



# **MACON WATER AUTHORITY**

## **CONTRACT FOR**

### **MWA WATER MAIN RELOCATION SR87/RIVERSIDE DRIVE AT ARKWRIGHTROAD**

**GDOT PI 0015692**

**DECEMBER 14, 2022**

**CEG FILE NO: M0175.054**



#### **PROPRIETARY NOTICE**

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This document is prepared by the Macon Water Authority for the sole purpose of communicating to our vendors. The proprietary information contained herein is based on the requirements of the project. None of the information in this document is to be shared with any third parties without the expressed written consent of the Macon Water Authority.

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## SECTION 00020

**INVITATION TO BID****THE MACON WATER AUTHORITY  
MACON, GEORGIA**

Sealed Bids for furnishing all materials, labor, tools, equipment and appurtenances necessary for the Water Main Relocation SR 87/ Riverside Drive at Arkwright Road, GDOT PI 0015692 (the "Project") will be received by the Macon Water Authority (the "Owner"), at the Macon Water Authority, 537 Hemlock Street, Human Resources Training Room, Macon, Georgia 31201 until 2:00 P. M., local time, April 6, 2023, and then at said office publicly opened and read aloud. All bidders must attend a mandatory pre-bid meeting at the same location at 10:00 A.M. on March 23, 2023. All bid questions must be submitted to the Owner by 10:00 A.M. on March 30, 2023. The Bidder should attend the pre-bid meeting in its entirety.

The Project will be awarded in one Contract. Fifty-one percent (51%) of the Work under the Contract Documents must be self-performed by the General Contractor. The Project will be awarded by base bid on a lump sum basis for the performance and completion of all Work required by the Contract Documents.

The Project consists of installing approximately 1700 Linear Feet of 8" Class 350 Ductile Iron Watermain and approximately 140 linear feet of 6" Class 350 ductile iron water main.

The Contract Documents include, but may not be limited to, the Instructions to Bidders, the Contract Agreement, the General Conditions, the Drawings, the Specifications (Divisions 01 through 46, inclusive, where applicable), and the forms of Bid Bond, Performance Bond, and Payment Bond. These and any other Contract Documents may be examined at the following location:

Carter Engineering Group, LLC  
6310 Peake Road, Suite 200  
Macon, GA 31210

Copies of Contract Documents may be obtained at the office of the Engineer, (Carter Engineering Group, LLC, 6310 Peake Road, Suite 200, Macon, GA 31210, 478-219-2600) upon a non-refundable payment of **\$200.00** for each set. A street address must be provided to ensure prompt delivery. No partial sets of bidding documents shall be issued. Bidders must purchase the Contract Documents in order to be eligible to submit a bid.

Each Bid must be accompanied by a Bid Bond in the amount of 5% of the Bid, prepared on the form of Bid Bond that is part of the Contract Documents, duly executed by the Bidder as principal and having as surety thereon a surety company licensed to do business in the State of Georgia and listed in the latest issue of U.S. Treasury Circular 570.

Bidders must comply with the Disadvantaged Business Enterprise Participation Requirements specified in the Instructions to Bidders.

The Bidder shall affix to the outside of its Bid envelope the Bidder's Georgia Utility Contractor License Number. A license number of a Utility Manager or a subcontractor is insufficient, and any Bid that fails to affix to the outside of its Bid envelope the Bidder's Georgia Utility Contractor License Number may be rejected.

The successful Bidder for this Project shall be required to furnish a Performance Bond and Payment Bond, satisfactory to the Owner, each in the amount of 100 % of the Contract Price.

Employment of Local Businesses and Contractors: It is the desire of the Owner that local businesses--including disadvantaged, minority, and women enterprise subcontractors-- be given the opportunity to participate on the various parts of the Work.

The Owner's encouragement of participation of disadvantaged, minority, and women enterprises and of locally owned businesses and contractors is not intended to restrict or limit competitive bidding or to increase the cost of the Work. The Owner supports a healthy, free market system that seeks to include responsible local businesses and provide ample opportunities for local business growth and development.

In an effort to assist minority-owned businesses, Georgia law permits an income tax adjustment on the state tax return of any company that subcontracts with a certified minority-owned firm to furnish goods, property or services to the State of Georgia pursuant to O.C.G.A. §48-7-38. Suppliers should consult with their tax advisors to find out how to take advantage of these tax credits.

The Owner reserves the right to reject any or all Bids. The Owner reserves the right to waive informalities and technicalities.

The Macon Water Authority  
Ron Shipman  
Interim Executive Director & President

END OF SECTION

## SECTION 00100

**INSTRUCTIONS TO BIDDERS****1.01 CONTRACT DOCUMENTS**

- A. The Bidder's attention is directed to the General Conditions and other Contract Documents, all of which should be reviewed and studied by the Bidders before submitting a Bid.
- B. The Contract Documents shall define and describe the complete Work to which they relate.

**1.02 DEFINITIONS**

The Bidder's attention is called to the definitions set forth in Article 41 of the General Conditions.

**1.03 PREPARATION AND EXECUTION OF BID**

- A. Each Bid must be prepared to represent that it is based solely upon the materials and equipment specified in the Contract Documents.
  - 1. *Trade Names.*— When reference is made in the Contract Documents to trade names, brand names, or to the names of manufacturers, such references are made solely to indicate that products of that description may be furnished and are not intended to restrict competitive bidding. Unless requests for approvals of other products have been received and approvals have been published by addendum in accordance with the procedure described below in this Section, the successful Bidder may furnish no products of any trade names, brand names, or manufacturers' names except those designated in the Contract Documents.
  - 2. *Use of other products.*—If a Bidder desires to use products of trade or brand names or of manufacturers' names which are different from those specified in the Contract Documents, application for the approval of the use of such products must be received by the Engineer at least ten (10) days prior to the date set for the opening of Bids. The application to the Engineer for approval of a proposed product must be accompanied by:
    - a. a schedule setting forth in which respects the materials or equipment submitted for consideration differ from the materials or equipment designated in the Contract Documents; and
    - b. a copy of the published recommendations of the manufacturer for the installation of the product together with a complete schedule of changes in the drawings and specifications, if any, which must be made in other work in order to permit the use and installation of the proposed product in accordance with the recommendations of the manufacturer of the product.

In addition, the Engineer will give consideration to reports from reputable independent testing laboratories, verified experience records showing the reputation of the proposed product with previous users, evidence of reputation of the

manufacturer for prompt delivery, evidence of reputation of the manufacturer for efficiency in servicing its products, or any other written information that is helpful in the circumstances. To be approved, a proposed product must also meet or exceed all express requirements of the Contract Documents.

3. *Burden of proof.*— The degree of proof required for approval of a proposed product as acceptable for use in place of a named product or products is that amount of proof necessary to convince a reasonable person beyond all doubt.
  4. *Request for conference.*—Any Bidder who alleges that rejection of a submittal is the result of bias, prejudice, caprice, or error on the part of the Engineer may request a conference with a representative of the Owner: PROVIDED, that the request for said conference, submitted in writing, shall be received by the Owner at least five (5) days prior to the date set for the opening of Bids, time being of the essence.
  5. *Issuance of addenda.*— If the submittal is approved by the Engineer, an addendum will be issued to all prospective Bidders. Issuance of an addendum is a representation to all Bidders that the Engineer, in the exercise of its professional judgment and discretion, established that the product submitted for approval is acceptable and meets or exceeds all express requirements.
- B. Each Bid must be submitted on the Bid forms which are a part of the Contract Documents. **All blank spaces for Bid prices, both words and figures, must be filled in and completed in ink.** In case of discrepancy, the amount shown in words will govern. All required enclosed certifications or other documents must be fully completed and executed when submitted.
- C. In case of discrepancies between the figures shown in the unit prices and the totals, the unit prices shall apply and the totals shall be corrected to correspond with the unit prices. In case of discrepancies between written amounts and figures, written amounts shall take precedence over figures and the sum of all Bid extensions (of unit prices) plus lump sum items shall take precedence over the Bidders input of the Bid Total.
- D. Each Bid must be submitted in a sealed envelope, addressed to the Macon Water Authority (the “Owner”). Each sealed envelope containing a Bid must be plainly marked on the outside as, **“Water Main Relocation SR 87 / Riverside Drive at Arkwright Road – GDOT PI 0015692”**.
- E. The Bidder shall provide on the outside of the sealed envelope the following information:
1. Bidder's Name;
  2. Bidder's Georgia Utility Contractor License Number; and,
  3. The words, “SEALED BID”
- F. Any Bid submitted which does not contain the above information on the outside of the sealed envelope will not be opened and will be returned to the Bidder.

- G. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed as follows:
- THE MACON WATER AUTHORITY  
Attn: Gene Inman  
790 Second Street  
Post Office Box 108  
Macon, Georgia 31202-0108
- H. Any and all Bids not meeting the aforementioned criteria for Bid submittal may be declared non-responsive, and subsequently returned to the Bidder unopened.
- I. The Bidder, in signing a Bid on the whole or any portion of the Project, shall conform to the following requirements:
1. Bids which are not signed by individuals making the Bid shall have attached thereto a power of attorney evidencing authority to sign the Bid in the name of the person for whom it is signed.
  2. Bids which are signed for a partnership shall be signed by all of the partners or by an attorney-in-fact. If a Bid is signed by an attorney-in-fact, there should be attached to the Bid a power of attorney executed by the partners evidencing authority to sign the Bid.
  3. Bids which are signed for a corporation shall have the correct, legal corporate name thereof, as reflected in the records of the Georgia Secretary of State, and the signature of the president or other authorized officer of the corporation manually written below the corporate name following the wording "By \_\_\_\_". The corporate seal shall be affixed to the Bid.
  4. The Bidder shall complete, execute and submit the following documents, which are a part of the Contract Documents:
    - a. The Bid;
    - b. The Bid Bond;
    - c. Statement of Bidder's Qualifications;
    - d. Statement of Equipment;
    - e. Corporate Certificate, if the Bidder is a corporation;
    - f. Statement of Disadvantaged Business Enterprise ("DBE") compliance;
    - g. Contractor's License Certification;
    - h. Photocopy of State of Georgia Utility Contractor's License;
    - i. Photocopy of Certificate of Authority from Georgia Secretary of State's Office to do work in Georgia (if out of state contractor);
    - j. Non-Collusion Affidavit of Prime Bidder;
    - k. Any and all forms, certifications or other documentation required by the Georgia Department of Natural Resources Environmental Protection Division.



## **1.04 METHOD OF BIDDING**

The unit or lump sum price for each of the several items in the Bid of each Bidder shall include its pro rata share of overhead and profit so that the sum of the products, obtained by multiplying the quantity shown for each item by the unit price, represents the total Bid. Any Bid not conforming to this requirement may be rejected. Additionally, unbalanced Bids (including unbalanced unit prices) may be rejected. Conditional Bids shall not be accepted. *The special attention of all Bidders is called to this provision, for should conditions make it necessary to revise the quantities, no limit will be fixed for such increased or decreased quantities, nor extra compensation allowed.*

## **1.05 ADDENDA AND INTERPRETATIONS**

- A. No interpretation of the meaning of the Drawings, Specifications or other pre-bid documents or Contract Documents shall be made to any Bidder orally.
- B. Any and all such interpretations and any supplemental instructions will be in the form of written Addenda to the Contract Documents which, if issued, will be mailed, shipped or faxed to all prospective Bidders (at the respective addresses furnished) at least seventy-two (72) hours (exclusive of weekends and holidays) prior to the date fixed for the opening of Bids.
- C. Failure of Bidders to receive or acknowledge any Addendum shall not relieve them of any obligation under the Bid or the Contract Documents. All Addenda shall become part of the Contract Documents and obligations there under binding.

## **1.06 BID MODIFICATIONS**

Bidders may modify their Bid by facsimile communication at any time prior to the scheduled closing time for receipt of Bids, provided such facsimile communication is received by the Owner prior to the time Bids are required, and provided further that the Owner is satisfied that a written confirmation of the facsimile modification over the signature of the Bidder was mailed by the Bidder to the Owner prior to the time Bids are required. The facsimile communication should not reveal the Bid price but should provide the addition or subtraction or other modification so that the final prices or terms will not be known by the Owner until the sealed Bid is opened. If written confirmation from the Bidder is not received by the Owner within two business days from the time Bids are required, no consideration will be given to the facsimile modification and the facsimile modification shall be rejected.

## **1.07 BID SECURITY**

- A. Each Bid must be accompanied by a Bid Bond, prepared on the form of Bid Bond included herein, duly executed by the Bidder as principal and having as surety thereon a surety company authorized to do business in the State of Georgia and listed in the latest issue of U.S. Treasury Circular 570, in the amount of **ten (10%)** percent of the

Bid. Attorneys-in-fact who sign Bonds must file with each Bond a currently dated and valid original of their power of attorney. Where validity and currentness of a power of attorney are established by certification executed by a corporate officer, the certification shall be made and executed by a corporate officer of record, as reflected in the records of the Georgia Secretary of State, or by valid corporate resolution or authorization identifying such corporate officer.

- B. Except as provided in O.C.G.A. §§ 36-91-52 and 36-91-53, if for any reason whatsoever the successful Bidder withdraws from the competition after opening of the Bids, or if Bidder refuses to execute and deliver the Contract and Bonds required in Article 2 of the General Conditions, the provisions of the Bid Bond may be enforced.
- C. Except as provided in O.C.G.A. §§ 36-91-52 and 36-91-53, a Bid may not be revoked or withdrawn until sixty (60) days after the time set for opening the Bids. Upon expiration of this time period, the Bid will cease to be valid, unless the Bidder provides written notice to the Owner prior to the scheduled expiration date that the Bid will be extended for a time period specified by the Owner.

## **1.08 RECEIPT AND OPENING OF BIDS**

The Owner may consider a technicality and informality any Bid not prepared and submitted in strict accordance with the provisions hereof and may waive any technicality and informality or reject any and all Bids. Any Bid may be withdrawn prior to the above scheduled time for the opening of Bids or authorized postponement thereof. Any Bid received after the time and date specified shall not be opened.

## **1.09 CONDITIONS OF THE PROJECT**

- A. Each Bidder must be informed fully of the conditions relating to the construction of the Project and the employment of labor thereon. Failure to do so will not relieve a successful Bidder of the obligation to furnish all material and labor necessary to carry out the provisions of the Contract Documents. Insofar as possible, the Bidder, in carrying out the Work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.
- B. The Bidder is advised to examine the location of the Project and to be informed fully as to its conditions; access requirements, the conformation of the ground; the character, quality and quantity of the products needed preliminary to and during the prosecution of the work; the general and local conditions and all other matters which can in any way affect the work to be done under the Contract Documents. Failure to examine the site will not relieve the successful Bidder of an obligation to furnish all products and labor necessary to carry out the provisions of the Contract Documents.
- C. The Bidder shall notify the Owner of the date and time Bidder proposes to examine the location of the Project. The Bidder shall confine examination to the specific areas designated for the proposed construction, including easements and public right-of-ways. If, due to some unforeseen reason, the proceedings for obtaining the proposed construction site (including easements), have not been completed, the Bidder may enter

the site only with the express consent of the property owner. The Bidder is solely responsible for any damages caused by examination of the site.

- D. All anticipated federal, state and local permits required for the Project HAVE NOT been obtained. **“Required permits are anticipated on or before February 28, 2023”.**
- E. All rights of way and easements anticipated for the Project **HAVE** been obtained

## **1.10 EQUAL EMPLOYMENT OPPORTUNITY**

- A. During the performance of the Contract, the Bidder agrees as follows:
  - 1. The Bidder shall not discriminate against any employee or applicant for employment, or in any employment action during employment, based upon any applicable, legally-recognized and protected basis, including, but not limited to, veteran status, uniformed service member status, race, color, religion, sex, sexual orientation, gender identity, age (40 and over), pregnancy (including childbirth, lactation and related medical conditions), national origin or ancestry, citizenship status, physical or mental disability, genetic information (including testing and characteristics), or any other consideration protected by federal, state, or local law. “Shall not discriminate” shall mean and include, without limitation, recruiting, compensation, rates of pay, selection for training including apprenticeship, promotion, upgrading, demotion, downgrading, transfer, lay-off and termination.
  - 2. The Bidder shall, in all solicitation or advertisement for employees placed by or on behalf of Bidder, state that all qualified applicants will receive consideration for employment without regard to any applicable, legally-recognized and protected consideration, including, but not limited to veteran status, uniformed service member status, race, color, religion, sex, sexual orientation, gender identity, age (40 and over), pregnancy (including childbirth, lactation and related medical conditions), national origin or ancestry, citizenship status, physical or mental disability, genetic information (including testing and characteristics), or any other characteristic or basis protected by federal, state, or local law.
  - 3. The Bidder shall send to each labor union or representative of the workers, with which the Bidder has a collective bargaining agreement or other contract or understanding, a notice advising the labor union or worker's representative of the Bidder's commitments under the Equal Employment Opportunity Program of the Owner and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
  - 4. The Bidder and its subcontractors, if any, shall file compliance reports at reasonable times and intervals with the Owner in the form and to the extent prescribed by the Owner or the Georgia Department of Natural Resources. Compliance reports filed at such times as directed shall contain information as to the employment practices, policies, programs and statistics of the Bidder and its subcontractors.

6. The Bidder shall demonstrate by the documentation required in Paragraph C, below, that a “Good Faith Effort” has been made to achieve compliance with the Owner’s goal that a minimum of ten percent (10%) of the Contract Price shall be subcontracted to a Disadvantaged Business Enterprise (DBE), which includes *business enterprises owned by women and by minorities*. More specifically, as used herein, the term “DBE” means a firm or business which is at least fifty-one percent (51%) owned, operated, capitalized, and controlled by one or more United States citizens or lawfully admitted residents who are socially and economically disadvantaged, as defined below.

As used herein, social disadvantage means an individual who is a member of a *presumed group* or who is a *woman*. Economic disadvantage, as used herein, means, generally, a socially disadvantaged individual who does not have a personal net worth in excess of \$1.32 million dollars, excluding the primary residence and ownership in the subject firm.

Member(s) of a *presumed group* include Black Americans (any Black racial group originating in Africa); Hispanic Americans (origins in Mexico, Puerto Rico, Cuba, Central and South America, or other Spanish or Portuguese cultures); Native Americans (Native of Alaska or Hawaii or certified member of a federal or state recognized Tribe); Asian Pacific Americans (origins in the Pacific Islands, China, Taiwan, Korea, Japan, Thailand, Burma, Cambodia, Vietnam, Malaysia, Indonesia, Singapore, or Philippines); and Subcontinent Asian Americans (origins in India, Pakistan, Bangladesh, Bhutan, Maldives Islands, Nepal, or Sri Lanka).

As used herein, the term “subcontracted” means providing subcontracting services or furnishing products or materials to be utilized in the performance of the Work.

6. The Bidder shall include the provisions of paragraphs 1 through 6 of this Section 1.10.A in every subcontract or purchase order so that such provisions will be binding upon each subcontractor or vendor.
- B. In determining whether a Bidder has made “Good Faith Efforts”, the Owner will look not only at the different kinds of effort that a Bidder has made, but also the quantity and intensity of these efforts.
  - C. The following list of kinds of efforts is provided for consideration:
    1. Whether the Bidder attended any pre-solicitation or pre-bid meetings that were scheduled by the Agent to inform DBEs of contracting and subcontracting opportunities;
    2. Whether the Bidder advertised in general circulation, trade association, and minority-focus media concerning the sub-contracting opportunities;
    3. Whether the Bidder provided written notice to a reasonable number of specific DBEs that their interest in the Contract was being solicited, in sufficient time to

allow the DBEs to participate effectively;

4. Whether the Bidder followed up initial solicitations of interest by contacting DBEs to determine with certainty whether the DBEs were interested;
  5. Whether the Bidder selected portions of the Work to be performed by DBEs in order to increase the likelihood of meeting the DBE goals (including, where appropriate, breaking down contracts into economically feasible units to facilitate DBE participation);
  6. Whether the Bidder provided interested DBEs with adequate information about the Drawings, Specifications and requirements of the Contract Documents;
  7. Whether the Bidder negotiated in good faith with interested DBEs, not rejecting DBEs as unqualified without sound reasons based on a thorough investigation of their capabilities;
  8. Whether the Bidder made efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance required by the Contract Documents or Contractor; and
  9. Whether the Bidder effectively used the services of available minority or women community organizations; minority or women contractor's groups; local, state and federal minority or women business assistance offices and other organizations that provide assistance in the recruitment and placement of DBEs.
- D. Each Bidder shall include with his or her Bid a Statement of Disadvantaged Firm Utilization. Such statement shall include, as a minimum, the names and addresses of all disadvantaged/minority/women enterprise firms providing subcontracting services, furnishing products or materials, etc., the nature of the work to be contracted; and the anticipated cost of the services by each named firm as a percentage of the total Contract Price set forth in the Bid. The percentage participation should be calculated on the basis of the proportion of total dollar value of the Bid, including bulk purchase materials supplied by DBEs.
- E. It is the desire of the Owner that DBEs be given the opportunity to bid on the various parts of the Work, and that to the extent feasible, DBE firms in the Middle Georgia area will be solicited and used in order to meet the DBE goal set forth above. However, this desire is not intended to restrict or limit competitive bidding or to increase the cost of the Work. The Owner supports a healthy, free market system that seeks to include responsible businesses and provide ample opportunities for business growth and development.

## **1.11 NOTICE OF SPECIAL CONDITIONS**

If any special federal, state, county or city laws, municipal ordinances, and the rules and regulations of any authorities having jurisdiction over construction of the Project, enclosed, herein referred to, or applicable by law to the Project, conflict with

requirements of the Contract Documents, then the federal, state, county or city laws, municipal ordinances, and the rules and regulations of any authorities having jurisdiction over construction of the Project shall prevail and supersede the conflicting requirements of the Contract Documents.

## **1.12 OBLIGATION OF BIDDER**

- A. By submission of a Bid, each Bidder warrants that Bidder has inspected the site and has read and is thoroughly familiar with the Contract Documents (including all addenda). The failure or omission of any Bidder to examine any form, instrument or document shall in no way relieve any Bidder from any obligation in respect to the Bid.
- B. Special attention is directed to Article 2 and Article 4, "Insurance" contained at pages 00700-3 through 00700-5 in the General Conditions. The Owner requires (1) "Worker's Compensation and Employer's Liability Insurance," (2) "Commercial General and Umbrella Liability Insurance," (3) "Business Auto and Umbrella Liability Insurance," and (4) "Materials and Floater" Insurance. For each of the required policies, the Owner requires a certificate of insurance at least quarterly, a copy of the endorsement of the insurance company showing the Owner as an additional insured, and a copy of the insurance policy declaration and any necessary endorsements.
- C. Attention is further directed to Paragraph 6 of 00500, Contract Agreement and Article 9 of 00700, General Conditions regarding assignments. Prior written consent of the Owner is required for any assignment of any portion of this Contract, including any assignment due to "buyout" of Bidder or other acquisition of Bidder where the Bidder is a corporation or where Bidder is 50 percent or more owned by a corporation, firm, or person.

