a Stop Work Order.

☒ Yes ☐ No

Do you understand that the facility will not be placed in service until all construction items are complete, unless approved by the appropriate District Office?:

☒ Yes ☐ No

Do you understand that the Area Permit Inspector will give plan interpretation when requested and will make spot checks on the construction as work progresses; but, it will be the Utility's responsibility to see that the work conforms to the provisions outlined in the permit and to the approved plan?: Work not conforming to the approved permit documents will result in the issuance of a Stop Work Order.

☒ Yes ☐ No

Do you understand that you must comply with the Georgia Department of Natural Resources Division Sediment Control Rules and Regulations, Chapter 391-3-7 and OCGA 12-7-1?:

☒ Yes ☐ No

Are there any Special Provisions that need to be discussed?: Contact the API to discuss any Special Provisions.

☐ Yes ☒ No

Do you understand the need for safety equipment to be worn at all times?:

☒ Yes ☐ No

Do you accept that no open pits are allowed in the ROW overnight?:

☒ Yes ☐ No

Individual providing the above information:

Provide individual's full name, Company Name, a valid phone number and a valid e-mail address.

Zack Rhodes, City of LaGrange Design/GIS Specialist, 706-883-2061 zrhodes@lagrangega.org

Date:

04/28/2023

Printing Instructions:

Please email the completed form to your Area Permit Inspector.

End of Form