## **1.13 METHOD OF AWARD**

- A. The Contract, if awarded, will be awarded to the lowest responsible and responsive Bidder whose Bid meets the requirements and criteria set forth in the Contract Documents. The Contract, if awarded, will be awarded by base bid on a lump sum basis, comprised of unit prices, for the performance and completion of all Work required by the Contract Documents.
- B. The Bidder to whom the award is made will be notified. The Owner reserves the right to reject any and all Bids and to waive any technicalities and informalities in Bids received whenever such rejection or waiver is in the Owner's interest.
- C. A responsive Bidder shall be one who submits a Bid in the proper form without qualification or intent other than as called for in the Contract Documents, and who binds itself on behalf of the Bid to the Owner with the proper Bid Bond completed and attached, and who properly completes all forms required to be completed and submitted at the time of the Bidding. The Bidder shall furnish all data, documents, forms, and certifications required by the Contract Documents. Failure to do so may result in the Bid being declared non-responsive.

D. A responsible Bidder shall be one who can fulfill the following requirements:

1. The Bidder shall maintain a permanent place of business. This requirement applies to the Bidder where the Bidder is a division of a corporation, or where the Bidder is 50 percent or more owned by a person, corporation or firm.
2. The Bidder shall demonstrate adequate construction experience and sufficient equipment resources to properly perform the work under and in conformance with the Contract Documents. This evaluation will be based upon a list of completed or active projects and a list of construction equipment available to the Bidder to perform the work. The Owner may make such investigations as deemed necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may reasonably request. The Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract Documents and to complete the Project contemplated therein.
3. The Bidder shall demonstrate financial resources of sufficient strength to meet the obligations incident to the performance of the Work covered by the Contract Documents. The ability to obtain the required Performance and Payment Bonds will not alone demonstrate adequate financial capability.

#### **1.14 EMPLOYMENT OF LOCAL LABOR**

Preference in employment on the Project shall, insofar as practical, be given to qualified local labor.

END OF SECTION

**SECTION 210**

**FEDERAL WORK AUTHORIZATION PROGRAM AFFIDAVITS**

**EACH BIDDER MUST PROVIDE THE OWNER WITH THE  
PROPERLY COMPLETED AND PROPERLY SIGNED FEDERAL  
WORK AUTHORIZATION PROGRAM AFFIDAVITS AS  
REQUIRED BY O.C.G.A. § 13-10-91**

**THIS FORM MUST BE COMPLETED BY ALL CONTRACTORS, ALL  
SUBCONTRACTORS AND ALL SUB-SUBCONTRACTORS**

**THE FORMS ARE ATTACHED HERETO.**



**Contractor Affidavit under O.C.G.A. § 13-10-91(b)(1)**

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of the Macon Water Authority has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
Federal Work Authorization User Identification Number

\_\_\_\_\_  
Date of Authorization

\_\_\_\_\_  
Name of Contractor

\_\_\_\_\_  
Name of Project

Name of Public Employer: the Macon Water Authority

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_, \_\_\_, 20\_\_\_ in \_\_\_\_\_ (city), \_\_\_\_\_ (state).

\_\_\_\_\_  
Signature of Authorized Officer or Agent

\_\_\_\_\_  
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME

ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires: \_\_\_\_\_, 20\_\_\_.

### Subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(3)

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with \_\_\_\_\_ [insert name of contractor] on behalf of the Macon Water Authority has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the subcontractor with the information required by O.C.G.A. § 13-10-91(b). Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five business days of receipt. If the undersigned subcontractor receives notice that a sub-subcontractor has received an affidavit from any other contracted sub-subcontractor, the undersigned subcontractor must forward, within five business days of receipt, a copy of the notice to the contractor. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
Federal Work Authorization User Identification Number

\_\_\_\_\_  
Date of Authorization

\_\_\_\_\_  
Name of Subcontractor

\_\_\_\_\_  
Name of Project

Name of Public Employer: Macon Water Authority

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_, \_\_\_, 20\_\_\_ in \_\_\_\_\_ (city), \_\_\_\_\_ (state).

\_\_\_\_\_  
Signature of Authorized Officer or Agent

\_\_\_\_\_  
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME

ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires: \_\_\_\_\_, 20\_\_\_\_\_.

### **Sub-subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(4)**

By executing this affidavit, the undersigned sub-subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract for \_\_\_\_\_ [insert name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract] and \_\_\_\_\_ [insert name of contractor] on behalf of the Macon Water Authority has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned sub-subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned sub-subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the sub-subcontractor with the information required by O.C.G.A. § 13-10-91(b). The undersigned sub-subcontractor shall submit, at the time of such contract, this affidavit to \_\_\_\_\_ [insert name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract]. Additionally, the undersigned sub-subcontractor will forward notice of the receipt of any affidavit from a sub-subcontractor to \_\_\_\_\_ [insert name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract]. Sub-subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
Federal Work Authorization User Identification Number

\_\_\_\_\_  
Date of Authorization

\_\_\_\_\_  
Name of Sub-subcontractor

\_\_\_\_\_  
Name of Project

\_\_\_\_\_  
Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_, \_\_\_, 20\_\_\_ in \_\_\_\_\_ (city), \_\_\_\_\_ (state).

\_\_\_\_\_  
Signature of Authorized Officer or Agent

\_\_\_\_\_  
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME  
ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires: \_\_\_\_\_, 20\_\_\_.

## SECTION 00300

**BID**

TO: MACON WATER AUTHORITY

FROM: \_\_\_\_\_  
(Bidder's Name)FOR: Water Main Relocation SR 87 / Riverside Drive at Arkwright Road – GDOT PI 0015692

Submitted: \_\_\_\_\_, 20\_\_

The undersigned Bidder, in compliance with your Invitation to Bid for the construction of this Project, having examined the Contract Documents and the site of the proposed Work, and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of materials and labor, hereby proposes to construct the Project in accordance with the Contract Documents.

The Bidder proposes and agrees, if this Bid is accepted, to contract with the Macon Water Authority, in the form of Contract Agreement specified, and to furnish all necessary products, machinery, tools, apparatus, means of transportation and labor necessary to complete the construction of the Work in full and complete accordance with the reasonably intended requirements of the Contract Documents to the full and entire satisfaction of the Macon Water Authority with a definite understanding that no money will be allowed for extra work except as set forth in the Contract Documents, for the following prices:

Item No.	Qty	Unit	Description	Unit Price	Total Price
<b>1</b>	<b>EROSION AND SEDIMENT CONTROL – FURNISH AND INSTALL</b>				
a.	20	EA.	Hay Bale Check Dam		
b.	1,200	L.F.	Type ‘S’ Silt Fence		
c.	1	L.S.	Temporary & Permanent Grassing Including Mulching		
<b>2</b>	<b>WATER MAIN INSTALLATION – PIPE FURNISHED BY MWA</b>				
a.	6	EA.	Connect to Existing Water Main		
b.	136	L.F.	Install 6-Inch Restrained Joint Ductile Iron Water Main		
c.	1,684	L.F.	Install 8-Inch Class 350 Ductile Iron Water Main		
d.	140	L.F.	Install 8-Inch Class 350 Restrained Joint Ductile Iron Water Main with Spacers in 16-Inch Steel Casing – Restrained Joint Gaskets Furnished by Contractor		
<b>3</b>	<b>FURNISH AND INSTALL DUCTILE IRON FITTINGS</b>				
	<b>Note:</b> Weight of fittings is based on manufacturers published weights. Weight does not include weights of accessory packs, gaskets, or restrained joint fittings.				
a.	1,710	LBS.	Ductile Iron M.J. Fittings		
<b>4</b>	<b>INSTALLATION OF VALVES &amp; BOXES - VALVES FURNISHED BY MWA</b>				
a.	5	EA.	Install 6” Gate Valve w/Box		
b.	7	EA.	Install 8” Gate Valve w/Box		
<b>5</b>	<b>FIRE HYDRANT INSTALLATION – FIRE HYDRANTS FURNISHED BY MWA</b>				
a.	2	EA.	Install City of Macon Standard Fire Hydrant with Necessary Extensions to Grade		
<b>6</b>	<b>FURNISH AND INSTALL JACK &amp; BORE CASINGS</b>				
a.	140	L.F.	Furnish and Install by Jack & Bore Method 16” Steel Casing (0.250 WT.) for New Water Line Installation		
<b>7</b>	<b>FURNISH AND INSTALL LINK SEAL CASING CLOSURES</b>				
a.	2	EA.	Furnish & Install One Set of Two Link Seal Casing Enclosures for 8-Inch Water Line in 16-Inch Steel Casing		
<b>8</b>	<b>WATER MAIN ABANDONMENT</b>				
a.	16	C.Y.	Furnish and Install Flowable Fill		
b.	150	L.F.	Remove Water Main – All Sizes		

<b>9</b>	<b>AS-BUILT SURVEY</b>				
a.	1	L.S.	Furnish As-Built Survey of Completed Water Line		
<b>10</b>	<b>TESTING / DISINFECTION</b>				
a.	1	L.S..	Hydrostatic Testing and Disinfection		
<b>11</b>	<b>PAVEMENT REPLACEMENT – AS DIRECTED BY MWA</b>				
a.	10	S.Y.	Gravel Driveway Remove and Replace		
b.	10	S.Y.	Asphalt Driveway Remove and Replace		
c.	10	S.Y.	Concrete Driveway Remove and Replace		
d.	10	S.Y.	Class A Pavement Remove and Replace		
<b>12</b>	<b>WATER SERVICE</b>				
a.	20	L.F.	Furnish and Install 1” Water Service Line		
b.	1	EA.	Water Service Connection – Short Side		
<b>13</b>	<b>TRAFFIC CONTROL</b>				
a.	1	L.S.	Traffic Control		
	<b>****ADDITIONAL WORK IF ORDERED BY THE ENGINEER****</b>				
<b>14</b>	<b>ALLOWANCES</b>				
a.	1	LS	Owner Allowance / Contingency	\$20,000.00	\$20,000.00

Total Bid for Items 1 through 14, inclusive, Additional Work, and Allowances, in the amount of \_\_\_\_\_ Dollars

\$ \_\_\_\_\_ ) which sum hereinafter is called the ‘Base Bid’.

The Bidder agrees hereby to commence Work under this Contract, with adequate personnel and equipment, on a date to be specified in a written order of the Engineer, and to fully complete all Work under this Contract within Ninety ( 90 ) consecutive calendar days from and including said date specified in the written order of the Engineer. Bidder further agrees to pay as liquidated damages, the sum of \$250.00 for each calendar day thereafter required to achieve substantial completion of all Work.

The Bidder declares an understanding that the quantities shown for unit price items are subject to either increase or decrease, and that should the quantities of any of the items of Work be increased, the Bidder proposes to do the additional Work at the unit prices stated herein; and should the quantities be decreased, the Bidder also understands that payment will be made on the basis of actual quantities at the unit price bid and will make no claim for additional costs or anticipated profits for any decrease in quantities; and that actual quantities will be determined upon completion of Work, at which time adjustment will be made to the Contract Price by direct increase or decrease.

In case of discrepancies between the figures shown in the unit prices and the totals, the unit prices shall apply and the totals shall be corrected to agree with the unit prices. In case of discrepancies between

written amounts and figures, written amounts shall take precedence over figures and the sum of all Bid extensions (of unit prices) plus lump sum items shall take precedence over the Bidder's represented BID TOTAL.

The Bidder furthermore agrees that, in the case of a failure to execute the Contract Agreement and Bonds within ten days after receipt of conformed Contract Documents for execution, the attached Bid Bond accompanying this Bid and the monies payable thereon shall be paid into the funds of the Macon Water Authority as liquidated damages for such failure.

Attached hereto is a Bid Bond for the sum of \_\_\_\_\_

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_) according to the conditions of "Instructions to Bidders" and provisions thereof.

Bidder acknowledges receipt of the Following Addenda:

Addendum No. 1, dated: \_\_\_\_\_

Addendum No. 2, dated: \_\_\_\_\_

Addendum No. 3, dated: \_\_\_\_\_

Addendum No. 4, dated: \_\_\_\_\_

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[Signatures, attestations, and seal on following page]

**BIDDER:** \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_  
(Print or Type)

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_

Attest: \_\_\_\_\_

Name: \_\_\_\_\_  
(Print or Type)

Title: \_\_\_\_\_

(SEAL)

Note: Attest for a corporation must be by the secretary of record for the corporation, as reflected in the records of the Georgia Secretary of State; for a partnership by another partner; for an individual by a notary.

Note: If the Bidder is a corporation, the Bid shall be signed by an officer of the corporation; if a partnership, it shall be signed by a partner. If signed by others, authority for signature shall be attached.

The full names and addresses of persons or parties interested in the foregoing Bid, as principals, are as follows:

<u>Name</u>	<u>Address</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____



END OF SECTION

## SECTION 00410

**BID BOND**

STATE OF GEORGIA

COUNTY OF MACON-BIBB

KNOW ALL MEN BY THESE PRESENTS, that we, \_\_\_\_\_, as Principal, and \_\_\_\_\_, as Surety, are held and firmly bound unto the Owner, the Macon Water Authority, in the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, personal representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted to the Owner a Bid for the Water Main Relocation SR 87 / Riverside Drive at Arkwright Road – GDOT PI 0015692.

NOW THEREFORE, the conditions of this obligation are such that if the Bid be accepted, the Principal shall, within ten days after receipt of conformed Contract Documents, execute a Contract in accordance with the Bid upon the terms, conditions and prices set forth therein, and in the form and manner required by the Contract Documents and execute sufficient and satisfactory separate Performance and Payment Bonds payable to the Owner, each in an amount of 100 percent of the total Contract Price, in form satisfactory to the Owner, then this obligation shall be void; otherwise, it shall be and remain in full force and effect in law; and the Surety shall, upon failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to the aforesaid Owner, upon demand, the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

This bond is given pursuant to and in accordance with the provisions of the Georgia Local Government Public Works Construction Law, O.C.G.A. § 36-91-1 et. seq., and all the provisions of the law referring to this character of bond as set forth in said Sections or as may be hereinafter enacted and these are hereby made a part hereof to the same extent as if set out herein in full.

*Remainder of Page Left Blank*  
*[Signatures, attestations, and seals on following page]*

IN WITNESS WHEREOF, the said Principal has hereunder affixed its signature and seal, and said Surety has hereunto caused to be affixed its corporate signature and seal, by its duly authorized officers, on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

**CONTRACTOR - PRINCIPAL:** \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

(Print or Type)

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Attest: \_\_\_\_\_

Name: \_\_\_\_\_

(Print or Type)

Title: \_\_\_\_\_

(SEAL)

Note: Attest for a corporation must be by the secretary of record for the corporation, as reflected in the records of the Georgia Secretary of State; for a partnership by another partner; for an individual by a notary.

**SURETY:** \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

(Print or Type)

Title: \_\_\_\_\_

Phone: \_\_\_\_\_

Attest: \_\_\_\_\_

Name: \_\_\_\_\_

(Print or Type)

Title: \_\_\_\_\_

(SEAL)

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

END OF SECTION

## SECTION 00420

**STATEMENT OF BIDDER'S QUALIFICATIONS**

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information desired. Attach all additional sheets to this statement.

1. Name of Bidder:\_\_\_\_\_
2. Permanent main office address:\_\_\_\_\_
3. When organized:\_\_\_\_\_
4. If a Corporation, where incorporated:\_\_\_\_\_
5. How many years have you been engaged in the contracting business under your present firm or trade name?\_\_\_\_\_
6. Contracts on hand: (Schedule these, showing amount of each contract and the appropriate anticipated dates of completion):\_\_\_\_\_
7. General description of type of work performed by your company:\_\_\_\_\_  
\_\_\_\_\_
8. Have you ever failed to complete any work awarded to you? If so, where and why?  
\_\_\_\_\_
9. Have you ever defaulted on a contract? If so, where and why?  
\_\_\_\_\_
10. Attach a list of the most important projects recently completed by your company which are similar in scope to this Project. For each project, list its: official name and owner, a contact person's name, company and position, address and phone number; completion date; and contract amount.
11. Names, background and experience of the principal members of your organization, including officers:\_\_\_\_\_  
\_\_\_\_\_
12. The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the Owner in verification of the recitals comprising this Statement of Bidder's Qualifications.

Statement of Bidder's Qualifications

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Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

BIDDER: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

State of \_\_\_\_\_

County of \_\_\_\_\_

\_\_\_\_\_ being duly sworn deposes and says that he or she is  
\_\_\_\_\_ of \_\_\_\_\_ and that the answers to the foregoing  
questions and all statements therein contained are true and correct. Subscribed and sworn to before  
me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Notary Public: \_\_\_\_\_

(SEAL)

My Commission Expires: \_\_\_\_\_  
(Date)

END OF SECTION

**SECTION 00421****STATEMENT OF EQUIPMENT**

Show machinery and other equipment available to the Bidder for prosecuting the Work required by the Contract Documents. (To be filled in by Bidder and submitted with Bid.)

Available Machinery and Other Equipment			Date Proposed To Be Placed On Work
Kind - Size - Capacity	Location	Ownership	

The above is a true statement of the equipment available to the undersigned Bidder for prosecuting the Work required by the Contract Documents. Where it is shown that the equipment is not owned by the Bidder, arrangements have been made with the owners to furnish the equipment.

Signed:\_\_\_\_\_

Name:\_\_\_\_\_

Title:\_\_\_\_\_

END OF SECTION

**CORPORATE CERTIFICATE**

I, \_\_\_\_\_, certify that I am the Secretary of the Corporation named as Bidder in the foregoing Bid; that \_\_\_\_\_, who signed said Bid on behalf of the Bidder was then \_\_\_\_\_ of said Corporation; that said Bid was duly signed for and on behalf of said Corporation by authority of its Board of Directors, and is within the scope of its corporate powers; that said Corporation is organized under the laws of the State of \_\_\_\_\_.

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

(Corporate Secretary) \_\_\_\_\_

(SEAL)



END OF SECTION

## SECTION 00423

**STATEMENT OF DISADVANTAGED FIRM UTILIZATION**

The Bidder shall list all disadvantaged firms, as are defined in the Instructions to Bidders, providing subcontracting services, furnishing products or materials, etc., to be utilized in the performance of the work. This list shall be submitted in the following format:

Subcontractor (Name & Address)	Nature of Work to be Contracted	Group (Local, DBE)	Anticipated Cost of Services (\$ Value, %)
			\$
			%
			\$
			%
			\$
			%
			\$
			%
			\$
			%
			\$
			%
			\$
			%
			\$
			%
			\$
			%

**NOTE:** Any proposed changes from the above list shall be submitted in writing to the Macon Water Authority prior to initiation of the action, with the reason for the proposed deviation.

END OF SECTION

## SECTION 00425

**CONTRACTOR'S LICENSE CERTIFICATION**

Contractor's Name: \_\_\_\_\_

Georgia Contractor's License Number: \_\_\_\_\_

Expiration Date of License: \_\_\_\_\_

I certify that the above information is true and correct and that the classification noted is applicable to the Bid for this Project.

Signed: \_\_\_\_\_

Printed: \_\_\_\_\_

Date: \_\_\_\_\_

END OF SECTION

**CONTRACTOR'S CERTIFICATION OF AUTHORITY**  
(IF OUT OF STATE CONTRACTOR)

Contractor's Name: \_\_\_\_\_

Georgia Certificate of Authority Number: \_\_\_\_\_

Expiration Date of Certificate: \_\_\_\_\_

I certify that the above information is true and correct and that the classification noted is applicable to the Bid for this Project.

Signed: \_\_\_\_\_

Printed: \_\_\_\_\_

Date: \_\_\_\_\_

END OF SECTION

## SECTION 00480

**NON-COLLUSION AFFIDAVIT OF PRIME BIDDER**

STATE OF GEORGIA

COUNTY OF \_\_\_\_\_

\_\_\_\_\_, being first duly sworn, deposes and says that:

He or she is \_\_\_\_\_

(Owner, Partner, Officer, Representative or Agent)

of \_\_\_\_\_, the Bidder that has submitted the attached Bid;

He or she is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

Such Bid is genuine and is not a collusive or sham Bid;

Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this Affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Owner, the Macon Water Authority, or any person interested in the proposed Contract; and

The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this Affiant.

(Signed) \_\_\_\_\_

(Title) \_\_\_\_\_

Subscribed and Sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

My Commission Expires: \_\_\_\_\_

(Notary Public)

(SEAL)

Note: If the Bidder is a partnership, all of the partners and any officer, agent or other person who may have represented or acted for the partnership shall also make the foregoing oath. If the Bidder is a corporation, all officers, agents, or other persons who may have acted for or represented the corporation shall also make the oath.



END OF SECTION

SECTION 00500

**CONTRACT AGREEMENT**

AGREEMENT BETWEEN CONTRACTOR AND OWNER

THIS AGREEMENT is made and entered into on the \_\_\_ day of \_\_\_\_\_ in the year Two Thousand and \_\_\_\_\_ (20\_\_\_\_) by and between \_\_\_\_\_, hereinafter referred to as the “Contractor”, and THE MACON WATER AUTHORITY, hereinafter (the “Owner”) (collectively, “the Parties”).

WITNESSETH, that the Contractor and the Owner, for the consideration hereinafter named, agree as follows:

1. **SCOPE OF WORK.** - That the Contractor will furnish all products, tools, construction equipment, materials, skill and labor of every description necessary to carry out and to complete in a good, firm, substantial workmanlike manner perform the Water Main Relocation SR 87 / Riverside Drive at Arkwright Road – GDOT PI 0015692 project and will complete the Work in strict conformity with the Drawings and the Specifications (Divisions 01 through 46, inclusive, together with the foregoing Bid made by the Contractor, the Invitation to Bid, Instructions to Bidders, General and Supplementary Conditions, Special Conditions, Performance and Payment Bonds and all Addenda hereto incorporated (if applicable) which form essential parts of this Contract Agreement, as if fully contained herein, the same collectively referred to as the “Contract Documents.”

2. **TIME OF COMPLETION.**-The Contractor shall commence the Work to be performed under this Contract Agreement on a date to be specified in a written Notice to Proceed and shall achieve substantial completion of all Work required by the Contract Documents within ninety (90) consecutive calendar days (the “Contract Time”). Time is of the essence and is an essential element of this Contract, and the Contractor shall pay to the Owner, not as a penalty, but as liquidated damages, the sum of Two Hundred Fifty Dollars (\$250.00) for each calendar day for which there is an unexcused delay in achieving substantial completion of the Work within the time limit set forth herein. These liquidated damages are not established as a penalty but are calculated and agreed upon in advance by the Owner and the Contractor due to the uncertainty and impossibility of making a determination as to the actual and consequential damages incurred by the Owner and the general public of Macon-Bibb County, Georgia as a result of the failure on the part of the Contractor to complete the Work on time. Such liquidated damages referred to herein are intended to be and are cumulative and shall be in addition to every other remedy now or hereafter enforceable at law, in equity, by statute, or under the Contract Documents.

3. **THE CONTRACT PRICE.**-The Owner shall pay to the Contractor for the faithful performance of the Contract Agreement, subject to additions and deductions as provided for in the Contract Documents, in current funds a sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ .00) (the “Contract Price”) which sum shall also pay for loss or damage arising out of the nature of the Work aforesaid, or from the action of the elements, or from unforeseen obstructions or difficulties encountered in the prosecution of the Work, and for all expenses incurred by, or in consequence of the Work, its suspension or discontinuance and for well and faithfully completing the Work and the whole thereof, as herein provided, and for replacing

defective Work or products for a period of one year after completion.

4. **PROGRESS PAYMENTS** The Owner shall make progress payments on account of the Contract Price as follows: On or about the 20th day of each month, ninety-five percent (95%) of the value, based on the contract prices, of labor and materials incorporated in the Work and of materials suitably stored at the site thereof up to the twenty-fifth day of the month preceding, as estimated by the Engineer, less the aggregate of previous payments. Application for Payment must be made on the standard Owner's form to be provided by the Owner to the Contractor. No form of collateral in lieu of cash will be acceptable as retainage. At the discretion of the Owner, the retainage of each Subcontractor may be released separately as each Subcontractor completes its work. An application for release of a Subcontractor's retainage shall bear the certificates of the Subcontractor, the Contractor, and the Engineer that the Subcontractor's work has been fully performed and that the sum for which payment is requested is due by the Contractor to the Subcontractor. Checks releasing a Subcontractor's retainage shall be made payable to the Contractor, the Contractor's surety, and the Subcontractor, and shall be mailed to the Contractor's surety. This Article does not create any contractual relationship between the Owner and the Subcontractor or any duty of the Owner to any Subcontractor. Payments pursuant to this Article shall in no way diminish, change, alter or affect the rights of the Owner under the Contract Documents.

5. **FINAL PAYMENT.**-(a)-Final payment including retainage, shall be due 30 days after the date of notice from the Owner of the final acceptance of the Work, provided that all other requirements of the Contract Documents shall have been met in full. Final payment shall be made by a check payable jointly to the Contractor and surety and shall be mailed to the surety.

(b)-Upon receipt of written notice from the Contractor pursuant to Article 30 of the General Conditions that the Work is ready for final inspection, the Engineer shall promptly make such inspection, and when he/she finds the Work complies with the Contract Documents, and when the Contract shall have been fully performed the Engineer shall promptly issue a final certificate of recommendation to the Owner, over the Engineer's signature, stating that the Work required by the Contract Documents has been completed under the terms and conditions thereof, and that the entire balance of the Contract Price found to be due to the Contractor and noted in said final certificate, is due and payable.

(c)-Before issuance of a final certificate of recommendation, the Contractor shall submit evidence satisfactory to the Engineer that all payrolls, material bills, and all other indebtedness in connection with the Work has been paid in full.

(d)-If full completion of the Work is materially delayed through no fault of the Contractor, and the Engineer so certifies same, the Owner shall, upon certificate of the Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed. Such payment shall be made under the terms and conditions of the General Conditions governing final payment, except that it shall not constitute a waiver of claims.

6. **NO ASSIGNMENT.**- This Contract and the proceeds of this Contract may not be assigned nor may the performance thereunder be assigned, except with the prior written consent of the Owner.

7. BONDS. – The Contractor shall furnish both a performance bond and a payment bond and shall pay the premium thereon. The performance bond shall guarantee the full performance of the Contract.

Remainder of Page Left Blank

*[Signatures, attestations, and seals on following page]*



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

Signed, sealed, and delivered  
in the presence of:

**THE MACON WATER AUTHORITY**

1. \_\_\_\_\_

By: \_\_\_\_\_  
Gary Bechtel, Chairman

2. \_\_\_\_\_

Attest: \_\_\_\_\_  
Ron Shipman, Interim Executive Director & President

(Official Seal)

Signed, sealed, and delivered  
in the presence of:

CONTRACTOR: \_\_\_\_\_

1. \_\_\_\_\_

By: (Signed) \_\_\_\_\_

2. \_\_\_\_\_

(Printed) \_\_\_\_\_

Attest: (Signed) \_\_\_\_\_

(Printed) \_\_\_\_\_

(Secretary)

(Corporate Seal)

APPROVED AS TO FORM

\_\_\_\_\_

\_\_\_\_\_  
(Printed Name)  
Attorney for the Macon Water Authority

**END OF SECTION**

**SECTION 00550****PRE-AWARD OATH**

STATE OF GEORGIA  
COUNTY OF \_\_\_\_\_

In accordance with O.C.G.A. 36-91-21(e), we, the undersigned of \_\_\_\_\_

being first duly sworn, depose and say that:

We have not directly or indirectly violated O.C.G.A. 36-91-21(d), and more specifically, we have not

- prevented or attempted to prevent competition in such bidding or proposals by any means whatever,
- prevented or endeavored to prevent anyone from making a bid or proposal thereof by any means whatever, nor
- caused or induced another to withdraw a bid or proposal for the work.

We, the undersigned, to the best of our knowledge, affirm that no other officers, agents or other persons acted for or represented the Contractor in the bidding for and procurement of this Contract.

Signature	Printed Name	Title	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

\_\_\_\_\_  
(Notary Public) My Commission Expires: \_\_\_\_\_

(SEAL)



END OF SECTION

## SECTION 00600

**PERFORMANCE BOND**

Bond No. \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS:

That

\_\_\_\_\_  
(Legal title and address of the Contractor)

as Principal (hereinafter referred to as "Contractor"), and \_\_\_\_\_

\_\_\_\_\_  
(Legal title and address of Surety)

as Surety (hereinafter referred to as "Surety"), do hereby acknowledge ourselves indebted and firmly bound and held unto the Macon Water Authority (the "Owner") in the amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ .00) to which payment Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bound Principal has entered into a Contract with Owner bearing date of \_\_\_\_\_ for construction of Water Main Relocation SR 87 / Riverside Drive at Arkwright Road – GDOT PI 0015692 Project in accordance with Contract Documents prepared by Owner all of which said Contract Documents are incorporated herein by reference and made a part hereof, and are hereinafter collectively referred to as the "Contract."

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Contractor shall promptly and faithfully perform and comply with the terms and conditions of said Contract; and shall indemnify and save harmless the Owner against and from all costs, expenses, damages, injury or loss to which said Owner may be subjected by reason of any wrongdoing, including patent infringement, misconduct, want of care or skill, default or failure of performance on the part of said Principal, his agents, subcontractors or employees, in the execution or performance of said Contract, and shall fully reimburse and repay the said Owner any and all outlay, costs, and expense which it may incur in making good any such default and shall guarantee all products and workmanship against defects, as provided in the Contract Documents which comprise and constitute the Contract, for a period of one year and shall replace all defective work and products for such period of one year then this obligation shall be null and void; otherwise it shall remain in full force and effect.

1. The said Surety to this bond, for value received, hereby stipulates and agrees that no change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the Contract or to the Work to be performed thereunder, or the specifications or drawings accompanying same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the

Contract or to the Work or to the specifications or drawings.

2. It is expressly agreed that this bond shall be amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the Contract Price more than 20 percent in excess of the original Contract Price, so as to bind the Principal and Surety to the full and faithful performance of the Contract as so amended. The term "amendment" shall include any alteration, addition, extension, or modification of any character whatsoever.
3. If pursuant to the Contract Documents the Contractor shall be declared in default by the Owner under the aforesaid Contract, the Owner shall take possession of the Project and finish the Work by whatever method the Owner may deem expedient, in accordance with Article 7 of the General Conditions.
4. Supplementary to and in addition to the foregoing, whenever the Owner shall notify the Surety that the Owner has notice that the Contractor has failed to pay any subcontractor, materialman, or laborer for labor or materials certified by the Contractor as having been paid for by the Contractor, the Surety shall, within thirty (30) days of receipt of such notice, cause to be paid any unpaid amount for such labor or materials.
5. It is expressly agreed by the Principal and the Surety that the Owner, if it desires to do so, is at liberty to make inquiries at any time of subcontractors, laborers, materialmen, or other parties concerning the status of payments for labor, materials, or services furnished in the prosecution of the work.
6. The Surety agrees that other than as is provided in this bond it may not demand of the Owner that the Owner shall (a) perform any thing or act, (b) give any notice, (c) furnish any clerical assistance, (d) render any service, (e) furnish any papers or documents, or (f) take any action of any nature or description which is not required of the Owner to be done under the Contract Documents.
7. No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner named herein or the legal successors of the Owner.

This bond is given pursuant to and in accordance with the provisions of Title 36, Chapter 91 of the Official Code of Georgia Annotated, as may be amended or modified from time to time, and all the provisions of the law referring to this character of bond as set forth in said sections or as may be hereafter enacted or amended and these are hereby made a part hereof to the same extent as if set out in full herein.

*Remainder of Page Left Blank*

*[Signatures, attestations, and seals on following Page]*

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Signed, sealed and delivered  
in the presence of:

\_\_\_\_\_  
(Insert Name of Contractor)

1. \_\_\_\_\_

By: (Signed)\_\_\_\_\_

(Printed)\_\_\_\_\_

2. \_\_\_\_\_

Attest :( Signed) \_\_\_\_\_

(Printed)\_\_\_\_\_

(CORPORATE SEAL)

Signed, sealed and delivered  
in the presence of:

\_\_\_\_\_  
(Insert Name of Surety)

1. \_\_\_\_\_

By: (Signed)\_\_\_\_\_

(Printed)\_\_\_\_\_

2. \_\_\_\_\_

Attest :( Signed) \_\_\_\_\_

(Printed)\_\_\_\_\_

(CORPORATE SEAL)

APPROVED AS TO FORM:

\_\_\_\_\_

\_\_\_\_\_  
(Printed Name)

Attorney for the Macon Water Authority

**END OF SECTION**

PLACE SURETY FOR PERFORMANCE BOND HERE



**SECTION 00610****PAYMENT BOND**

Bond No. \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS:

That

\_\_\_\_\_  
(Legal title and address of the Contractor)

as Principal (hereinafter referred to as "Contractor"), and \_\_\_\_\_

\_\_\_\_\_  
(Legal title and address of Surety)

as Surety (hereinafter referred to as "Surety"), do hereby acknowledge ourselves indebted and firmly bound and held unto the Macon Water Authority (the "Owner"), in the amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ .00) to which payment Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bounden Principal has entered into a Contract with Owner bearing date of \_\_\_\_\_ for construction of Water Main Relocation SR 87 / Riverside Drive at Arkwright Road – GDOT PI 0015692 Project in accordance with the Contract Documents prepared by Owner, all of which said Contract Documents are incorporated herein by reference and made a part hereof, and are hereinafter collectively referred to as the "Contract."

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Contractor shall promptly make payment to all claimants as hereinafter defined for all labor and material supplied in the prosecution of the work provided for in said Contract Documents, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. The said Surety to this bond, for value received, hereby stipulates and agrees that no change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the Contract or to the Work to be performed thereunder, or the specifications or drawings accompanying same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the Contract or to the work or to the specifications or drawings.
2. It is expressly agreed that this bond shall be amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract Documents not increasing the Contract Price more than 20 percent in excess of the original Contract Price, so as to bind the Contractor and Surety to the full and faithful performance of the Contract as so amended. The term "amendment" shall include any alteration, addition, extension, or modification of any character whatsoever.

3. A Claimant is defined as any subcontractor and any person supplying labor, materials,



machinery, or equipment in the prosecution of the Work provided for in said Contract.

4. Every person or entity entitled to the protection hereunder and that has not been paid in full for labor or materials furnished in the prosecution of the Work referred to in said bond before the expiration of a period of ninety days after the day on which the last of the labor was done or performed by them, or materials or equipment or machinery was furnished or supplied by them for which such claim is made, or when they have completed its subcontract for which claim is made, shall have the right to sue on such payment bond for the amount, or the balance thereof, unpaid at the time of the commencement of such action and to prosecute such action to final execution and judgment for the sum or sums due them; provided, however, that any person or entity having direct contractual relationship with a subcontractor, but no contractual relationship, express or implied, with the Contractor, shall have the right of action upon this bond upon giving written notice to said Contractor within ninety days from the day on which such person or entity did or performed the last of the labor, or furnished the last of the materials or machinery or equipment for which such claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished or supplied or for whom the labor was performed or done; provided further that nothing contained herein shall limit the right of action to said 90-day period. Notice may be served by depositing a notice, registered mail, postage prepaid, duly addressed to the Contractor at any place the Contractor maintains an office or conducts business, including any post office or branch post office or any letter box under the control of the United States Postal Service, or notice may be served in any manner in which the sheriffs of Georgia are authorized by law to serve summons or process.
5. Every suit instituted under this section shall be brought in the name of the claimant without the Owner being made a party thereto. The official who has the custody of said bond is authorized and directed to furnish, to any person or entity making application therefor who submits an affidavit that it has supplied labor or material for such work and payment therefor has not been made, or that it is being sued on any such bond, a copy of such bond and the Contract for which it was given, certified by the official who has custody of said bond; this copy shall be primary evidence of this bond and Contract and shall be admitted as evidence without further proof. Applicants shall pay for such certified copies and such certified statements such as fees as the official fixes to cover the cost of preparation thereof, but in no case shall the fee exceed the fees which the clerks of the superior courts are permitted to charge for similar copies.
6. No action can be instituted on this bond after one year from the date of the final acceptance of the Owner.

This bond is given pursuant to and in accordance with the provisions of Title 36, Chapter 91 of the Official Code of Georgia Annotated, as may be amended or modified from time to time, and all the provisions of the law referring to this character of bond as set forth in said sections or as may be hereafter enacted or amended and these are hereby made a part hereof to the same extent as if set out in full herein.

*[Signatures, attestations, and seals on following Page]*

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

Signed, sealed and delivered  
in the presence of:

\_\_\_\_\_  
(Insert Name of Contractor)

1. \_\_\_\_\_

By: (Signed)\_\_\_\_\_

(Printed)\_\_\_\_\_

2. \_\_\_\_\_

Attest :( Signed) \_\_\_\_\_

(Printed)\_\_\_\_\_

(CORPORATE SEAL)

Signed, sealed and delivered  
in the presence of:

\_\_\_\_\_  
(Insert Name of Surety)

1. \_\_\_\_\_

By: (Signed)\_\_\_\_\_

(Printed)\_\_\_\_\_

2. \_\_\_\_\_

Attest :( Signed) \_\_\_\_\_

(Printed)\_\_\_\_\_

(CORPORATE SEAL)

APPROVED AS TO FORM:

\_\_\_\_\_

\_\_\_\_\_

(Printed Name)

Attorney for the Macon Water Authority

**END OF SECTION**

PLACE SURETY FOR PAYMENT BOND HERE



## SECTION 00700

### GENERAL CONDITIONS

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**Article 1. - Notice of Award of Contract.** Within sixty (60) days after receipt of Bids, the Owner will notify the successful Bidder of the award of the Contract. Should the Owner require additional time to award a Contract, the time may be extended by the mutual agreement between the Owner and the successful Bidder. If an award of Contract has not been made within 60 days from the Bid date or within the extension mutually agreed upon, the Bidder may withdraw the Bid without further liability on the part of either party.

**Article 2. - Execution of Contract Documents.** (a) *Time Limits.*—Within fifteen (15) days of notification of Award of Contract, the Owner will furnish the Contractor with conformed copies of Contract Documents for execution by the Contractor and the surety. The Contractor and its surety must execute the bond forms contained in the conformed Contract Documents without any changes. Within ten (10) days after receipt, the Contractor shall return all the Contract Documents properly executed by the Contractor and the surety. Attached to each set of Contract Documents shall be original powers-of-attorney for the person executing the Bonds for the surety and certificates, endorsements, and declarations of insurance for the required insurance coverages, all as required by Article 3 and Article 4. Within thirty (30) days after receipt of the conformed Contract Documents properly completed and executed by the Contractor and the surety together with the power-of-attorney, and the proper certificates, endorsements and declarations of insurance, the Owner will complete the execution of the Contract Documents. Distribution of the completed Documents will be made upon execution by the Owner.

(b) *Failure of Contractor or Surety to Execute Documents.*—Should the Contractor or the surety fail to properly execute the Documents within the specified time the Owner will have the right to proceed on the Bid Bond accompanying the Bid.

(c) *Failure of Owner to Execute Documents.*—If the Owner fails to execute the Documents within the time limit specified, the Contractor will have the right to withdraw the Bid without penalty. In such event the Owner will have no liability to the Contractor under these Documents or otherwise.

(d) *Extensions of Time.*—Should either party require an extension of any of the time limits stated above, this shall be done only by mutual agreement between both parties.

(e) *Changes to Documents.*-- Insertion, addition, alteration, modification, revision, or deletion of any text, verbiage, provision, statement, term, condition, or other component of the Contract Documents, whether textual, numerical, or pictorial, is prohibited and no such unilateral change to the Contract Documents shall be binding. In the event the Owner discovers any attempt by the Contractor to modify the Contract Documents by insertion, addition, alteration, revision, or deletion of any text, verbiage, provision, statement, term, condition, or other portion of the Contract Documents without the written assent and approval of the Owner, the Owner shall have grounds to withdraw the contract award, terminate all proceedings related to contractual relationship with the Contractor for the subject Project, and to award the contract to the next bidder which met the requirements of the invitation to bid.

**Article 3. - Contract Security.**—The Contractor shall furnish separate Performance and Payment Bonds each in a sum equal to the amount of the Contract Price on the Owner’s forms. Such Bonds shall be executed by the Contractor and a bonding company licensed to transact such business in Georgia and named on the current list of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds” as published in the Treasury Department Circular Number 570. The expense of these Bonds shall be borne by the Contractor.

If at any time a surety on any such Bond is declared bankrupt, becomes insolvent, loses its right to do business in Georgia or is removed from the list of Surety Companies accepted on Federal Bonds, the Contractor shall, within ten (10) days after notice from the Owner to do so, substitute acceptable Bonds in such form and sum and signed by such other surety as may be satisfactory to the Owner. The premium on such substitute Bonds shall be paid by the Contractor. No further progress payments shall be deemed due, nor shall any be made, until the new surety furnishes acceptable Bonds to the Owner. The person executing the substitute Bonds on behalf of the surety shall submit with the Bonds valid powers-of-attorney certified to by an official of said surety company.

**Article 4. - Insurance**—Proof of insurance coverage and furnishing of insurance policies acceptable to the Owner shall be as set forth in this Article.

(a) *Policies, Certificates, Limits and Disposition of Documents.*—The Contractor shall obtain at his expense insurance with limits as shown hereinbelow, unless the Contractor desires to broaden the limits and obtain more protection. The Contractor shall provide the Owner with all insurance documentation and evidence of insurance as required herein, and updated certificates of all insurance required herein must be provided to the Owner at least quarterly until Final Payment.

(1) **WORKER'S COMPENSATION AND EMPLOYER’S LIABILITY INSURANCE.**—The Contractor shall procure and maintain Worker's Compensation and Employers Liability Insurance for all of his employees to be engaged in Work on the project under this contract, and in case any such Work is sublet, the Contractor shall require the Subcontractor similarly to provide Worker's Compensation and Employer’s Liability Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's insurance. Worker's Compensation insurance policies shall include GEORGIA under Section 3A and shall include Other States coverage and Voluntary Compensation.

Worker’s Compensation Limits:	Statutory
Employers Liability Limits:	
Each Accident	\$1,000,000
Disease - Policy Limit	\$1,000,000
Disease - Each Employee	\$1,000,000

Contractor waives all rights against Owner and its agents, officers, directors, and employees for recovery of damages to the extent these damages are covered by the worker’s compensation and employer’s liability or commercial umbrella liability insurance obtained by Contractor pursuant to Article 4 of this agreement. The Waiver of Our right To Recover From Others Endorsement, ISO



Form SC 00 03 13 shall be attached to the policy showing the Owner listed in the Schedule.

*Disposition:* Certificate(s) of insurance showing the required coverage and copy of declaration page must be returned to the Owner with properly executed Contract Documents. If requested by the Owner, Contractor shall also provide a certified copy of the policy(ies) required by Article 4(a)(1).

(2) **COMMERCIAL GENERAL AND UMBRELLA LIABILITY INSURANCE.**—The Contractor shall procure and shall maintain commercial general liability (CGL) and if necessary, commercial umbrella insurance with a limit of not less than \$2,000,000 each occurrence, as shall protect him and any Subcontractor performing Work covered by this Contract from claims for damages for bodily injury, including accidental death, as well as from claims for property damages, which may arise from operations under the Contract Agreement, whether such operations are by himself or by any Subcontractor or by anyone directly or indirectly employed by either of them.

CGL insurance shall be written on ISO occurrence form CG 00 01 10 93 (or substitute form providing equivalent coverage) and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract). If such CGL insurance contains a general aggregate limit, it shall apply separately to this project. Each policy shall be indorsed with ISO Form CG 25 03 11 85 or equivalent form with wording satisfactory to Owner.

The Owner shall be included as an additional insured under the CGL, using ISO additional insured endorsement CG 20 33 or a substitute providing equivalent coverage, and under the commercial umbrella, if any. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded to the Owner.

There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from explosion, collapse, or underground property damage.

Contractor waives all rights against the Owner and its agents, officers, directors, and employees for recovery of damages to the extent these damages are covered by commercial general liability or commercial umbrella liability insurance maintained pursuant to Article 4 of this agreement.

*Disposition:* Certificate(s) of insurance showing the required coverage and copy of declaration page must be returned to the Owner with properly executed Contract Documents. If requested by the Owner, Contractor shall also provide a certified copy of the policy(ies) required by Article 4(a)(2).

(3) **BUSINESS AUTO AND UMBRELLA LIABILITY INSURANCE.**—The Contractor shall procure and shall maintain business automobile liability, and if necessary, commercial umbrella liability insurance with a limit of not less than \$2,000,000 each occurrence.

Such insurance shall cover liability arising out of any auto (including owned, hired, and non-owned autos).

Business auto coverage shall be written on ISO form CA 00 01, CA 00 05, CA 00 12, CA 00 20 or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage equivalent to that provided in the 1990 and later editions of ISO form CA 00 01. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance programs afforded to the Owner.

Contractor waives all rights against the Owner and its agents, officers, directors, and employees for recovery of damages to the extent these damages are covered by the business auto liability or commercial umbrella liability insurance obtained by Contractor pursuant to Article 4 of this agreement or under any applicable auto coverage.

*Disposition:* Certificate(s) of insurance showing the required coverage and copy of declaration page must be returned to the Owner with properly executed Contract Documents. If requested by the Owner, Contractor shall also provide a certified copy of the policy(ies) required by Article 4(a)(2).

*Cross-Liability Coverage.*—If Contractor’s liability policies do not provide the standard ISO separation of insureds provision, or a substantially similar clause, they shall be endorsed to provide cross-liability coverage.

(3) By proper endorsement, the policy must name

MACON WATER AUTHORITY  
790 Second Street  
P. O. Box 108  
Macon, GA 31202

as an additional insured and shall provide for not less than thirty (30) days prior written notice before cancellation or any material change in the policy, except for non-payment of premium which shall require ten (10) days prior written notice of cancellation, to the Owner.

(4) MATERIALS AND EQUIPMENT FLOATER.- The Contractor shall procure, and shall maintain during the performance of the Contract Agreement, Materials and Equipment Floater (May be labeled as *Equipment Floater* or Installation Floater or Builders Risk) Insurance to protect the interests of the Owner, the Contractor and Subcontractors against loss by vandalism, malicious mischief, and all hazards included in a standard All Risk Endorsement. The amount of insurance shall at all times equal or exceed the amount of the materials in the Contract + \$30k for Owner furnished materials. The policies shall be in the names of the Owner and the Contractor.

*Disposition:* Original policy must be returned to the Owner with properly executed Contract Documents. Owner may accept with returned, executed Contract Documents in lieu of an original policy, an insurance binder evidencing the policy coverage, but Contractor shall not be relieved of the obligation to furnish the actual policy.

*Endorsement on Materials and Equipment Floater Policy.*—There shall be attached to and made a part of the insurance policy for MATERIALS AND EQUIPMENT FLOATER an endorsement of the insurance company in accordance with the specimen shown in preceding Paragraph (a)(3).

**Article 5. - Hazards and Indemnification.** (a) *Hazards.*—The Contractor shall be responsible from the time of his execution of the Contract Documents or from the time of the beginning of the first work, whichever shall be earlier, for all injury or damage of any kind resulting from the Work to persons or property regardless of who may be the owner of the property. It is the intention of this paragraph to shift the full and complete risk of all such loss to the Contractor for the period of construction and until notice from the Owner of the final acceptance of the Work is made in accordance with Article 30, regardless of whether or not any particular hazard shall be insured against.

(b) *Indemnification.*—In addition to the liability imposed upon the Contractor on account of bodily injury (including death) or property damage, which liability is not impaired or otherwise affected hereby, the Contractor assumes the obligation to save the Owner harmless and to indemnify and defend the Owner, the Engineer and their agents and employees from and against all claims, damages, losses and expenses including claims consultant's and attorney's fees arising out of or through bodily injury, sickness, disease or death of any person or persons or damage to property (regardless of who may be the owner of the property) including the loss of use resulting therefrom arising out of or suffered through any act or omission of the Contractor or any Subcontractor, or anyone either

- (1) directly or indirectly employed by the Contractor, or
- (2) under the supervision of the Contractor or any subcontractor in the prosecution of the Work required by the Contract Documents.

In any and all claims against the Owner or the Engineer, or any of their agents or employees, by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, this indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' compensation acts, disability benefit acts or other employee benefits acts.

(c) *Sole Negligence Exception.*—The Contractor shall not be liable or responsible for loss or damage, and the indemnity obligation set forth above will not apply if the incident from which the loss or damage arose was the result of the sole negligence or sole cause of the Owner, the Engineer, or their agents, servants and employees.

**Article 6. - Notice to Proceed.** The Notice to Proceed will be issued, following the pre-construction conference, within thirty (30) days of the execution of the Contract Agreement by the Owner. The time may be extended by mutual agreement between the Owner and the Contractor. If the Notice to Proceed has not been issued within the thirty (30) day period or within the period mutually agreed upon, the Contractor may terminate the Contract Agreement without further

liability on the part of either party.

Within ten (10) days of receiving the Notice to Proceed, the Contractor must initiate on-site construction activity. If on-site construction activity is not initiated within this time period, the Owner may begin proceedings for Termination of Work for Default.

**Article 7. - Termination of Work for Default.**—(a) *Definition.*—The Work may be terminated for default if any one of the following events or circumstances occurs:

- (1) The Contractor is adjudged bankrupt or becomes insolvent;
- (2) The Contractor makes a general assignment for the benefit of creditors;
- (3) A trustee or receiver is appointed for the Contractor or for any of Contractor's property;
- (4) The Contractor files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws;
- (5) The Contractor fails to supply sufficient skilled workmen, materials or equipment;
- (6) The Contractor fails to make satisfactory progress toward timely completion of the Work;
- (7) The Contractor fails to make prompt payments to Subcontractors or material suppliers for labor, materials or equipment;
- (8) The Contractor disregards laws, ordinances, rules, regulations, or orders of any public body having jurisdiction of the Work;
- (9) The Contractor fails to comply with directives of the Engineer; or,
- (10) The Contractor otherwise violates any provision of the Contract Documents.

(b) *Grounds for Issuance of Notice of Declaration of Default.*—It shall be a sufficient ground for the issuance of a notice of declaration of default that the Contractor has been unfaithful or delinquent in the performance of the Contract or any part of it in any respect. The Engineer does not have authority to declare the Contractor in default.

(c) *Termination of Services and Possession of the Project.*—The Owner may, without prejudice to any other right or remedy and after giving the Contractor and surety written notice ten (10) days in advance, terminate the services of the Contractor and take possession of the Project, the Work and of all products thereon owned by the Contractor, and finish the Work by whatever method the Owner may deem expedient. In such case the Contractor shall not be entitled to receive

any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Project and all Work, including compensation for additional professional services, such excess shall be paid to the Contractor. If such costs exceed such unpaid balance, the Contractor or surety shall pay the difference to the Owner. Such costs incurred by the Owner will be determined by the Engineer and incorporated in a Change Order.

(d) *Effect of Termination.*—Where the Contractor's services have been so terminated by the Owner, said termination will not affect any right of the Owner against the Contractor then existing or which may thereafter accrue. Any retention or payment of monies by the Owner due the Contractor will not release the Contractor from compliance with the Contract Documents.

**Article 8. - Termination for Convenience of Owner.** (a) *General.*—If, for any reason other than those provided for under Article 7, the Owner elects to discontinue, in whole or in part, the Work under this Contract, the Owner may, ten (10) days after delivery of a written notice to the Contractor and the Engineer, terminate, in whole or in part, the Contractor's performance of the Work under this Contract. The notice of termination shall specify the extent to which performance of the Work under the Contract is terminated.

(b) *Entitlement to Payment.*—In the event of such termination by the Owner, the Contractor shall be entitled to payment for the Work properly performed up to the time of the termination and reimbursement for such actual costs as are reasonably incurred by the Contractor due to the termination and not otherwise compensated. The Contractor shall also be entitled to profit on the amounts payable to the Contractor, but such profit shall be limited to six (6%) percent of such amounts. The Contractor shall not be entitled to any payment, including any anticipated profit, on Work not performed, and the Contractor shall not be entitled to any compensation or recovery of damages for any other costs, losses, or damages of any nature.

**Article 9. - Assignments.** The Contractor shall not assign the whole or any part of this Contract or any monies due or to become due hereunder without prior written consent of the Owner.

Should the Owner consent, in writing, to Contractor's assigning of all or any part of any monies due, or to become due, under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of any assignee in and to any monies due or to become due to the Contractor shall be subject to any set-offs then due to the Owner and to prior liens of all persons, firms, and corporations for services rendered or materials supplied for the performance of the Work called for under this Contract.

**Article 10. - Subcontractors, Materialmen, Suppliers and Employees.**—(a) *Submission of List.* - As soon as possible after notice of award of the Contract and in any event not later than the time fixed in the Contract for delivery of the executed Contract Documents to the Owner, the Contractor shall submit in writing to the Engineer a list of the names of Subcontractors that the Contractor will engage for the Work. The list of Subcontractors is not submitted for approval, but is for the purpose of establishing:

- (1) What trades and portions of the Work are to be performed under subcontract; and,

- (2) The names of the entities selected by the Contractor to perform work by subcontract, the aforesaid selection being a matter lying solely within the discretion of the Contractor.

The Contractor shall utilize the services of specialty Subcontractors on those parts of the Work which, under normal construction practices, are best performed by specialty Subcontractors and as may be required by the Engineer in the Engineer's sole discretion, at no additional cost to the Owner. If the Contractor desires to self-perform specialty Work, the Contractor shall submit a notice to the Owner accompanied by evidence that the Contractor's own organization has successfully performed the type of work, and the performance of the Work by specialty Subcontractors will result in materially increased costs or inordinate delays.

(b) *No Approval of Subcontractors.*—Neither the Owner nor the Engineer undertakes to pass upon or approve any Subcontractor.

(c) *Warranty of Contractor.*—The Contractor warrants that the Subcontractors selected by the Contractor are reputable, skilled, reliable, competent, qualified in the trade or field in which such Subcontractors are to perform Work on the Project, and that all Subcontractors are thoroughly familiar with applicable codes.

(d) *Certification on account of.*—The Engineer shall, upon written request, furnish to any Subcontractor, wherever practicable, evidence of the amounts certified as payable or paid on the Subcontractor's account. Furnishing any such evidence shall not establish any relationship between the Engineer and any Subcontractor.

(e) *Contractor Responsible for Acts and Omissions of Subcontractors, Materialmen, Suppliers and Employees.*—The Contractor agrees that it is as fully responsible for the acts and omissions of its Subcontractors, materialmen, suppliers, and employees (and of entities either directly or indirectly employed by any of them) as the Contractor is for the acts and omissions of entities directly employed or engaged by the Contractor. The failure of a Subcontractor, materialman, supplier, or employee to timely and properly perform any Work shall not be asserted by the Contractor as an excuse for any omission from, or noncompliance with, the requirements of the Contract Documents; nor shall the Contractor be entitled to an extension of the Contract Time because of any failure of a Subcontractor, materialman, supplier, or employee to timely perform the Work unless such failure was a direct result of some critical delay to the Subcontractor, materialman, supplier or employee of the kind and character described under Article 28 of the General Conditions for which the Contractor shall have requested and received an extension of time under the terms of Article 28 of the General Conditions. The subcontracting of work does not relieve the Contractor of the full responsibility for the execution of the Work and for compliance with all requirements of the Contract Documents. The Contractor may not assert negligence, inefficiency, insolvency, bankruptcy, or incompetence of any Subcontractor, materialman, supplier, or employee as excuse for any noncompliance with methods and material designated in the Contract Documents. As to Subcontractors, materialmen, suppliers and employees of the Contractor, the doctrine that a principal is liable for acts and omissions of his agent shall be binding on the Contractor, and the Contractor may not reverse the aforesaid doctrine by serving as a conduit or

agent for its Subcontractors, materialmen, suppliers and employees. Any provision in any Contract between the Contractor and any Subcontractor pursuant to which the Contractor is obliged to present to the Owner any claim of any Subcontractor shall be invalid, null and void.

(f) *No Contract Between Owner and Any Subcontractor, Materialman, Supplier, or Employee.*—Nothing contained in the Contract Documents shall create any contractual relationship between the Owner and any Subcontractor or between the Owner and any materialman, supplier or employee of the Contractor or its Subcontractors.

(g) *Relationship of Contractor and Subcontractors.*—The Contractor agrees to bind every Subcontractor to, and every Subcontractor agrees to be bound by, the terms of the Contract Documents, including the following provisions of this Article:

The Subcontractor agrees

- (1) To be bound to the Contractor by the terms of the Contract Documents and to assume toward the Contractor all the obligations and responsibilities that the Contractor by the Contract Documents assumes toward the Owner.
- (2) To submit to the Contractor applications for payment in such reasonable time as to enable the Contractor to apply for payment under Article 30 of the General Conditions.
- (3) To make claims for extras, for extensions of time or for damages to the Contractor in the manner provided in the General Conditions for like claims by the Contractor upon the Owner.

The Contractor agrees

- (1) To be bound to the Subcontractor by all the obligations that the Owner assumes to the Contractor under the Contract Documents.
- (2) To pay the Subcontractor upon the payment of certificates issued under the schedule of values described in Article 24 of the General Conditions the amount allowed to the Contractor on account of the Subcontractor's work to the extent of the Subcontractor's interest therein; amounts retained by the Contractor from payments due to Subcontractors (expressed as a percentage) shall not exceed that being retained by the Owner.
- (3) To pay the Subcontractor as required by the Contract Documents.
- (4) To pay the Subcontractor on demand for its work or materials as far as executed and fixed in place, less the retained percentage, even though the Engineer fails to approve payment to the Contractor for any cause not the fault of the Subcontractor.
- (5) To pay the Subcontractor a just share of any fire insurance money received by the

Contractor.

- (6) To make no demand for liquidated damages or penalty for delay in any sum in excess of such amount as may be specifically identified in the subcontract.
- (7) That no claim for services rendered or materials furnished by the Contractor to the Subcontractor shall be valid unless written notice thereof is given by the Contractor to the Subcontractor during the first ten days of the calendar month following that in which the claim originated.
- (8) To give the Subcontractor an opportunity to be present and to submit evidence in any dispute involving rights of the Subcontractor.

(b) *Owner Not Obligated to any Subcontractor.*—There is no obligation on the part of the Owner to pay, or to see to the payment of, any sums to any (1) Subcontractor, (2) materialman, (3) supplier, (4) laborer, (5) employee, or (6) claimant as defined in the Payment Bond.

(c) *Incorporation of Terms in Subcontracts.*—The Contractor agrees that failure on its part to incorporate in all subcontracts an express provision in accordance with this Article shall be deemed to be and is a breach of an essential covenant, and that, in the event of such breach, that Contractor shall, within five (5) days after demand of the Owner, furnish proof in writing that the deficiency has been remedied and that (1) the Contractor may not maintain that it is beyond the Contractor's right or ability to require performance of terms of the Contract Documents by a Subcontractor and (2) no Subcontractor may maintain that it has not assumed toward the Contractor all the obligations and responsibilities that the Contractor has assumed toward the Owner.

**Article 11 - Engineer.**—(a) *Supervision.*—The Engineer shall have general supervision and direction of the Work except in respect to safety and except as qualified by Articles 27 and 36 of the General Conditions. He/she shall make visits to the Project site and make determination as to whether the Work is proceeding in accordance with the Contract Documents. Except for projects on which the Macon Water Authority itself serves in the capacity of engineer by use of its employees, which shall be indicated in the Contract Documents, the Engineer is an independent contractor and acts as the agent of the Owner only when in special instances he/she is authorized in writing by the Owner so to act, and in such instances he/she shall, upon request, show the Contractor written authority. The Engineer has authority to stop the Work whenever such stoppage may be necessary to ensure the proper execution of the Contract.

(b) *Interpreter and Impartial Judge.*—As the Engineer is the interpreter of the conditions of the Contract and the judge of its performance, the Engineer shall side neither with the Owner nor with the Contractor but shall use the Engineer's powers to enforce the faithful performance of the Contract by both the Owner and the Contractor.

(c) *Succession.*—In case of the termination of the employment of the Engineer, the Owner shall appoint a capable and reputable Engineer against whom the Contractor shall make no objection and whose status under the Contract shall be that of the former Engineer.



(d) *Promptness.*—The Engineer shall make decisions with reasonable promptness after presentation of evidence on (i) any claim of the Owner or Contractor, (ii) a demand of the Owner or Contractor for a decision on any matter relating to the execution, or progress, of the Work, or (iii) a demand of the Contractor or Owner for interpretation of or additional instructions (“Request for Information” or “RFI”) with respect to the Contract Documents.

(e) *Engineer’s Authority.*—The Engineer shall be vested with the authority to judge, determine and direct the following:

- (1) Whether products furnished are of the quality, type and kind called for by the Contract Documents and are otherwise acceptable for the Work as provided in the Contract Documents, and if not, to reject those not so qualifying or otherwise unacceptable;
- (2) Whether products incorporated in the Work comply with the standards and requirements of the Contract Documents as to installation and operation and, if not, to require their removal and replacement, at the expense of the Contractor, with products which do meet the qualifications and operating ability, requirements, performance and standards as provided in said Contract Documents;
- (3) The accuracy of quantities, amount of Work performed and all other submittals by the Contractor submitted in partial or periodic payment estimates, and whether all or any part of such quantities and other submittals are acceptable and comply with the Contract Documents, and to disallow any submittals not approved by the Engineer until the deficiencies causing such disallowance have been eliminated and rectified;
- (4) The validity and merit of any and all claims for additional compensation or extension of the Contract Time;
- (5) All matters relating to artistic effect;
- (6) The validity and reasonableness of any notice of facility interruption given under Article 20 of the General Conditions; and,
- (7) All other matters relating to the proper execution of the Work in conformity with the Contract Documents, including workmanship.

The determination and decision, and any resulting approval, non-approval, condemnation, rejection, requirements of removal or replacement in all the foregoing matters of or by the Engineer shall be final and conclusive and binding upon the Contractor, all Subcontractors and all suppliers of products materials and equipment.

(f) *Claims for alleged procrastination.*—No claim for delay to the Contractor or for additional expense to the Contractor shall commence to accrue on account of failure of the Engineer

to render decisions, make interpretations, or furnish additional instructions until ten (10) days after receipt of written claim for additional compensation, damages, or extension of time served upon the Engineer and the Owner and not then unless such claim be reasonable and otherwise permitted under the Contract Documents.

**Article 12. - Separate Contracts.**—(a) *Cooperation of Contractor.*—The Owner reserves the right to let other contracts in connection with, or related to, this Project. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their products and the execution of their work, and the Contractor and other contractors shall properly connect and coordinate their respective work with each other. If the proper execution or results of any part of the Contractor's Work depends upon the work of any other contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such other contractor's work that render it unsuitable for such proper execution and results.

(b) *Performance of Work by Owner.*—The Owner may perform additional work related to the Project with Owner's own forces. The Contractor shall afford the Owner reasonable opportunity for the introduction and storage of products and the execution of such work and shall properly connect and coordinate Contractor's work with work performed by Owner's own forces.

(c) *Claims for Extra Expense.*—If the performance of additional work by other contractors or the Owner is not noted in the Contract Documents prior to the execution of the Contract, written notice thereof will be given to the Contractor prior to starting any such additional work. If the Contractor believes that the performance of such additional work by the Owner or others causes the Contractor any additional expense or entitles the Contractor to an extension of the Contract Time, the Contractor may make a claim therefor as provided in Article 29 of the General Conditions.

**Article 13. - Laws and Regulations.** (a) *General.*—The Contractor acknowledges and agrees that all applicable federal, state, county and city laws, municipal ordinances, and the codes, rules, and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract as though written out in full herein. The Contractor shall keep fully informed of all laws, ordinances and regulations of the federal, state, county, city and municipal governments or authorities in any manner affecting those engaged or employed in the Work or the material used in the Work or in any way affecting the conduct of the Work and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over same. If any discrepancy or inconsistency should be discovered in these Contract Documents herein referred to, in relation to any such law, ordinance, regulation, order or decree, the Contractor shall herewith report the same, in writing, to the Owner and the Engineer.

(b) *Expense for Violation of Laws, Ordinances, etc.*—If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules or regulations without such notice to the Owner, the Contractor shall bear all costs arising therefrom.

(c) *Indemnification.*—The Contractor shall at all times observe and comply with all such existing and future laws, ordinances, and regulations, and shall protect and indemnify the Owner, the Engineer and their agents against the violation of any such law, ordinance regulation, order or

decree, whether by the Contractor or by the Contractor's employees or Subcontractors.

(d) *Drug Free Workplace Act.*—The Contractor certifies that the provisions of O.C.G.A. §§ 50-24-1 through 50-24-6 (as may be amended or re-numbered) relating to the “Drug Free Workplace Act” will be complied with in full. The Contractor further certifies that: (i) A Drug Free Workplace will be provided for employees during the performance of the Contract, and (ii) that if a Subcontractor is engaged by the Contractor to work in a Drug Free Workplace, the Contractor shall secure from the Subcontractor the following written certification:

“As part of the subcontracting agreement with \_\_\_\_\_  
(Contractor's name), \_\_\_\_\_ (Subcontractor's name)  
certifies to the Contractor that a drug-free workplace will be provided for the Subcontractor's employees during the performance of this Contract pursuant to the ‘Drug Free Workplace Act’”. Contractor also certifies to the Owner and the Engineer that the Contractor and its employees will not engage in the unlawful manufacture, sale, distribution, dispensation, possession, or use of any controlled substance or marijuana during the performance of the Contract.

(e) *Alcoholic Beverages on the Jobsite.*—The Contractor will strictly enforce a policy prohibiting the possession and consumption of alcoholic beverages on the jobsite before, during or after working hours for duration of the Work.

**Article 14. - Taxes.** (a) *General.*—The Contractor shall pay all sales, consumer, use and other similar taxes required by the law of the place where the Work is performed. The Owner will be responsible for any sales or use tax due on products furnished by the Owner to the Contractor to be incorporated into the Work.

(b) *Tabulation.*—The Contractor shall provide a written tabulation, plus other documentation as may be required, of all taxes, including sales tax, paid by the Contractor to assist the Owner in obtaining sales or use tax refunds for eligible machinery and equipment used for the primary purpose of reducing or eliminating air or water pollution as provided for in Chapter 48-8-3 (36) and (37) of the Official Code of Georgia (as may be amended). Such written tabulation shall be included with each partial payment request. Additionally, the tabulation shall be documented with copies of invoices indicating the amount of tax paid, with all blanks completed on the invoice, and with a description of the function of the item included in the tabulation. All taxes will be paid by the Contractor. All refunds will accrue to the Owner.

**Article 15. - Notice and Service Thereof.** (a) *General.*—All notices, demands, requests, instructions, approvals, and claims shall be in writing.

(b) *Notice to Contractor.*—Any notice to or demand upon the Contractor will be sufficiently given if delivered at the office of the Contractor specified in the Bid (or at such other office as the Contractor may from time to time designate to the Owner in writing), or if delivered by the United States Mail in a sealed, postage-prepaid envelope, or delivered by facsimile transmission, followed by written confirmation, in each case addressed to such office.

(c) *Notice to Owner.*—All papers required to be delivered to the Owner shall, unless otherwise specified in writing to the Contractor, be delivered to:

Macon Water Authority  
790 Second Street  
Macon, GA 31201  
FAX 478/750-2007

Any notice to or demand upon the Owner shall be sufficiently given if delivered to the Office of the Executive Director or if delivered by the United States Mail in a sealed, postage-prepaid envelope, or delivered by facsimile addressed to said Executive Director or to such other representative of the Owner or to such other address as the Owner may subsequently specify in writing to the Contractor for such purposes. Any such notice or demand shall be deemed to have been given to the Owner or made only as of the time of actual delivery to Owner.

(d) *Delivery to Engineer or Resident Inspector.*—Notice in writing or orally to the Engineer or to the resident inspector is not notice to the Owner unless a copy of the aforesaid notice in writing shall have been properly served upon the Owner as provided in this Article.

**Article 16. - Patents and Royalties.** (a) *General.*—If the Contractor uses any patented, trademarked or copyrighted design, process, device, material or other item, , the Contractor shall provide for such use by suitable agreement between the Owner and the holder of such patented, trademarked or copyrighted design, device or material. The Contract Prices shall include royalties or costs arising from the use of such design, device, or materials, in any way involved in the Work.

(b) *Indemnification.*—The Contractor and the Contractor's surety shall indemnify and save harmless the Owner, the Engineer and their agents from claims for infringement by reason of the use of such patented, trademarked or copyrighted design, process, device or materials in connection with Work agreed to be performed under this Contract, and shall indemnify the Owner, the Engineer and their agents for any cost, expense, damage and reasonable attorneys' fees which the Owner, the Engineer or their agents may be obliged to pay by reason of such infringement, at any time during the prosecution of the Work or after completion of the Work.

**Article 17. - Land and Rights-of-Way.** (a) *Project Site.*—The Owner will provide, as indicated in the Contract Documents and prior to the Notice to Proceed, the lands upon which the Work is to be performed, rights-of-way for access thereto, and such other lands which are designated for the use of the Contractor. The Contractor shall confine all Work and all associated activities to the easements and other areas designated for the Contractor's use. The Contractor shall comply with any limits on construction methods and practices which may be required by easement agreements.

(b) *Delays in Providing Access.*—If, due to some unforeseen reason, the necessary easements are not obtained, the Contractor shall receive an equitable extension of Contract Time or an equitable increase in the Contract Price, or both, to cover the Contractor's additional costs as a result thereof, provided the Owner is notified in writing of the claim. The Contractor's claim therefor

shall be made as provided for in Article 29 of the General Conditions.

(c) *Additional Easements.*—Should additional temporary easements for ingress or egress be required by the Contractor for access to the Work, these easements shall be obtained by the Contractor, at no additional cost to the Owner.

**Article 18. - Products.** (a) *Storage.*—Products shall be stored in accordance with the manufacturer’s recommendations to insure the preservation of their quality and fitness for the Work. Stored products to be incorporated in the Work shall be located so as to facilitate prompt inspection by the Owner or the Engineer.

(b) *Installation.*—Manufactured products shall be applied, installed, connected, erected, used, cleaned, and conditioned as directed by the manufacturer.

(c) *Conformance with Shop Drawings.*—Products shall be furnished in accordance with shop drawings or samples submitted by the Contractor and approved by the Engineer.

(d) *Quality and Ownership.*—Unless otherwise specified, all products incorporated into the Work shall be new, and both workmanship and materials shall be of good quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of products. The burden of proof is on the Contractor. Products to be incorporated into the Work shall not be purchased by the Contractor or Subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

**Article 19. - Supervision of Work.** (a) *Supervision by Contractor.*—The Contractor shall give efficient supervision to the Work, using its best skill and attention. The Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

(b) *Superintendent of Contractor.*—The Contractor shall employ and maintain on the Work a qualified superintendent and any necessary assistants, all satisfactory to the Owner and Engineer, who shall have been designated in writing by the Contractor as the Contractor’s representative at the site. The superintendent shall not be changed except with the consent of the Owner and Engineer unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in the Contractor’s employ. The superintendent shall represent the Contractor and shall be present on the site at all times as required to perform adequate supervision and coordination of the Work. The superintendent’s sole responsibility shall be to superintend the construction of the Project; he shall not be a “working foreman.” The superintendent shall have full authority to act on behalf of the Contractor and to execute orders or directions of the Engineer without delay. The superintendent shall have full authority to promptly supply products, tools, plant equipment and labor as may be required. The superintendent’s authority shall be such that all communication given to the supervisor shall be as binding as if given to the Contractor.

(c) *Contractor’s Personnel.*—The Contractor shall employ only competent and skilled personnel. The Contractor shall at all times enforce strict discipline and good order among its employees and shall not employ on the Work any unfit person or anyone not skilled in the work

assigned to him. The Contractor shall, upon demand from the Engineer, immediately remove any superintendent, foreman, or worker whom the Engineer or Owner may consider incompetent or undesirable.

**Article 20. - Interruption of Facility Operations.** (a) *General.*—The Contractor shall provide the Owner with written notice at least five (5) days prior to any interruption in facility operations required by any construction activity. The notice shall include the date and time of the scheduled interruption; the length of time the interruption will be in effect; the procedures to be followed in effecting the interruption; a complete identification of all those processes, equipment and operations to be affected; and all other information the Owner may require. The Contractor shall provide any and all equipment, piping, auxiliary power or other means necessary to sustain facility operations or function for interruptions which have not been identified by the Contract Documents, or when interruptions must exceed the time allowed by the Contract Documents.

(b) *Damages and Fines.*—Any damages resulting from surcharging, overflow or back-up caused by the Contractor's operations shall be the Contractor's responsibility. Any fines levied against the Owner resulting from a surcharge, overflow or backup caused by the Contractor shall be paid by the Contractor.

**Article 21. - Protection of Work, Property and Persons.** (a) *Duty to Protect Persons and Property.*—The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The Contractor shall take all necessary precautions for the safety of, and shall provide necessary protection to prevent damage, injury or loss to all employees on the Work and other persons who may be affected thereby, all the Work and all products to be incorporated therein, whether in storage on or off the site, and other property at the site and adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. The Contractor shall pay for any such damage, injury, or loss except such as may be directly the result of errors in the Contract Documents or such as shall be caused directly by agents or employees of the Owner.

(b) *Safety Precautions.*—The Contractor shall comply with the Occupational Safety and Health Act, the Contract Work Hours and Safety Standards Act, and all rules and regulations relating thereto. Contractor warrants and represents that it is thoroughly familiar with the safety requirements with regard to scaffolding set forth in O.C.G.A. § 34-1-1, the requirements concerning blasting or excavating near underground gas pipes and utility facilities contained in O.C.G.A. § 25-9-1, *et seq.*, and the High Voltage Safety Act, O.C.G.A. § 46-3-30, *et seq.*, and that the Work shall be prosecuted in complete accord with all limitations and requirements set forth in these, and other applicable, laws. The contractor's operation of the jobsite shall be consistent with the provisions of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc., and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work arising out of and in the course of employment on the Work. The Contractor alone shall be responsible for the safety, efficiency, and adequacy of its plant, appliances, and methods and for any damage which may result from their improper construction, maintenance, or operation. The Contractor shall erect and

properly maintain at all times as required by the conditions and progress of the work proper safeguards for the protection of workers and the public and shall post danger warnings against any hazards created by the construction operations. The Contractor shall designate a responsible member of its organization on the Work whose duty shall be the prevention of accidents. In the absence of notice to the contrary filed with the Engineer in writing with a copy to the Owner, this person shall be the superintendent of the Contractor.

(c) *Emergencies.*—In an emergency affecting the safety of life or the Work or adjoining property, the Contractor, without special instruction or authorization from the Engineer or Owner, is hereby permitted to act, at its discretion, to prevent such threatened loss or injury. Any remuneration claimed by the Contractor on account of emergency work shall be determined in accordance with allowances permitted on force account under section (c), Case(c) of Article 29 of the General Conditions.

(d) *Injury or Loss to Persons or Property.*—The Contractor shall remedy all damage, injury or loss to any property, improvements or facilities caused, directly or indirectly, in whole or in part, by the Contractor or any of the Contractor's Subcontractors or anyone directly or indirectly employed by and of them or anyone for whose acts any of them may be liable. The property, improvements or facilities shall be replaced or restored to a condition as good as when the Contractor entered upon the Work. In case of failure on the part of the Contractor to restore such property, or pay for such damages or injury, the Owner may, after 48 hours written notice, proceed to repair, rebuild, or otherwise restore such property, improvements or facilities as may be deemed necessary. The cost thereof will be deducted from any monies due or which may become due to the Contractor under this Contract.

(e) *Blasting.*—In the absence of an express provision in the Contract Documents permitting blasting, there shall be no blasting. If blasting is permitted under the Contract Documents and under the law which is applicable to the Project site, such blasting shall be done in such manner as to prevent all damage and injury.

(f) *Rain Water, Surface Water, and Backup.*—The Contractor shall protect all Work, including but not limited to excavations and trenches, from rain water, surface water, and back-up of drains and sewers. The Contractor shall furnish all labor, pumps, shoring, enclosures, and equipment necessary to protect and keep the Work free of water. Completed Work and stored products shall be suitably protected during inclement weather to allow Work to proceed in a timely fashion. Work planned, or in progress, should be performed to minimize impact of adverse weather conditions.

**Article 22. - Protection of the Environment.** (a) *General.*—The Contractor shall be responsible for taking all measures required to minimize all types of pollution associated with the undertaking of the proposed Work, and shall abide by the requirements of all governmental agencies having jurisdiction over the Work or Contractor's Project operations.

(b) *Restoration.*—Any area used or involved in the Project that is disturbed by the Contractor, shall be restored to original or better condition, even though such area is outside the

limits of that specified for grading, grassing or landscaping.

**Article 23. - Protection, Location and Relocation of Utilities.** (a) *Notification and Protection.*—The Contractor shall notify owners of adjacent utilities when prosecution of the Work may affect them. The Contractor shall protect from damage all existing improvements or utilities at, or in proximity to, the site of the Work, and shall repair or restore any damage to such facilities resulting from the performance of the Work. If the Contractor fails or refuses to repair any such damage promptly, the Owner may have the Work performed and charge the cost thereof to the Contractor.

(b) *Relocation.*—Prior to the construction or installation of any proposed facility or pipeline, the Contractor shall expose all existing utilities true to their vertical and horizontal location, within the vicinity of the Work. In order to avoid conflicts between existing and proposed facilities or utilities, the Contractor shall either relocate the existing or proposed utility on a temporary or permanent basis, or shall take whatever means necessary to protect the existing facilities or utilities during the installation of proposed utilities, as approved by the Engineer. No separate or additional payment will be made for the relocation of existing utilities or for any work associated with the protection of existing facilities or utilities.

**Article 24. - Schedules, Reports and Records.**—(a) *Progress Reports.*—Within such reasonable time as the Owner shall designate in writing, the Contractor shall submit to the Owner such schedule of quantities and costs, construction progress schedules, payrolls, bills, vouchers, correct copies of all subcontracts, statements, reports, correct copies of all agreements, correspondence, and written transactions with the surety that have any relevance to the Work, estimates, records, and other data as the Owner may request concerning Work performed or to be performed under this Contract. When requested by the Owner, the Contractor shall give the Owner access to accounts relating to the foregoing. The above reports shall include but are not limited to (i) written notice of dates by which specified Work will have been completed, (ii) written notice of dates by which condemned Work shall have been remedied, (iii) written notice that condemned Work has been remedied, (iv) written notice as to the date or dates by which Work that has not been performed with equal steps and at the same rate required by the construction progress schedule shall have been brought into conformity with the schedule, (v) written notice of the date by which any undisputed claim of a Subcontractor, materialman, or laborer shall have been paid, (vi) written advice regarding the nature and amount of any disputed claim of a Subcontractor, materialman, or laborer, and (vii) information regarding work performed under Sections (c), Case (b) and Case (c) of Article 29 of the General Conditions.

(b) *Construction Progress Schedule.*—Within ten (10) days of the Notice to Proceed, the Contractor shall submit to the Engineer a Preliminary Progress Schedule (“PPS”) and a Near Term Schedule (“NTS”) in the form and with the content required by the Specifications. Within forty-five (45) days of the Notice to Proceed, the Contractor shall submit to the Engineer the Overall Project Schedule (“OPS”) as required in the Specifications.

(c) *Schedule of Values.*—The Contractor shall, within ten (10) days of the Notice to Proceed, submit to the Engineer a Schedule of Values of the various parts of the Work, including quantities, aggregating the total Contract Price, divided in such manner as to facilitate payments to



Subcontractors in accordance with Article 10, with a complete breakdown of the Contract Price so arranged and so itemized in accordance with the Specifications as to meet the approval of the Engineer, and, if requested, supported by such evidence as to its correctness as the Engineer may direct. This schedule, designated herein as the Schedule of Values, when approved by the Engineer shall be used as a basis for certificates of payment.

(d) *Shop Drawings.*—The Contractor shall prepare, execute, and submit shop drawings as required by the Specifications. No shop drawings shall be submitted which do not comply with the Contract Documents.

(e) *Schedule of Submittals.*—Within ten (10) days of the Notice to Proceed, the Contractor shall prepare and submit for the approval of the Engineer a Schedule of Submittals showing the estimated date of submittal of all shop drawings and the desired approval date for each shop drawing anticipated. The Contractor shall submit in accordance with the schedule and the Engineer shall furnish approval in accordance with the schedule. The schedule must be consistent with the construction progress schedules.

(f) *Submitting Updated Schedules.*—An updated OPS and NTS together with an updated Schedule of Submittals shall be presented with each periodical payment request. Failure to timely submit such schedules will delay processing of the pay request until receipt of the updated schedules.

(g) *Float in the Schedule.*—If the OPS reflects a completion date prior to the completion date established in the Contract Agreement, or as extended by Change Order, this shall afford no basis for a claim of delay should the Contractor not complete the Work prior to the projected date set forth in the OPS. All “float” between the completion date in the OPS and the completion date established in the Contract Agreement shall belong to and be exclusively available to the Owner. Should a Change Order be executed with a revised completion date, the progress schedule shall be revised to reflect the new completion date.

(h) *Record Drawings.*—The Contractor shall maintain on the Project site throughout the Contract Time an up-to-date set of records and drawings as required by the Specifications.

(i) *Project Coordination Meetings.*—The Contractor shall participate in Project Coordination Meetings to be held on the site monthly, or more often if conditions warrant, to establish the current state of completion and revise the schedule as necessary. The Project Coordination Meeting will be conducted by the Owner and the Engineer.

(j) *Maintenance of Project Scheduling System.*—The Contractor shall take the following steps to ensure that the Project stays on schedule:

- (1) The Contractor shall implement the detailed NTS of activities to the fullest extent possible between Project Coordination Meetings.
- (2) The Contractor shall provide a copy of the Contractor’s Daily Report to the Resident

Inspector by 10:00 a.m. of the day following the Report date. This Daily Report will contain, as a minimum, the weather conditions; number of workers by craft, including supervision and management personnel on site; active and inactive equipment on site; Work accomplished by Critical Path Method activity item; problems; and visitors to the jobsite.

- (3) If a current activity or series of activities on the OPS is behind schedule and if the late status is not due to an excusable delay for which an extension of the Contract Time would be forthcoming, the Contractor shall attempt to reschedule the activity to be consistent with the OPS so as not to delay completion of the Contract. The Contractor agrees that:
  - a. The Contractor shall attempt to expedite the activity to completion so as to have it agree with the OPS. Such measures as the Contractor may choose shall be made explicit during the Project Coordination Meeting;
  - b. If, within two weeks of identification of such behind-schedule activity, the Contractor is not successful in restoring the activity to an on-schedule status, the Contractor shall:
    1. Carry out the activity with the scheduled crew on an overtime basis until the activity is complete or back on schedule;
    2. Increase the crew size or add shifts so the activity can be completed as scheduled; or,
    3. Commit to overtime or increased crew sizes for subsequent activities, or some combination of the above as deemed suitable by the Engineer.These actions shall be taken at no increase in the Contract Price.
- (4) Maintain a current copy of all construction schedules on prominent display in the Contractor's field office at the Project site; and,
- (5) Cooperate with the Owner or Owner's representative in all aspects of the Project Scheduling System. Failure to implement the Project Scheduling System or to provide specified schedules, diagrams, and reports, or to implement actions to re-establish progress consistent with the OPS may be causes for withholding of payment.

#### **Article 25. - Drawings and Specifications.**

(a) *Identification.*— The Contract Documents shall be as defined in Article 41(e) of the General Conditions. They are intended to define, describe, and provide for all Work necessary to complete the Project in an acceptable manner, ready for use, occupancy, or operation by the Owner. Insertion, addition, alteration, modification, revision, or deletion of any text, verbiage, provision, statement, term, condition, or other component of the Contract Documents, whether textual, numerical, or pictorial, is prohibited and no such unilateral change to the Contract Documents shall be binding.

(b) *Number of Copies.*—The Engineer will furnish the Contractor two copies of the Contract

Documents, one copy of which the Contractor shall have available at all times on the Project site. Any additional copies will be furnished at additional cost.

(c) *Correlation and Intent.*—The Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all. The intention of the documents is to include all labor and materials, equipment, and transportation necessary for the proper execution of the Work. It is not intended, however, that materials or work not covered by or properly inferable from any heading, branch, class, or trade of the Specifications shall be supplied unless distinctly noted on the drawings. Materials or Work described in words which so applied have a well-known technical or trade meaning shall be held to refer to such recognized standards. In the event the Engineer shall have used such phrases anywhere in the Specifications as: “work indicated on the drawings and herein specified”, “work shown and specified”, “in accordance with the drawings and Specifications”, “indicated on the drawings and Specifications”, “in accordance with Specifications and applicable drawings”, “these Specifications and the accompanying drawings”, “as indicated on the drawings and as specified herein”, or similar expressions, they shall not be deemed to be and are not a defeasance of the provisions under this Article of the General Conditions, and they are not to be construed as requiring Work to be called for both in the Specifications and in the drawings in order to be a requirement under the Contract. Any of the aforesaid conjunctive expressions and phrases or any cross-references between drawings and Specifications, between Specifications and Specifications, or between drawings and drawings to the contrary notwithstanding, the Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all.

(d) *Refinement of Documents.*—The Contractor shall do no Work without complete, definite, and clear Drawings and Specifications. In the event the Contract Documents are not complete, definite, and clear, the Contractor shall make demand upon the Engineer, in writing, for a Request for Instructions (RFI) in accordance with Section (d) (iii) of Article 11 of the General Conditions. A copy of such demand shall be served upon the Owner. With reasonable promptness the Engineer shall furnish complete, definite, and clear instructions in writing, or by means of drawings, or in writing and by means of drawings. Such additional instructions if given orally shall be confirmed in writing or by drawings or both within a reasonable time. All such additional instructions shall be consistent with the Contract Documents, true developments thereof, and reasonably inferable therefrom. The Work shall be executed in conformity with the aforesaid instructions. The Engineer shall furnish the Owner a copy of all additional instructions issued to the Contractor. No clarification of the Drawings and Specifications hereunder by the Engineer will entitle the Contractor to any additional monies unless a Change Order has been processed as provided by Article 29 of the General Conditions.

(e) *Conflicts.*—The following principles shall govern the settlement of disputes which may arise over conflicts in the Contract Documents:

- (i) as between figures given on drawings and the scaled measurements, the figures shall govern;
- (ii) as between large-scale drawings and small-scale drawings, the larger scale shall govern;

- (iii) As between Drawings and Specifications, the requirements of the Specifications shall govern;
- (iv) as between the form of the Contract Agreement, General Conditions or agency funding documents, the requirements of the agency funding documents shall govern; and,
- (v) in cases where products or quantities are omitted from the Specifications, the description and quantities on the Drawings shall govern.

Conflicts noted shall be reported to the Engineer. The principles set forth herein shall not alter the provisions of subsection (c) herein. Schedules, lists, indexes, tables, inventories, written instructions, written descriptions, summaries, statements, classifications, specifications, written selections, or written designations although appearing on the drawings are deemed to be and are “Specifications” within the meaning of this Article.

(f) *Materially Differing Site Conditions.*—Any materially differing site condition as between what is shown on the Drawings and Specifications and actually found on site shall be immediately reported to the Engineer and Owner, in writing, prior to the continuance of Work at the site. Failure of the Contractor to notify the Engineer, in writing, of the differing site condition prior to performance of Work at the site shall constitute a waiver of any claim for additional monies. Any Change Order necessitated by the differing site condition shall be processed as provided under Article 29 of the General Conditions. Any Work done by the Contractor following a discovery of such differing site condition or ambiguity or need for clarification in the Contract Drawings and Specifications, prior to a written report to the Engineer, shall not entitle the Contractor to additional monies and shall be done at the Contractor's risk.

**Article 26. - Surveys and Permits.**—(a) *Surveys.*—The Owner will furnish a land survey to establish a base line for locating the principal component parts of the Work, as shown in the Contract Documents. A bench mark will be otherwise specified in the Contract Documents; the Contractor shall develop and make all detailed surveys needed for construction, such as alignment, slope stakes, batter boards, stakes for pile location and other working points, lines, elevations and cut sheets.

(b) *Permits.*—Permits and licenses of a temporary nature necessary for the prosecution of the Work shall be obtained and paid for by the Contractor. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be obtained and paid for by the Owner unless otherwise specified.

**Article 27. - Testing, Inspection and Rejection of Work.**—(a) *Testing of Materials.*—Unless otherwise specifically provided for in the Specifications, the inspection and testing of materials and products to be incorporated in the Work at the site shall be made by bureaus, laboratories, or agencies approved by the Owner; the cost of such inspection and testing shall be paid by the Contractor. The Contractor shall furnish evidence, satisfactory to the Owner and Engineer, that the materials and products have passed the required tests prior to their incorporation into the Work. The Contractor shall promptly segregate and remove rejected materials and products from the site of the

Work.

(b) *Access to Work.*—The Owner and Engineer and their representatives shall at all times have access to the Work wherever it is in preparation or progress, and the Contractor shall provide proper facilities for such access and for inspection.

(c) *Notice to Engineer from Contractor Prior to Covering Work.*—If the Specifications, the Engineer's instructions (either in the Specifications or issued later in writing), laws, ordinances or any public authority require any Work to be specially tested or approved, the Contractor shall give the Engineer timely notice in writing of its readiness for inspection, and if the inspection is by any authority other than the Engineer, of the date fixed for such inspection. Inspections by the Engineer shall be made promptly and where practicable at the source of supply. If any Work should be covered without approval or consent of the Engineer, it must, if required by the Engineer, be uncovered for examination at the Contractor's expense.

(d) *Re-examination or Re-testing of Work Covered pursuant to Consent of Engineer.*—Re-examination or re-testing of questioned work covered pursuant to consent of the Engineer may be ordered by the Engineer, and if so ordered the Work must be uncovered by the Contractor. If such Work be found in accordance with the Contract Documents the Owner shall pay the cost of re-examination and replacement or of re-testing. If such Work be found not in accordance with the Contract Documents the Contractor shall pay such cost unless he shall show that the defect in the Work was caused by another contractor of the Owner, and in that event the Owner shall pay such cost. Re-examination or re-testing under the terms of this section applies only to Work which has been covered with consent of the Engineer. Work covered without consent of the Engineer must be uncovered for examination as provided under Article 27(c) of the General Conditions.

(e) *Inspection Does Not Relieve Contractor.*—Under the Contract Documents, the Contractor has assumed the responsibility of furnishing all services, labor, and materials for the entire Work in accordance with such documents. No provisions of this Article or any inspection of the Work by the Owner, representatives of the Owner, resident inspector, clerk-of-the-works, architects employed by the Engineer, representatives of the Engineer, or the Engineer shall in any way diminish, relieve, or alter said responsibility and undertaking of the Contractor; nor shall the omission of any of the foregoing to discover or to bring to the attention of the Contractor the existence of any Work or materials injured or done not in accordance with said Contract Documents in any way diminish, relieve, or alter such obligation of the Contractor nor shall the aforesaid omission diminish or alter the rights or remedies of the Owner as set forth in the Contract Documents. Subject to the provisions of Section (g) herein, the resident inspector has no power to make decisions, to accept or reject Work, or to consent to the covering of Work. The resident inspector owes no duty to the Contractor.

(f) *False Start.*—In the event notice of readiness pursuant to Article 30(g) of the General Conditions shall have been issued prematurely by the Contractor, the Contractor's action shall be deemed to be a "false start", and the Contractor shall be liable for the damage resulting from the aforesaid false start, including but not limited to the salary, professional fees, and travel and living expenses of the person or parties inconvenienced by the aforesaid false start.

(g) *Authority and Duties of the Resident Inspector.*—The Resident Inspector will be authorized to inspect all Work done and all products furnished, including preparation, fabrication and manufacture of the products to be used, but the Resident Inspector is not authorized to alter or waive any requirements of the Contract Documents. The Resident Inspector may temporarily reject products or suspend the Work until any question at issue can be referred to and decided by the Engineer. The responsibility of the Contractor is not lessened by the presence of the Resident Inspector.

(h) *Rejection of Work; Orders of Condemnation.*—The Contractor shall remove from the premises within the time designated in orders of condemnation all Work condemned by the Engineer as failing to conform to the Contract Documents, whether incorporated in the Work or not, and the Contractor shall promptly replace and re-execute the Work in accordance with the Contract Documents and without expense to the Owner and shall bear the expense of making good all work of other contractors destroyed by such removal or replacement. The Contractor shall supply any omitted Work and perform all unexecuted Work within the time fixed by the Engineer in orders of condemnation.

(i) *Remedy of the Owner for Breach of Order of Condemnation.*—If the Contractor does not make good a deficiency within the time fixed in an Order of Condemnation, the Owner may:

- (1) Remove the condemned Work and store it at the expense of the Contractor. If the Contractor does not pay the expenses of such removal and storing within ten (10) days after receipt of written demand of the Owner, the Owner may upon three (3) days' notice in writing to the Contractor sell such materials at private sale or at auction and shall account for the net proceeds thereof after deducting all proper costs incurred by the Owner; or
- (2) Supply omitted Work, perform unexecuted Work, or replace and re-execute Work not done in accordance with the methods and materials designated in the Contract Documents and deduct the cost thereof from any payment then or thereafter due the Contractor; or,
- (3) Accept the condemned Work and deduct the reasonable value of such Work from the Contract Price.

The remedies stated in this Article are in addition to the remedies otherwise available to the Owner, do not exclude such other remedies, and are without prejudice to any other remedies. Time limits stated in orders of condemnation are of the essence of the Contract. Unless otherwise agreed to by the Owner in writing, the making good of condemned Work shall physically commence at the site in not more than seven (7) days after receipt of the Order of Condemnation except that in case of emergency correction shall physically commence immediately and except that the Contractor shall in any event physically commence the correction at the site early enough to complete within the time allowed in the Order of Condemnation. The Owner shall give prompt consideration to reasonable requests for delay in commencement of the making good of orders of condemnation.

The making good of condemned Work shall be completed within the time allowed in the Order of Condemnation unless the Contractor shall have requested from the Engineer an increase in the amount of time allowed and the Engineer shall have given notice to the Contractor in writing, with copy to the Owner, stating the additional time, if any, allowed. An extension of the time allowed to correct condemned Work shall not extend the Contract Time.

(j) *Notice of Correction from Contractor.*—The Contractor shall give prompt notice in writing to the Engineer, with copy to the Owner, upon completion of the correction of any Work, the supplying of any omission of any Work or materials or the performance of any unexecuted Work condemned by the Engineer. In the absence of such notice, it shall be and is presumed under this Contract that there has been no correction, supplying remedy, or performance of unexecuted Work.

**Article 28. - Contract Time and Liquidated Damages.** (a) *Rate of Progress.*—The Contractor shall proceed with the Work at a rate of progress which will insure substantial completion of the Project within the Contract Time. It is expressly understood and agreed by and between the Contractor and the Owner that the Contract Time for the Work is a reasonable time, taking into consideration the average climatic and economic conditions, and other factors prevailing in the locality of the Work. It is understood that the Contractor's proposed construction schedule is based on a normal 40-hour work week, less recognized holidays. If the Contractor desires to work in excess of a normal 40-hour work week, the Contractor shall submit a written request to the Owner and Engineer a minimum of two (2) days prior to the desired work date. The Contractor shall be responsible for any additional expenses incurred by the Owner as a result of any extended work hours, including resident inspection overtime. The cost associated with resident inspector overtime will be deducted from the Contractor's monthly progress payment request.

(b) *Grounds for Delays and Extensions of Time.*—If the Contractor be delayed at any time in the progress of the Work by any act or neglect of the Owner or the Engineer, or of any employee of either, or by any separate contractor of the Owner, or by changes ordered in the Work, or by strikes, lockouts, pickets, abnormal and unforeseeable weather, unforeseeable subsurface conditions, fire, unusual delay in transportation, unavoidable casualties, or any causes beyond the Contractor's control, or by any cause which the Engineer shall decide to justify the delay, then the Contract Time may be extended for such reasonable time as the Engineer may decide.

(c) *Filing of Claims.*—No extension of the Contract Time shall be made for delay occurring more than ten (10) days before claim therefor is made in writing to the Engineer with a copy to the Owner. In the case of a continuing cause of delay, only one claim is necessary, but no claim for a continuing delay shall be valid unless the Contractor, within ten (10) days of the commencement of the delay, shall have given notice in writing to the Engineer, with copy to the Owner.

(d) *Weather Delays.*—The Contractor is held to be familiar with weather conditions in the Macon-Bibb County area. When a claim for extension of the Contract Time is based on abnormal and unforeseeable weather conditions the request must be accompanied by U.S. Weather Bureau data for the past ten (10) years for the Macon/Macon-Bibb County, Georgia area that substantiates the claim of abnormal and unforeseeable weather conditions. Each day of inclement weather is not, by itself, reason for an extension of the Contract Time. Extensions of the Contract Time will be

based solely on the number of rain days in a monthly period that are in excess of the ten (10) year average as established for the Macon/Macon-Bibb County area. A rain day, for purposes of calculating the ten (10) year average, is defined as a day in which 0.10 inch of rain or more was measured by the Weather Bureau.

(d) *Delay in Furnishing Drawings.*—If no Schedule of Submittals or agreement stating the dates upon which drawings or approval of shop drawings shall be furnished is made, then no claim for delay shall be allowed on account of failure of the Engineer to furnish drawings or approval of shop drawings until fourteen (14) days after demand therefor and not then unless such claim be reasonable.

(e) *No Damages for Delay.*—In the event of any delay as set forth in Section (b) herein, the Contractor may be entitled to an extension of the Contract Time only, and shall not be entitled to any additional payment on account of such delay. Without limiting the foregoing, except as otherwise specifically provided under Article 29, the Contractor shall not be entitled to payment or compensation of any kind from the Owner for direct, indirect or impact damages, including but not limited to costs of acceleration or extended home office overhead arising because of hindrance or delay from any cause whatsoever, whether such hindrances or delays be reasonable or unreasonable, foreseeable or unforeseeable, or avoidable or unavoidable.

(f) *Liquidated Damages.*—If the Contractor shall fail to perform the Work required within the Contract Time, or extended Contract Time if authorized by Change Order, then the Contractor shall pay Owner the full amount of liquidated damages specified in the Contract Documents for each calendar day that the Contractor shall be in default after the time stipulated in the Contract Documents shall have expired, and the Owner shall deduct such liquidated damages from the Contractor's monthly progress payment request.

**Article 29. - Changes in the Work.**—(a) *Owner's Right to Make Changes.*—The Owner without invalidating the Contract may authorize or order extra work or may authorize or order changes by altering, adding to, or deducting from the Work, the Contract Price or the Contract Time, or both, being adjusted accordingly. The Contractor hereby expressly agrees that the Contractor shall have no right to a claim for damages or extended overhead of any nature because of changes made by the Owner. Such Work is hereinafter designated "change" or "changes".

(b) *Field Orders.*—The Engineer may at any time, by issuing a field order, make changes in the details of the Work. These changes by field order will not affect Contract Time or Contract Price. The Contractor shall proceed with the performance of any such changes in the Work so ordered by the Engineer, unless the Contractor believes that such field order entitles Contractor to a change in Contract Price or Contract Time, or both, in which event Contractor shall give the Engineer immediate, written notice thereof and if required by the Owner, an immediate estimate of the direct cost of Work as outlined in Case (b) below, after the receipt of the ordered change, and the Contractor shall not execute such changes pending the receipt of an executed Change Order or further written instruction from the Owner.

(c) *Cost to Owner for Changes.*—The cost to the Owner of any change shall be determined in



one or more of the following ways:

CASE (a) By estimate and acceptance in a lump sum.

CASE (b) By unit prices identified in the Contract or subsequently agreed upon. Unit prices are net including overhead and profit. Neither establishment of unit prices in the Contract or later agreement to unit prices shall entitle the Contractor to execute any change under Case (b) prior to issuance of an authorization or order of the Owner in writing.

CASE (c) By force account, which is defined as expenditures allowed under Article 29(i) plus a percentage or percentages as stated under Article 29(i).

(d) *Changes Forbidden without Consent of Owner.*—Neither the Engineer or the Contractor shall make any change whatsoever in the Work without authorization or order of the Owner in writing except in emergency as described hereinbelow. The making of any change without authorization or order of the Owner in writing is a breach of contract except in emergency as referred to under Article 21 of the General Conditions. In the absence of authorization or order of the Owner given in advance in writing (except in emergency as referred to under Article 21 of the General Conditions) the Contractor shall have no claim for payment, repayment, reimbursement, remittance, remuneration, compensation, profit, cost, overhead, expense, loss, expenditure, allowance, charge, demand, hire, wages, salary, tax, cash, assessment, price, money, bill, statement, dues, recovery, restitution, benefit, recoupment, exaction, injury, damages or time based upon or resulting from any change.

(e) *Notice of demand of Contractor for extraordinary remuneration or for damages.*—For a change in the Work, the Contractor shall be entitled to no claim other than or in excess of allowances permitted under Article 29(i) unless prior to commencement of execution of the change (a) the Contractor shall have notified the Owner in writing of the nature of the claim and (b) the Owner shall have agreed in writing to the claim. Commencement of execution of a change authorized by the Owner in the absence of the aforesaid written notice from the Contractor and written agreement to the claim by the Owner shall be deemed to be and is conclusive proof that the Contractor acknowledges that it makes no claim other than or in excess of allowances permitted under Article 29(i).

(f) *Subsurface Conditions.*—Material below the surface of the ground is assumed to be earth and other material that can be removed by a backhoe or similar equipment. Should conditions encountered below the surface of the ground be at variance to conditions indicated by Drawings, Specifications, or geotechnical reports, and subject to Article 23 of the General Conditions, the Contract Price may be adjusted as provided in this Article for changes in the Work upon claim by either party made in writing within a reasonable time after the first observance of the conditions; PROVIDED, however, that the Contractor shall in any event give written notice to the Owner before proceeding to execute any change resulting from subsurface conditions; and PROVIDED FURTHER; that the Owner shall not be liable to the Contractor for any claim occasioned by the aforesaid subsurface conditions except in accordance with and pursuant to authorization of the

Owner issued in writing prior to commencement of execution of the aforesaid change to which authorization the Contractor shall have taken no exception. If exception to the authorization be taken by the Contractor, the Owner may issue an order pursuant to Article 29(i). Commencement of execution of work pursuant to Article 29(i) shall not exclude the recovery of damages by the Contractor under other Articles of the General Conditions, but the cost to the Owner for the changes executed pursuant to the aforesaid order shall not exceed the “net allowable expenditures” permitted to the Contractor under Article 29(i) plus the “allowance for overhead and profit” permitted under Article 29(i).

(g) *Rock.*—If rock, as hereinafter defined, is encountered, no claim for additional compensation for changes shall lie against the Owner in the absence of previous authorization by the Owner in writing, and the cost to the Owner for any changes shall be determined as provided in this Article. CAUTION: No rock for which extra compensation is expected to be received shall be removed except pursuant to and in conformity with a written authorization or order of the Owner. Shale, rotten stone, or stratified rock that can be loosened with a pick or removed by a backhoe or similar equipment shall not be classified as rock. Rock is defined as follows: any material which cannot be excavated with conventional equipment, and must be removed by drilling, chemical cracking, or blasting, and occupies an original volume of at least one-half cubic yard.

(h) *Existing Conditions.*—The Contractor in undertaking the Work under this Contract is assumed to have visited the premises and to have taken into consideration all conditions which might affect the Work. No consideration will be given any claim based on lack of knowledge of existing conditions except where existing conditions are such as cannot be readily ascertained. Any claims relating to conditions which were not readily ascertainable shall be adjusted as provided in this Article for changes in the Work.

(i) *Cost to Owner, Allowances for Contractor, and Allowable Expenditures.*—In Cases (a) and (c), above, the “allowance for overhead and profit” combined, included in the total cost to the Owner, shall be based upon the following schedule:

- (1) For the Contractor an allowance for Work which it performs with its own forces, not to exceed 16% of its “net additional allowable expenditures”, if any, for changes.
- (2) For a Subcontractor an allowance for Work which it performs with its own forces, not to exceed 16% of its “net additional allowable expenditures”, if any, for changes. A Subcontractor shall receive no allowance for overhead and profit on Work not performed by its own forces. Under these Contract Documents, the forces of a Sub-subcontractor of a Subcontractor are deemed to be and are the forces of the Subcontractor.
- (3) For the Contractor an allowance for Work performed by its Subcontractor, not to exceed 10% of the amount, if any, due the Subcontractor for changes.

The above percentages shall be applied to the “net additional allowable expenditures”, if any, as

limited and defined herein. If the net difference between “allowable expenditures” and savings results in a decrease in expenditures, the amount of credit allowed the Owner shall be the net decrease without any credit for profit and overhead. “Net additional allowable expenditures” as used herein shall mean the difference between all “allowable expenditures” and savings. The term “allowable expenditures” is limited to and defined as items of

- (1) Labor which is defined as the specific labor wages including a thirty percent (30%) markup on the cost of direct payroll wages. The Contractor shall furnish, if required by the Owner, certified payrolls to verify wages.
- (2) Material delivered and used on the designated Work, including sales tax, if paid for by the Contractor and as verified by original invoices or otherwise verifiable to the Engineer's acceptance.
- (3) Rental, or Ownership cost of equipment, including necessary transportation of equipment, having a purchase value in excess of \$300.00. Rental or Ownership cost will be allowed for only those hours during which the equipment is required on the Project site. Cost allowances will not exceed the rates defined as follows: the hourly rate, for equipment not used exclusively in the change to the scope of Work, will be the monthly rate, as printed in the current Rental Blue Book for Construction Equipment published by Dataquest, divided by 176; the rate, for equipment used exclusively for those tasks identified in the change to the scope of Work, will be the daily, weekly or monthly rate, used singularly or in combination, which will provide the lowest total cost. The rates will be modified by the Rate Adjustment Table factors to reflect a depreciation allowance indexed to the year a machine was originally manufactured and sold. The rates will be adjusted to account for regional differences in annual use hours, cost of labor, freight, taxes, etc. The amount by which basic rates will be increased or decreased is shown on the adjustment maps included in the “Blue Book”. The equipment use period will begin only at the time equipment is unloaded at the site of the changed Work; will include each day that the equipment is required at the site of the changed Work; and will terminate at the end of the day on which the use of such equipment becomes unnecessary, plus reasonable transportation time. The maximum time to be paid per day will not exceed eight hours unless the equipment is in operation for a longer time. The time which will be paid for per day for equipment not used exclusively in the change to the scope of Work, will be the hours which the equipment was actually in operation on the changed Work.
- (4) In cases where there is an extension of the Contract Time, *pro rata* expenditures for time of foremen employed in the direct superintendence of productive labor in execution of changes.

All expenditures not included in the term “allowable expenditures” as limited and defined in this Article shall be considered as overhead, including, but not limited to, bond premiums, supervision, travel (meals, transportation, and lodging), superintendence [except *pro rata* time of foremen as referred to herein], timekeepers, clerks, watchmen, hand tools, small tools, incidental job burdens,

engineering, drafting, and office expense. Any other provisions in the Contract Documents to the contrary notwithstanding, only demonstrable, direct, out-of-pocket expenditures for the changes plus percentages as set forth hereinabove shall be allowable for changes. No wages of a foreman shall be allowable for a change carried on concurrently with contract Work unless the claim includes a demand for extension of time caused by the authorizing or ordering of the change.

(j) *Execution of Changes Pursuant to Order.*—In the event neither Case (a) nor Case (b) can be mutually agreed upon as the method of determining the cost to the Owner for a change, the Contractor, provided it receives a written order from the Owner, shall proceed on force account under Case (c), and he shall keep and present in such form as the Engineer may direct a correct account of the expenditures together with vouchers. Allowable expenditures shall in no event exceed current costs for like services and materials, the burden of proof being on the Contractor.

(k) *Stipulated Maximum Sum.*—Under Case (b) and Case (c), the Owner shall prescribe the limits of any authorization or order for a change by means of an authorization or order in writing stipulating the maximum sum of money committed toward execution of the said change, and the Contractor shall have no authority to perform any change which will cost the Owner in excess of the stipulated maximum sum. It shall be solely the Contractor's responsibility *to apply in writing to the Owner, NOT [repeat NOT] to the Engineer*, for an enlargement of the scope of the authorization or order by an increase in the said stipulated maximum sum if during the course of the performance of a change on force account under Case (c) the additional cost of the change to the Owner as established in accordance with allowable expenditures and allowances for profit and overhead permitted under Article 29(i) is approaching, or may exceed, the said stipulated maximum sum. It shall likewise be the responsibility of the Contractor to apply for an enlargement of the scope of the authorization or order if the total value of units at any agreed unit price under Case (b) is approaching the said stipulated maximum sum. For changes in the Work no claim for payment, repayment, reimbursement, remittance, remuneration, compensation, profit, cost, overhead, expense, loss, expenditure, allowance, charge, demand, hire, wages, salary, tax, cash, assessment, price, money, bill, statement, dues, recovery, restitution, benefit, recoupment, exaction, injury or damages shall lie against the Owner for any amount in excess of such amount as shall have been mutually agreed to under Case (a) or in excess of such amount as shall have been established as the stipulated maximum sum under Case (b) or Case (c). The cost to the Owner for any change in the Work, except a change based upon agreed unit prices under Case (b), shall be established in accordance with the schedule of allowances and percentages stipulated under Article 29(i).

(l) *Breakdown of Expenditures.*—To accompany all Change Orders, the Contractor shall furnish a breakdown of expenditures for labor and materials by units and quantities in the form prescribed by the Owner, and the breakdown shall be accompanied by the following declaration: "I do solemnly swear, under criminal penalty, that the costs shown hereinabove do not exceed current costs for like services or materials and do not exceed the actual costs to the Contractor therefor, and that the quantities shown do not exceed actual requirements." For all force account changes, the Contractor shall promptly, and in no event later than thirty (30) days after receipt of written demand therefor, pursuant to Article 29(i) submit to the Engineer a complete, accurate, and final breakdown and account together with vouchers, showing all expenditures and percentages allowable under Case (c). For all unit price changes, the Contractor shall promptly, and in no event later than thirty

(30) days after receipt of written demand therefor, pursuant to Article 29(i) submit to the Engineer an accurate account of the quantity of Work performed under Case (b). In any case, the Engineer shall certify to the amount [including under Case (a) and Case (c) the allowance prescribed in the Contract for overhead and profit] due the Contractor. The Contractor shall obtain and furnish as back-up to the Contractor's breakdown a separate breakdown for each Subcontractor's charges prepared by each Subcontractor on the letterhead of the Subcontractor and properly signed by the Subcontractor.

(m) *Payment on Account.*—If the Contractor desires to obtain payment on account before any change in the Work has been completed, a Change Order certified by the Engineer and signed by the Contractor and the Owner must have been executed for so much of the change as has been completed at the time of the filing of the request for payment on account.

(n) *Form and Execution of Change Orders.*—Change Orders shall be recommended by the Engineer and signed by the Contractor and the Owner in accordance with the form of change order prescribed by the Owner. No request for payment of the Contractor for account of a change shall be due, nor shall any such request appear on a progress payment request or demand for final payment until (1) the Change Order shall have been certified by the Engineer and (2) a Change Order shall have been executed by the Contractor and the Owner.

(o) *Claims Distinguished from Changes.*— Claims for damages arising out of alleged negligence of the Engineer or Owner as provided for under Article 37 of the General Conditions are distinguished from claims for allowances for changes as provided for under Article 29. Claims for damages must be filed entirely separately pursuant to Article 37 of the General Conditions and claims for allowances for changes must be filed entirely separately pursuant to Article 29 unless the Contractor and Owner agree in writing otherwise.

(p) *Conditions Different from Those Indicated in Contract Documents.*—The parties contemplate delays necessary to complete tests, to redesign, and to perform change order Work in the event conditions encountered at the site are different from those indicated in the Contract Documents, or to perform change order Work to correct errors and omissions in the Drawings and Specifications. Execution of any change must be authorized. In such event there shall be an adjustment in the Contract Price as provided in the Contract for changes in the Work, but no claim for damages shall lie against the Owner for the aforesaid delays. Such delays are not a breach of contract because the parties contemplate such delays as a natural and probable consequence of construction operations. The parties agree that such delays constitute no wrong or injury, create no right to a claim for damages, and are not a ground for claiming extraordinary remuneration.

(q) *Unit Prices.*— The term “net” as used in reference to “unit prices” means in respect to Change Orders performed in accordance with Case (b) of Article 29 of the General Conditions that the unit prices offered by the Contractor and accepted by the Owner shall be inclusive of all sums for payment, repayment, reimbursement, remittance, remuneration, compensation, profit, cost, overhead, expense, loss, expenditure, allowance, charge, demand, hire, wages, salary, tax, cash, assessment, price, money, bill, statement, dues, recovery, restitution, benefit, recoupment, exaction, or injury. Upon request of the Owner in writing and within such reasonable space of time as the

Owner shall designate in writing, the Contractor shall submit for consideration of the Owner proposals in writing for unit prices to be applied in the event Work is authorized by the Owner to be performed under Case (b) of Article 29. Under penalty of false swearing, a principal of the contracting firm shall certify that the unit prices submitted do not exceed current costs for like services or materials.

(r) *Combining Small Change Orders.*—The Owner may, with the Contractor’s concurrence, elect to postpone the issuance of a Change Order until such time that a single Change Order of substantial importance can be issued incorporating several changes. In such cases, the Owner will indicate this intent for each change in the Contract in a written notice to the Contractor, following agreement by the Owner and Contractor on the scope, price and time, if any, of the change.

(s) *Changes in the Contract Time.*—The Contract Time may be changed only by a Change Order. Changes in the Work described in section (a) of this Article and any other claim made by the Contractor for a change in the Contract Time will be evaluated by the Engineer and if the conditions warrant, an appropriate adjustment of the Contract Time will be made. The Engineer, when making these evaluations will take into consideration the amount and scope of Work which has been changed and will evaluate if the change in Work has affected the Critical Path as currently accepted on the Progress Schedule such that it would delay the completion of the Project. If after these evaluations have been made, and in the sole opinion of the Engineer the Contractor is due an extension of the Contract Time, then it will be granted by a Change Order. Extensions of the Contract Time granted as a result of weather will not result in a change in Contract Price.

(t) *Effect of Executed Change Order.*—The execution of a Change Order by the Contractor shall constitute conclusive evidence of the Contractor’s agreement to the ordered changes in the Work, the Contract as thus amended, the Contract Price and the Contract Time. The Contractor, by executing the Change Order, waives and forever releases any claim against the Owner for additional time or compensation for matters relating to or arising out of or resulting from the Work included within or affected by the executed Change Order. The foregoing waiver and release expressly includes, without limitation, claims for additional compensation or time based on the theory that the Contractor has suffered so-called “impact” damage attributable to the effect of change order Work on other change orders Work or on unchanged Work.

**Article 30. - Payments and Completion.**—(a) *Contract Price.*— The Contract Price is either a lump sum or the sum of the unit prices stated in the Contract Agreement, for each item multiplied by the actual quantities installed of each item, and is the total amount payable by the Owner to the Contractor for the performance of the Work set forth in the Contract Documents. It is understood that the Contractor shall provide and pay for all products, labor, (including labor performed after regular working hours, on Sundays, or on legal holidays), equipment, tools, water, light, power, sewer, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, place into operation, and deliver the Work.

(b) *Application for Payment and Receipts.*—The Contractor shall submit to the Engineer in accordance with a form to be supplied by the Owner an application for each monthly progress

payment, and, if requested by the Owner or Engineer, receipts or other vouchers, showing his payments for materials and labor, including payments to Subcontractors as required by Article 10 of the General Conditions.

(c) *Progress Payments.*—If progress payments are made on valuation of Work done, such complete application shall be submitted to the Engineer at least twenty (20) days before payment falls due. In applying for payments, the Contractor shall submit a statement based upon the Schedule of Values on a progress payment form to be supplied by the Owner, and, if requested by the Engineer or Owner, itemized in such form and supported by such evidence as the Engineer or Owner may direct showing the Contractor's right to the payment claimed.

(d) *Materials stored.*—Application for payment may include, at the Contractor's option, the cost of products not yet incorporated into the Work which have been delivered to the site or to other storage locations authorized and approved by the Engineer. The Owner reserves the right to accept or reject pay requests for stored materials, and to limit payments to those stored materials which, in the Engineer's judgment, are necessary for continuing satisfactory Project progress.

Payment for stored products will be subject to the following conditions being met or satisfied:

- (1) The products shall be received in a condition satisfactory for incorporation in the Work, including manufacturer's storage and installation instructions;
- (2) The products shall be stored in accordance with the manufacturer's recommendations and in such manner that any and all manufacturer's warranties will be maintained and that they will not be damaged due to weather, construction operation, or any other cause;
- (3) An invoice from the manufacturer shall be furnished for each item on which payment is requested. The request may include reimbursement for cost of delivery, limited to common carrier rates, to the site, but will not include the Contractor handling, on or off site, or for storage expense;
- (4) The Contractor shall, on request of the Engineer, furnish written proof from the supplier of payment (less retention equal in percentage to that being retained by the Owner) for the products no later than 30 days after receipt of payment for same from the Owner. The Owner will have the right to deduct from the next payment estimate an amount equal to the payment for products if reasonable and adequate proof is not submitted; and,
- (5) Shop drawings, product data and samples, showing "No Exceptions Taken", have been received from the Contractor for that specific equipment or material.

(e) *Operating Test Period.*—Upon receipt of written notice from the Contractor that the Work is ready to be placed into service for the operating test period, the Engineer will, within a reasonable time, inspect the Work. Prior to initiating the operating test, Work required by the

Contract Documents must be in place and operable as determined by the Engineer, which includes, but is not limited to the following:

- (1) Pressure testing all lines as required in the Specifications;
- (2) Making adjustments of manhole rims;
- (3) Performing functional tests and providing manufacturers' required certification as specified;
- (4) Removing temporary plugs, bulkheads, bypasses, etc., and diverting flow into the facility when directed by the Engineer; and,
- (5) All painting, grassing and restoration of the Work area, provided the Work area is not part of another segment not yet in the 30-day operating test period.

When the Engineer finds the Work of the Contractor ready for initiation of the operating test period, the Engineer will recommend to the Owner that the operating test period begin.

Certain segments of the Work, whether new or existing to be modified, may need to be placed in service prior to completion of the entire Project. Prior to placing these segments in operation, the requirements above, which pertain to the operating test period, must be complete for each segment.

The operating test period begins upon written notification from the Owner and runs for a period of 30 days. During this period, the Contractor shall complete all remaining items of Work, make adjustments found to be necessary, and ensure that all equipment and systems are, and continue, to function properly. The beginning of the operating test period initiates the Owner's responsibility for providing chemicals, power, and operating personnel. The Contractor retains responsibility for maintaining equipment until acceptance by the Owner. The segments to be placed into service prior to completion of the entire Project will be determined solely by the Engineer or the Owner.

(f) *Conditions Precedent to Application for Final Payment.*—ALL WORK REQUIRED BY THE CONTRACT DOCUMENTS MUST BE COMPLETED BEFORE THE FINAL INSPECTION IS PERFORMED. This includes, but is not limited to, the following:

- (1) Performing infiltration and pressure tests as described in the detailed Specifications;
- (2) Removing temporary plugs, bulkheads, bypasses, etc.;
- (3) Flushing all lines with potable water furnished by Contractor;
- (4) Pressure testing all lines as required in the Specifications;
- (5) Demonstrating the operation of all valves;



- (6) Providing specified instruction for the Owner's personnel;
- (7) Disinfecting all water mains as required in the Specifications; and,
- (8) Grassing and restoration of the Work area.

(g) *Notification of Readiness for Final Inspection.*—When all conditions precedent for the application have been completed, the Contractor shall submit completed Record Drawings to the Engineer and give notice to the Engineer in accordance with Article 5 of the Contract Agreement with a copy to the Owner in the following words:

The work on the Contract for the **Water Main Road Relocation SR 87 / Riverside Drive at Arkwright Road, GDOT PI 0015692** having been fully completed except as stipulated hereinbelow, it is requested that a final inspection be made promptly by the Engineer in accordance with Article 5 of the Contract Agreement. The following Work is incomplete through no fault of the Contractor:

No final inspection shall be made until such time as the Engineer has received a letter in the exact form indicated above and a copy thereof has been received by the Owner. In the event the Contractor shall have issued the "Notice of Readiness for Final Inspection" prematurely [hereinafter referred to as "false start"] he shall be liable for the damage resulting from the aforesaid false start including but not limited to the salaries, professional fees, and travel and living expenses of the persons or parties inconvenienced by the aforesaid false start. The Contractor acknowledges and agrees that he has an indivisible, non-delegable, and non-transferable contractual obligation to the Owner to make its own inspections of the Work at all stages of construction; and the Contractor shall supervise and superintend performance of the Contract in such manner as to enable it to confirm and corroborate at all times that all Work has been executed strictly, literally, rigidly, and inflexibly in accordance with the methods and materials designated in the Contract Documents so that (a) its certifications on periodical estimates shall be true and correct and (b) its notice of readiness for final inspection shall be true and correct. Accordingly, the Contractor agrees that it may not defend or excuse any deviation from the Contract Documents on the ground (a) that the deviation was not brought to its attention by another person or party or other persons or parties or (b) that a Subcontractor is, or Subcontractors are, at fault.

(h) *Final Acceptance.*—If the Engineer finds the Work of the Contractor complete and acceptable in accordance with the provisions of the Contract Documents and that the Record Drawings accurately depict the complete Work, the Engineer will recommend to the Owner that the Project be accepted and that final payment be made. In the event that the final inspection reveals deficiencies in meeting the Contract requirements, the Contractor shall complete all remaining items of Work, and make adjustments found to be necessary. Upon receipt of written notice from the Contractor that the Work is complete and ready for re-inspection, the Engineer will make another final inspection. The Contractor will be notified, in writing, by the Owner of the final acceptance of the Work. The date of final acceptance shall be the beginning of the warranty period.

- (i) *Liens.*—Neither the final payment or any part of the retained percentage shall become due

until the Contractor has furnished the Owner proper and satisfactory evidence (under oath if required) that all claims for labor employed and materials used in the construction of the Work under this Contract have been paid, satisfied or waived, and that no claims can be filed against the Owner for such labor or materials. If required, the Contractor shall deliver to the Owner a complete release of all liens or claims arising out of this Contract, and an affidavit that so far as it has knowledge or information the releases include all labor and materials for which a lien or claim could be filed; provided, however, that the Contractor may, if any Subcontractor or claimant refuses to furnish a release, furnish a bond satisfactory to the Owner to indemnify the Owner against any lien or claim. If any lien or claim remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all moneys that the Owner may be compelled to pay in discharging such lien or claim, including all costs and a reasonable attorneys' fees.

(j) *Compliance with O.C.G.A. §§ 13-10-80 and 13-10-81.*—For purposes of O.C.G.A. § 13-10-80(b) the term “substantial completion of the Work” shall mean that “the Work has been satisfactorily completed and is accepted in accordance with the Contract Documents.” If upon completion of the second “final” inspection provided for in subsection (g) of this Article there are still remaining (i) any disputed indebtedness or (ii) if there are liens upon the property, or (iii) there are any items of Work uncompleted which in the opinion of the Engineer are “incomplete items” within the meaning of O.C.G.A. §§ 13-10-80(b)(2)(B) and/or 13-10-81(c), an amount equal to two hundred percent (200%) of each such item of indebtedness, lien or uncompleted Work as determined by the Engineer shall be withheld until such item or items are paid, settled or completed and the remaining retainage shall be paid to the Contractor.

**Article 31. - Certificates of Payment.**—(a) *Issuance.*—If the Contractor has made application for payment as provided under Article 30, the Engineer shall not later than the date when each payment falls due issue to the Owner a certificate for such amounts as he decides to be properly due or state in writing his reasons for withholding a certificate.

(b) *Warranty of Title.*—The Contractor warrants that title to all Work and products covered by a Certificate of Payment, whether incorporated into the Project or not, will pass to the Owner upon the receipt of such payment by the Contractor, free and clear of all liens, claims, security interests or encumbrances except retention equal in percentage to that being retained by the Owner.

(c) *Effect.*—No Certificate issued, or payment made to the Contractor, or partial or entire use of occupancy of the Project by the Owner shall be an acceptance of any Work or materials not in accordance with the Contract Documents. The making of the final payment shall constitute a waiver of all claims by the Owner other than those arising from unsettled liens, from faulty work appearing after final payment, or from the requirements of the Contract Documents, including but not limited to the provisions of Article 5, Hazards and Indemnification, of these General Conditions. Acceptance of the final payment shall operate as and shall be a release by the Contractor to the Owner from all claims of any kind or character arising out of or related to the Contract except for such specific amount or amounts as may have been withheld to cover the fair value of any incomplete Work which has been certified by the Engineer under the provision of Paragraph (d) of Article 5 of the Contract Agreement as incomplete through no fault on the part of the Contractor.

(d) *Date and Rate of Payment.*—Progress payments will be made by the Owner to the Contractor in accordance with Article 4 of the Contract Agreement. Final payment will be made in accordance with Article 5 of the Contract Agreement. The date and rate of payment are subject to Article 32 of the General Conditions. Sums retained pursuant to this Article are and remain the property of the Owner until such time as the Contractor shall have become entitled to receive payment of such retainage by complying with the full terms of the Contract Documents.

(e) *Delays in Making Payments.*—The date on which any progress payment is due shall be extended for such period of time as may be necessary in the determination of the Engineer for the Contractor to remedy any incorrect or incomplete application for payment.

(f) *Interest.*—Should the Owner fail to pay the sum named in any certificate of the Engineer when due, the Contractor shall receive, in addition to the sum approved in the certificate, simple interest thereon at the legal rate; PROVIDED, however, that the Contractor shall have given the Owner written notice of the date on which payment was properly due, and no interest shall be payable if the Owner makes payment when due or within three days after receipt of the aforesaid notice from the contractor. Such notice shall be in writing, and shall set forth:

- (1)— A short and concise statement that interest is due pursuant to this Article;
- (2)— The principal amount of the progress or final payment which is allegedly due to the Contractor; and,
- (3)— The first day and date upon which the Contractor alleges that interest will begin to accrue, pursuant to this Article.

(g) *Integration with the Prompt Pay Act.*—The provisions of the Contract Documents with respect to time limits for payments, grounds for withholding payment, conditions authorizing payments, and interest on late payments shall supersede all provisions of the Georgia Prompt Pay Act, as originally enacted or as amended, and any dispute arising between the parties hereto as to whether or not the provisions of this Contract or the Georgia Prompt Pay Act control will be resolved in favor of the terms of these Contract Documents.

**Article 32. - Payments Withheld.**—The Engineer may withhold or, on account of subsequently discovered evidence, nullify the whole or a part of any certificate to such extent as may be necessary to protect the Owner from loss on account of:

- (a)—Defective work not remedied;
- (b)—Claims filed or reasonable evidence indicating probable filing of claims;
- (c)—Failure of the Contractor to make payments properly to Subcontractors or for materials or labor;
- (d)—A reasonable doubt that the Project can be completed for the unpaid balance of the Contract Price.

- (e)—Damage to another Contractor or to some third party;
- (f)—Failure to maintain a rate of progress in accordance with the currently approved construction progress schedule;
- (g)—Failure to supply enough skilled workers or proper materials; or,
- (h)—Failure to complete all Work within the Contract Time.

When the above grounds are removed, the Engineer shall issue to the Owner a certificate for such withheld amounts as he determines to be properly due, and the Owner shall pay such amounts within ten (10) days. At the option of the Owner adherence to the construction progress schedule shall be a condition precedent to the right of the Contractor to demand payment of a progress payment. No omission on the part of the Owner to exercise the aforesaid option shall be construed to be a waiver of breach of the construction progress schedule or acquiescence therein, and the Owner may exercise its option from time to time as often as may, in its judgment, be expedient.

**Article 33. - Notice of Commencement.**—See Notice to Proceed, as used throughout these General Conditions.

**Article 34. - Correction of Work after Final Payment.**—Neither (1) the final certificate, (2) or any decision of the Engineer, (3) or payment, (4) or any provision in the Contract shall relieve the Contractor of responsibility for faulty materials, faulty workmanship, or omission of Work required by the Contract Documents, and the Contractor shall remedy any defects or supply any omissions resulting therefrom and pay for any damage to other Work resulting therefrom. The Owner shall give notice of observed defects or omissions with reasonable promptness. The Contractor shall within the time designated in orders of condemnation and without expense to the Owner, correct, remedy, replace, re-execute, supply omitted Work, or remove from the premises all Work condemned by the Engineer. The Contractor shall give prompt notice in writing to the Engineer, with copy to the Owner, upon completion of the supplying of any omitted Work or the correction of any Work condemned by the Engineer. In the absence of said notice, it shall be and is presumed under this Contract that there has been no correction of the condemned Work or supplying of omitted Work. If the Contractor does not remove, make good the deficiency, correct, or remedy faulty Work, or supply any omitted Work within the time designated in orders of condemnation without expense to the Owner, the Owner, after ten (10) days' notice in writing to the Contractor, may remove the Work, correct the Work, remedy the Work or supply omitted Work at the expense of the Contractor. In case of emergency involving health, safety of property, or safety of life the Owner may proceed at once. Correction of defective Work executed under the Contract Documents or supplying of omitted Work, whether or not covered by warranty of a Subcontractor or materialmen, remains the primary, direct responsibility of the Contractor. The foregoing obligation of the Contractor shall remain in effect until the same shall have been extinguished by operation of the statute of limitations.

As additional security for the fulfillment of such obligation, but in no way limiting the same, the Contractor warrants and guarantees (1) that all work executed under the Contract Documents shall

be free from defects of materials or workmanship for a period of one year from the notice of final acceptance of the Work by the Owner, and (2) that for not less than one year from such final acceptance, or for such greater time as may have been designated in the Contract Documents, products of manufacturers shall be free from defects of materials and workmanship. Whenever written guaranties or warranties are called for, the Contractor shall furnish the aforesaid for such period of time as may be required. The aforesaid instruments shall be in such form as to permit direct enforcement by the Owner against any Subcontractor, materialmen, or manufacturer whose guaranty or warranty is called for, and the Contractor agrees that:

- (a) The Contractor is jointly and severally liable with such Subcontractors, materialmen, or manufacturers;
- (b) The said Subcontractors, materialmen, or manufacturers are agents of the Contractor for purposes of performance under this Article, and the Contractor, as principal, ratifies the warranties or guaranties of his aforesaid agents by the filing of the aforesaid instruments with the Owner. The Contractor as principal is liable for the acts or omissions of his agents;
- (c) Service of notice on the Contractor that there has been breach of any warranty or guaranty will be sufficient to invoke the terms of the instrument; provided, however, that the Owner shall have furnished the Contractor with a copy of notice served on the Subcontractor, materialmen, or manufacturer; and,
- (d) The Contractor will bind his Subcontractor, materialmen, and manufacturers to the terms of this Article.

The calling for or the furnishing of written warranties shall in no way limit the contractual obligation of the Contractor as set forth hereinabove. The remedies stated in this Article are in addition to the remedies otherwise available to the Owner, do not exclude such other remedies, and are without prejudice to any other remedies.

**Article 35. - Cash Allowances.**—The Contractor shall include in the Contract Price all cash allowances named in the Contract Documents and shall cause the Work thus covered to be done by such contractors or firms and for such sums as the Engineer may direct, the Contract Price being adjusted in conformity therewith. The Contractor declares that the Contract Price includes such sums for overhead and profit on account of cash allowances as he deems proper. No demand for overhead and profit other than those included in the Contract Price shall be allowed. The Contractor shall not be required to employ for any such Work persons against whom he has a reasonable objection.

**Article 36. – Contractor’s Warranty as to Performance.**—The Contractor warrants that it is familiar with the codes applicable to the Work and that it has the skill, knowledge, competence, organization, and plant to execute the Work promptly and efficiently in compliance with the requirements of the Contract Documents. The Contractor having the obligation to keep a competent superintendent engaged on the Work during its progress, to employ only skilled mechanics, and to

enforce strict discipline and good order among its employees, the Contractor, itself, is responsible for seeing that the Work is installed in accordance with the Contract Documents. Failure or omission on the part of the Owner, representatives of the Owner, agents of the Owner, resident engineer inspector, clerk-of-the-works, engineers employed by the Engineer, representatives of the Engineer, or the Engineer either to discover or to bring to the attention of the Contractor any deviation from, omission from, or noncompliance with the Contract Documents shall not be asserted by the Contractor as a defense for failure on the Contractor's part to install the Work in accordance with the Contract Documents or for any other neglect to fulfill requirements of the Contract; nor shall the presence of any one, or all, or any of the foregoing at the site or the fact that any one, or all, or any of the foregoing may have examined the Work or any part of it be asserted as a defense by the Contractor against a claim for failure on its part to install the Work in accordance with the Contract Documents or for any neglect to fulfill requirements of the Contract. No requirement of this Contract may be altered or waived except in pursuance of a written order of the Owner and in strict accordance with the provisions in the Contract for changes in the Work.

**Article 37. - Claims.**—(a) *Extra Cost.*—If the Contractor maintains that any instructions by drawings or otherwise involve extra cost to the Owner under this Contract, the Contractor shall give the Owner and the Engineer written notice thereof within a reasonable time after the receipt of such instructions, and in any event before proceeding to execute any change except in emergency endangering life or property. The allowances to the Contractor shall then be as provided under Article 29 of the General Conditions. No claim for extra cost shall be valid unless so made.

(b) *Protest.*—All references to arbitration are deleted from the Contract Documents. Decisions of the Engineer shall be rendered in all cases as provided for under the General Conditions of the Contract, but no decision of the Engineer shall deprive the Owner or the Contractor of any form of redress which may be available under the laws of the State of Georgia to contracting parties. Any decision of the Engineer shall be final and binding on the Contractor in the absence of written notice of protest from the Contractor received by the Owner by registered mail within twelve (12) days of the date of the decision of the Engineer. The Owner shall have twelve (12) days from the date of receipt of a protest within which to investigate and make a reply. There is no provision under the Contract for execution of work “under protest”. A protest must contain (1) the date of the decision of the Engineer to which exception is taken, (2) a statement of the issue or issues, (3) a citation of the provision or provisions of the Contract Documents which govern the issue or issues, (4) a summary of the logical principle or principles on which the protest is based, and (5) a summary of the legal grounds for taking exception. Filing a written notice of protest shall not be grounds for an extension of the Contract Time.

(c) *Shall be Based on the Legal Assertions of the Contractor.*—The Contractor shall assert claims solely on the basis of (a) principles of logic and (b) principles of law to which the Contractor, itself, has prescribed. The Contractor shall not protest a decision or request a conference on the ground merely that a Subcontractor, materialmen, or supplier has protested to the Contractor. Accordingly, the Contractor shall neither file a claim or make a request for a conference with the Owner regarding a claim except as it shall be for the purpose of asserting in the exercise of the Contractor's best judgment such views, requests, and legal propositions as he deems the Contractor

is entitled to maintain independently of any right of any Subcontractor, materialmen, or supplier against the Contractor.

(d) *Conference with the Owner.*—

(1) *Effect of.*—The Owner has no legal obligation to confer orally with the Contractor about the terms of the Contract or its performance and may insist that all transactions and all intercourse shall be in writing. Agreement of the Owner to confer with a Contractor shall not be construed as an offer of the Owner to reconsider or alter the Owner's policies, practices, procedures, or prior position, and no such agreement shall constitute a waiver of any right or defense of the Owner. Such a conference is without prejudice to any rights or defense of the Owner. After the conference there will be nothing to confirm since the Owner does not engage itself to do or not to do a thing by agreeing to confer with the Contractor. It is expressly agreed that no conference between the Contractor and the Owner shall cure any failure of the Contractor to give any notice nor shall it cure any breach of any time limit or revive any right in the Contract.

(2) *Conditions precedent to.*—A proposal from the Contractor for a conference in respect to (a) a dispute, (b) a controversy, or (c) an interpretation or construction of any provision of the Contract Documents shall contain (a) a statement of the issue or issues, (b) a citation of the provisions of the Contract Documents which govern the issue or issues, (c) a precise summary of the logical principle or principles on which the issue or issues are based, and (d) a summary of the legal grounds which the Contractor takes with respect to the issue or issues.

(3) *Basis for and Terms of.*—All conferences between the Owner and the Contractor shall be pursuant to, under the terms of, and in accordance with this Article of the General Conditions.

**Article 38. - Use of Premises.**—The Contractor shall confine its equipment, apparatus, the staging and storage of materials, the operations of its forces, and the Work to limits indicated by law, ordinances, permits, or the Contract Documents and shall not unreasonably encumber the premises with materials. The Contractor shall not load or permit any part of the Work to be loaded with weight that will endanger its safety. The Contractor shall enforce the Engineer's instructions regarding signs, advertisements, fires, and smoking.

**Article 39. - Specification Arrangement.**—The Specifications are separated into numbered and titled divisions for convenience of reference. Neither the Owner nor the Engineer assumes any responsibility for defining the limits of any subcontracts on account of the arrangement of the Specifications. Notwithstanding the appearance of such language in the various divisions of the Specifications as, "The Mechanical Contractor", "The Electrical Contractor", "The Roofing Contractor", etc., the Contractor is responsible to the Owner for the entire Contract and the execution of all of the Work referred to in the Contract Documents.

**Article 40. - Valuable Material, Geological Specimens.**—If during the execution of the Work the Contractor, any Subcontractor, or any servant, employee, or agent of either should uncover any valuable material or materials such as, but not limited to, treasure, geological specimen or specimens, archival material or materials, or ore, the Contractor acknowledges that title to the foregoing is vested in the Owner. The Contractor shall notify the Owner upon discovery of any of the foregoing, shall guard it, and shall deliver it promptly to the Owner. The Contractor agrees that the Geologic and Water Resources Division of the Georgia Department of Natural Resources may inspect the Work at reasonable times consistent with the convenience of the Contractor.

**Article 41. - Definitions.**—(a) *Applicable Law.*—This Contract shall be governed by the law of Georgia.

(b) *Article Not Plenary.*—This Article is not entire, plenary, or exhaustive of all terms used in the General Conditions which require definition. There are definitions of other terms under Articles to which the terms are related.

(c) *Balanced Bid.*—Balanced Bid shall mean a Bid in which each of the unit prices and total amount bid for each of the listed items reasonably reflects the value of that item with regard to the entire Project considering the prevailing cost of labor, material and equipment in the relevant market. A Bid is unbalanced when, in the opinion of the Owner, any unit prices or total amounts Bid on any of the listed items do not reasonably reflect such actual values.

(d) *Change Order Form.*—The Change Order Form is the instrument by which adjustments in the Contract Price and Contract Time are effected pursuant to changes made in accordance with Case (a), Case (b) or Case (c) of Article 29 of the General Conditions or in accordance with Subparagraph (i) of Article 29 of the General Conditions. The Change Order Form shall be accompanied by a breakdown in the form prescribed in a specimen, which the Owner will supply to the Contractor. The Engineer shall certify to the amount of the adjustment. The Change Order Form shall be signed by the Contractor and the Owner. The breakdown is only for the purpose of enabling the Engineer and the Owner to make a judgment on the dollar amount of the adjustment in the Contract Price. No condition, term, qualification, limitation, exception, exemption, modification, or proviso shall appear in the breakdown. The breakdown shall be in the exact form and language of the above-mentioned specimen. In the event any condition, term, qualification, limitation, exception, exemption, modification, or proviso shall appear in a breakdown, it shall be invalid.

(e) *Contract; Contract Documents.*—The terms Contract and Contract Documents include the Invitation to Bid, Instructions to Bidders, Contractor's Bid (including all documentation accompanying the Bid and any post-Bid documentation required by the Owner prior to the Notice of Award), the Contract Agreement, Bonds, all Special Conditions, General Conditions, Supplementary Conditions, Specifications (Divisions 01 through 46, inclusive), Drawings, and Addenda, together with written amendments, Change Orders, field orders and the Engineer's written interpretations and clarifications issued in accordance with the General Conditions on or after the date of the Contract Agreement. Shop drawing submittals reviewed in accordance with the General Conditions, geotechnical investigations and soils reports, and drawings of physical



conditions in or relating to existing surface or subsurface structures at or contiguous to the site are not Contract Documents.

(f) *Contract Time.*—Contract Time shall mean the number of consecutive calendar days as provided in the Contract Agreement for substantial completion of the Project, to be computed from and including the date of the Notice to Proceed. All time limits stated in the Contract Documents or shown on the construction progress schedule are of the essence of the Contract.

(g) *Contractor.*—The Contractor shall mean the party identified in the Contract Agreement and its authorized and legal representatives.

(h) *Cross-reference and Citations of Articles and Paragraphs of the General Conditions.*—Cross-references and citations of Articles and paragraphs of the General Conditions are for the convenience of the Contractor, Engineer and the Owner, and are not intended to be plenary or exhaustive nor are they to be considered in interpreting the Contract Documents or any part of the Contract Documents.

(i) *Engineer.*—The Engineer shall mean Carter Engineering Group, LLC.

(j) *Furnished by Owner.*—Furnished by Owner shall mean that the Owner shall pre-purchase specific products and have them delivered to a place mutually agreed upon by the supplier, the Owner and the Contractor, at no cost to the Contractor. In connection with an item furnished by the Owner, “Install” shall mean to take delivery of the item, off-load and transport to the job site, store as necessary and install according to the Drawings and Specifications.

(k) *Install, Deliver, Furnish, Supply, Provide.*—Such words mean the work in question shall be put in place by the Contractor ready for occupancy and use, unless expressly provided to the contrary.

(l) *Liquidated Damages.*—Liquidated Damages shall mean the sum stated in the Contract Agreement which the Contractor agrees to pay for each consecutive calendar day beyond the Contract Time required to achieve substantial completion of the Project. Liquidated Damages will end upon written notification from the Owner that the Project is ready for initiation of the Operating Test Period for the total Project.

(m) *Meaning of words and phrases.*—Unless the context or the Contract Documents taken as a whole indicate to the contrary, words used in the Contract Documents that have usual and common meanings shall be given their usual and common meanings and words having technical or trade meanings shall be given their customary meaning in the subject business, trade or profession.

(n) *Notices.*—Unless otherwise provided in the Contract Documents, written notice shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered or sent by certified mail to the last business address known to the party that gives notice.

(o) *Notice to Proceed.*—The Notice to Proceed is a written notice from the Owner pursuant to which the Contractor shall commence physical work on the Project site. A Notice to Proceed is a condition precedent to the execution of any Work on the site by the Contractor.

(p) *Order of Condemnation.*—An Order of Condemnation shall be in writing, shall be dated, shall be signed by the Engineer, shall be addressed to the Contractor with a copy to the Owner, and shall contain three elements as follows:

FIRST ELEMENT: Description of Work

- (1) which has been omitted or
- (2) which is unexecuted as of the date of the Order of Condemnation, the time for its incorporation into the Work under the construction progress schedule having expired, or
- (3) which has not been executed in accordance with the methods and materials designated in the Contract Documents.

SECOND ELEMENT: Citation of the provision or provisions of the Contract Documents which has or have been violated.

THIRD ELEMENT: Fixing of a reasonable time within which the Contractor shall have made good or remedied the deficiency which said time shall not be deemed to be an extension of Contract Time or deemed to be authorization for amendment to the construction progress schedule.

An Order of Condemnation may be issued for failure of the Contractor to supply enough workers or enough materials or proper materials, the Order of Condemnation in such event being based on Article 28 of the General Conditions and upon the definition of Work as set forth under Article 41(u).

(q) *Owner.*—The Owner shall mean THE MACON WATER AUTHORITY or its authorized and legal representatives.

(r) *Products.*—Products shall mean materials or equipment permanently incorporated into the Work.

(s) *Specifications.*—The term “Specifications” shall include all written matter in the bound volume (Divisions 01 through 46, inclusive) or on the drawings and any addenda or modifications thereto.

(t) *Subcontractor.*—The term Subcontractor as employed herein includes only those having a direct contract with the Contractor. It includes one who furnishes labor and materials which are incorporated into the Work but does not include one who merely furnished materials incorporated into the Work by the labor of others.

(u) *Work; Project.*—The terms Work and Project shall mean the entire completed construction required to be furnished under the Contract Documents.

END OF SECTION

## SECTION 00800

**SUPPLEMENTARY CONDITIONS****GENERAL** (Example, if any conditions exist)

The provisions in these Supplementary Conditions shall govern in the event of any conflict between the General Conditions and the provisions herein.

**Policy “A”.** – Compaction Tests and Shop Drawing Submittals

Please contact Mr. Joel Herndon, the Macon Water Authority’s (the “Owner’s”) Chief Inspector, at 478.464.5639 before commencing the construction activity. Compaction tests, where required, shall be performed in accordance with Macon Water Authority’s policy. The Contractor and the soil testing laboratory shall contact Mr. Herndon before the testing. The location at which the tests are performed will be decided by our inspection crew. The test report shall be submitted to the Engineering Division before the Owner can accept the Project for operation and maintenance. The Contractor shall submit five (5) copies of the shop drawings (ductile iron pipe, gate valve, valve box, ductile iron fittings, fire hydrant, manholes, manhole frames and covers, gravity sewer pipe, support structures, appurtenances, etc.) before installation. The Contractor will not be permitted to install materials and appurtenances until all the shop drawings are approved. The Contractor shall submit two copies of as-built drawings after the completion of construction but before the Project is accepted for operation and maintenance. The as-built drawings shall include the following for water/sewer portion of the Project: location of water main, valves, fire hydrants, fittings, water services to each lot, location of sewer mains, manholes (including rim and invert elevations), distance and angle between manholes, distance and length of each lateral from manholes, location of water main, gate valves, fire hydrants and fittings, width of easements and any other pertinent information.

Note: See Section 01720 for additional requirements.

**Policy “B”.** – Televising: NOT USED

**Policy “C”.** – As-Built: Produce and submit “AS-BUILT” survey of the generator, electrical lines to and from transfer switch, and any other underground utilities that were encountered during the installation. As-Built shall be prepared by a licensed Professional Engineer or Georgia Registered Land Surveyor, as appropriate for the project, and shall be submitted before the project is accepted by the Owner for operation and maintenance and before any project plat is signed.

**Policy “D” – Payment Estimate Form** – The Contractor shall generate an EXCEL spreadsheet listing all items in the Proposal and columns for quantities this period, total this period, total quantities to date, and total amount to date for a detail backup for the attached pay estimate summary sheet.

The As-Built drawings shall be submitted in either the (.dxf) or the (.dwg) version DWG 2010 or later on a USB Flash Drive, along with two (2) sets of plans in the same format as shown on the drive. The As-Built drawings shall be submitted on a (24” x 36”) sheet. The vertical and horizontal accuracy of the as-builts shall be within 0.1-foot accuracy.

All relative information such as right-of-way, property corners, state plane monuments, etc. shall be located and tied to Georgia State Plane Coordinates.

- **Project Milestone & Scheduling-** It is the desire of the Owner to complete this Project within the Contract Time allocated in the Contract Documents.

**MWA PAY ESTIMATE FORM – ON NEXT PAGE**

END OF SECTION

## Material Pick-up Acknowledgement

***Macon Water Authority***

790 Second Street P.O. Box 108  
Macon GA 31202  
Phone: (478) 464-5600  
Fax: (478) 738-3864

Project Name: \_\_\_\_\_

Project Engineer: \_\_\_\_\_

Project Manager: \_\_\_\_\_

---

**Itemized List of the Materials:**

Material Description	Size (if applicable)	Length (if applicable)	Quantity
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

I understand and acknowledge by receipt of the Materials listed, that:

These Materials furnished by the Macon Water Authority have been inspected thoroughly by me prior to transport to the project location; and that Materials in transport to the project location become the sole responsibility of my company.

\_\_\_\_\_  
(Print Contractor's Company Name)

Date: \_\_\_\_\_

By: \_\_\_\_\_  
(**Signature** of Authorized Representative - *person picking up the materials*)

Print Name: \_\_\_\_\_

---

By: \_\_\_\_\_ Date: \_\_\_\_\_  
MWA-Warehouse Manager or MWA-Authorized Representative



## PAY ESTIMATE Summary Sheet

### ***Macon Water Authority***

790 Second Street P.O. Box 108  
Macon GA 31202  
Phone: (478) 464-5600  
Fax: (478) 738-3864

Project Name: \_\_\_\_\_

Project Number: \_\_\_\_\_

Pay Estimate Number: \_\_\_\_\_ Partial: \_\_\_\_\_

Pay Period: \_\_\_\_\_ Final: \_\_\_\_\_

Original Contract Amount: \$ \_\_\_\_\_

Total Change Orders to Date: \_\_\_\_\_

Current Contract Amount: \$ \_\_\_\_\_

---

Original contract Work Performed to Date: \_\_\_\_\_

Change Order Work Performed to Date: \_\_\_\_\_

Materials Stored on Job Site: \_\_\_\_\_

Subtotal: \_\_\_\_\_

Less (5 %) Previous Retainage: \_\_\_\_\_

Subtotal: \_\_\_\_\_

Less Previous Payments: \_\_\_\_\_

Current Invoice Amount: \_\_\_\_\_

Less (5 %) Current Retainage: \_\_\_\_\_

Balance Due This Payment: \_\_\_\_\_

According to the best of my knowledge and belief, all items and amounts shown on the face of this Pay Estimate are correct; that all Work has been performed or materials supplied, or both, in full accordance with the requirements of the Contract Documents, or duly authorized deviations or additions thereto; that the foregoing is a true and correct statement of the Contract Price account up to and including the last day of the period covered by this Pay Estimate; that none of the "Balance Due This Payment" has been received, and that the undersigned and its Subcontractors have complied with all the labor provisions of the Contract Documents.

The Contractor further certifies that on those items of Work not disputed that all payables, materials, bills, and other indebtedness connected with the Work have been paid (less retention equal to that being retained by the Owner) for Work covered by previous payments.

Quantities on request for partial payment are estimated only. Final quantities are by a final survey and "as built" drawings by Contractor.

\_\_\_\_\_  
(Contractor)

By: \_\_\_\_\_  
(Signature of Authorized Representative)

Date: \_\_\_\_\_

Title: \_\_\_\_\_

---

By: \_\_\_\_\_  
MWA-Inspector

By: \_\_\_\_\_  
Project Engineer

Date: \_\_\_\_\_

Date: \_\_\_\_\_

## SECTION 01010

### Summary of Work

## PART 1 GENERAL

### 1.1 DESCRIPTION

- A. The Work to be performed under this Contract shall consist of furnishing all labor, materials, tools, equipment and incidentals and performing all Work required to construct complete in place and ready to operate, The relocation of approximately 1700 L.F. of 8" Class 350 Ductile Iron Watermain and approximately 140 L.F. of 6" Class 350 Ductile Iron Watermain at the intersection of SR 87 / Riverside Drive and Arkwright Road. The relocation work is required to resolve conflicts with the GDOT Roundabout Project – PI 0015692.
- B. All Work described above shall be performed as shown on the Drawings and as specified. All work shall be done by those skilled in the type of work involved. When new work adjoins, connects or abuts existing work, the latter shall be altered as necessary and the work connected in a substantial and approved workmanlike manner. All work shall match as nearly as practical the existing, adjoining, and/or adjacent similar work. All existing work which is to remain, that is moved or disturbed or damaged by the contractor's operations shall be restored properly to original condition or replaced at no cost to the Owner. The Owner is responsible for locating existing valves that have been covered by paving or backfilled over. Once these valves have been located it will be the responsibility of the contractor to maintain including any adjustment required to grade at the end of the project. Any cost associated with this shall be included in the cost of installation.
- C. The Contractor shall furnish all labor, material, and equipment for removing pavement, excavating, bracing, backfilling, and making temporary pavement repairs and/or permanent pavement repairs using cold mix asphalt approved by the Georgia Department of Transportation (GA DOT). All road repairs will be made in accordance with GA DOT and Bibb County regulations/ordinances. If a valve has to be raised at a later date then the contractor will place cold patch in the void of the road until such time when they can return to raise the valve to grade. All pavement repairs will be warranted for one-year from the date of installation.
- D. The Contractor is responsible for all dewatering requirements as necessary to handle the water accumulated in the abandoned pipe while construction activities are in progress.



- E. All traffic control signage and procedures shall be in accordance with GA DOT and Bibb County regulations.
- F. The Contractor shall rent a fire hydrant meter from the Macon Water Authority for flushing, cleaning, inversion, and other related work requiring water.

## **1.2 PROJECT LOCATION**

The equipment and materials to be furnished will be installed at the locations shown on the Drawings, maps, and etc. Prior to submission of bids, the bidders are encouraged to visit the work sites and acquaint themselves with all the requirements of these specifications and all local conditions that may affect the work.

## **1.3 QUANTITIES**

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

## **1.4 PARTIAL OWNER OCCUPANCY**

The existing facilities to which these improvements are being made will continue operation during the period of construction.

END OF SECTION

**SECTION 01016  
OCCUPANCY****PART 1 - GENERAL****1.01 PARTIAL OCCUPANCY BY OWNER**

- A. Whenever, in the opinion of the Engineer, any section or portion of the Work or any structure is in suitable condition, it may be put into use upon the written order of the Engineer and such usage will not be held in any way as an acceptance of said Work or structure, or any part thereof, or as a waiver of any of the provisions of these Specifications and the Contract. Pending final completion and acceptance of the Work, all necessary repairs and replacements, due to defective materials or workmanship or operations of the Contractor, for any section of the Work so put into use shall be performed by the Contractor at Contractor's own expense.

END OF SECTION

**SECTION 01020  
ALLOWANCES**

**PART 1 - GENERAL**

**1.01 DESCRIPTION**

- A. The Contractor shall include in his lump sum bid proposal the allowances stated on the Bid Form. The contractor shall cause the work covered by this allowance to be provided by such suppliers as the Owner may select. The Contractor's cost for overhead and profit, handling, coordinating and any other costs that are necessary to complete items to be completed using allowances will be agreed to in writing by all parties prior to any work beginning.

**PART 2 – PRODUCTS: As noted on the Bid Form.**

**PART 3 – EXECUTION**

**3.01 PREPARATION**

- A. Contractor shall submit proposals for all work to be covered by Allowances.

END OF SECTION

## SECTION 01025

### Measurement and Payment

#### **PART 1 GENERAL**

##### **1.01 SCOPE**

- A. The Bid lists each item of the Project for which payment will be made. No payment will be made for any items other than those listed in the Bid.
- B. Required items of work and incidentals including materials testing necessary for the satisfactory completion of the work which are not specifically listed in the Bid, and which are not specified in this Section to be measured or to be included in one of the items listed in the Bid, shall be considered as incidental to the work. All costs thereof, including Contractor's overhead costs and profit, shall be considered as included in the lump sum or unit prices bid for the various Bid items. The Contractor shall prepare the Bid accordingly.
- C. Work includes furnishing all labor, equipment, tools and materials, which are not furnished by the Owner and performing all operations required to complete the work satisfactorily, in place, as specified and as indicated on the Drawings.

##### **1.02 DESCRIPTIONS**

- A. Measurement of an item of work will be by the unit indicated in the Bid.
- B. Final payment quantities shall be determined from the record drawings. The record drawing lengths, dimensions, quantities, etc. shall be determined by a survey after the completion of all required work. Said survey shall conform to Section 01720 of these Specifications. The precision of final payment quantities shall match the precision shown for that item in the Bid.
- C. Payment will include all necessary and incidental related work not specified to be included in any other item of work listed in the Bid.
- D. Unless otherwise stated in individual sections of the Specifications or in the Bid, no separate payment will be made for any item of work, materials, parts, equipment, supplies or related items required to perform and complete the work. The costs for all such items required shall be included in the price bid for item of which it is a part.
- E. Payment will be made by extending unit prices multiplied by quantities provided and then summing the extended prices to reflect actual work. Such price and payment shall constitute full compensation to the Contractor for furnishing all labor, equipment, tools and materials not furnished by the Owner

and for performing all operations required to provide to the Owner the entire Project, complete in place, as specified and as indicated on the Drawings.

- F. "Products" shall mean materials or equipment permanently incorporated into the work.

## **PART 2 ITEMS**

### **2.01 CASH ALLOWANCES**

#### **A. General**

1. The Contractor shall include in the Bid Total all allowances stated in the Contract Documents. These allowances shall cover the net cost of the services provided by a firm selected by the Owner. The Contractor's handling costs, labor, overhead, profit and other expenses contemplated for the original allowance shall be included in the items to which they pertain and not in allowances.
2. No payment will be made for nonproductive time on the part of testing personnel due to the Contractor's failure to properly coordinate testing activities with the work schedule or the Contractor's problems with maintaining equipment in good working condition. The Contractor shall make all necessary excavations and shall supply any samples of materials necessary for conducting compaction and density tests.
3. No payment shall be provided for services which fail to verify required results.

- B. Should the net cost be more or less than the specified amount of the allowance, the Contract will be adjusted accordingly by change order. The amount of change order will not recognize any changes in handling costs at the site, labor, overhead, profit and other expenses caused by the adjustment to the allowance.

#### **C. Documentation**

1. Submit copies of the invoices with each periodic payment request from the firm providing the services.
2. Submit results of services provided which verify required results.

**2.02 CLEARING AND GRUBBING**

- A. All costs for clearing and grubbing including necessary offsite disposal of cleared trees, stumps, underbrush and debris shall be included in the unit price bid for water mains. Clearing and grubbing shall also include removal and offsite disposal of silt fencing in conflict with new work and relocation of mulch barrier to new silt fence location.
- B. The cost of moving and reestablishing landscape features, including labor and materials, shall be included in the unit price bid for the item to which it pertains. No separate measurement or payment will be made.

**2.03 EROSION AND SEDIMENTATION CONTROL**

- A. General
  - 1. No separate payment shall be made for temporary and/or permanent erosion and sedimentation controls, except as noted below. All other temporary and/or permanent erosion and sedimentation control costs shall be included in the unit price bid for the item to which it pertains.
  - 2. No payment will be made for any portion of the Project for which temporary erosion and sedimentation controls are not properly maintained.
  - 3. Quantities for payment shall be based upon actual quantity constructed and authorized by the Engineer.
- B. Type "NS" Sediment Barrier or Type "S" Sediment Barrier: All costs for silt fence or silt fence check dams, including installation, maintenance, repair, replacement, and removal, shall be included in the unit price bid for Type "NS" Sediment Barrier or Type "S" Sediment Barrier.
- C. Grassing and Mulching: All costs for grassing and mulching including soil amendments, establishment of temporary grassing, establishment of permanent grassing, mulching with straw, watering, mowing, maintenance, etc., shall be included in the unit price bid for Grassing & Mulching.

**2.04 TRENCH EXCAVATION AND BACKFILL**

- A. No separate or additional payment will be made for any special or unique method, means, techniques or equipment necessary for the Contractor's compliance with these Specifications, regulatory requirements, permits, laws or regulations which govern this Project.



- B. Trench Excavation: No separate payment will be made for trench excavation. All costs shall be included in the unit price bid for the item to which it pertains at the appropriate depth.
- C. Sheet piling, Bracing and Shoring: No separate payment will be made for providing any sheet piling, bracing and shoring.
- D. Dewatering Excavations: All costs of equipment, labor and materials required for dewatering shall be included in the price bid for the item to which it pertains.
- E. Trench Foundation and Stabilization
  - 1. No payment for trench stabilization shall be authorized until after the trench has been dewatered. If the pipe is installed in an inadequately prepared trench bottom, the Engineer shall notify the Contractor in writing of the deficiency and will not authorize payment for that portion of that length of pipe which was improperly installed.
  - 2. Payment for trench stabilization shall be made on the basis of the amount authorized and the unit price bid for TRENCH STABILIZATION. Payment shall include all costs for the removal and disposal of the unsuitable material and replacement with crushed stone or rip-rap. No additional payment will be made for material required for specified bedding.
- F. Bedding and Haunching
  - 1. The unit price bid for pipe for WATER MAINS shall include excavation of the trench to the depth below the pipe necessary to provide specified bedding and to lay the pipe to grade.
  - 2. No additional payment will be made for additional trench depth.
  - 3. No separate payment will be made for material used to provide specified bedding. The cost of all bedding materials shall be included in the unit price bid for the item to which it relates, except for trench stabilization.
  - 4. No additional payment will be made for improved bedding required to compensate for over excavation of the trench.
- G. Initial Backfill
  - 1. No separate payment shall be made for initial backfill.
  - 2. No separate payment shall be made for drying out the initial backfill material in order to meet the compaction requirements.
  - 3. No separate payment shall be made for the adding of moisture to the

initial backfill materials in order to meet the compaction requirements.

4. Payment for providing select material for backfilling will be made only if ordered by the Engineer. Select backfill will be ordered by the Engineer only if the insitu material does not meet the requirements for initial backfill for reasons other than moisture content, i.e., the backfill material contains rock larger than that specified, organics, cinders, stumps, limbs, frozen earth or mud, man-made wastes or other unsuitable materials. No payment will be made for select backfill acquired from the Project site. Payment will be made only for Select Backfill which is imported to the Project site.

#### H. Final Backfilling

1. No additional payment will be made for additional material when excavated materials are used.
2. No separate payment shall be made for drying out the final backfill material in order to meet the compaction requirements.
3. No separate payment shall be made for the adding of moisture to the final backfill materials in order to meet the compaction requirements.
4. Payment for providing select material for backfilling will be made only if ordered by the Engineer. Select backfill will be ordered by the Engineer only if the insitu material does not meet the requirements for final backfill for reasons other than moisture content, i.e., the backfill material contains rock larger than that specified, organics, cinders, stumps, limbs, frozen earth or mud, man-made wastes or other unsuitable materials. No payment will be made for select backfill acquired from the Project site. Payment will be made only for Select Backfill which is imported to the Project site.

- J. Additional Material: No separate payment will be made for additional earth or fill materials imported to the Project site.

### **2.05 WATER DISTRIBUTION CONSTRUCTION**

- A. Water Mains: Water mains will be paid for at the unit price bid per linear foot for the various sizes shown in the Bid Form. Payment shall include all labor, equipment and materials necessary to complete the work as specified, including thrust blocking.
- B. Fittings: Separate payment will be made for fittings needed to complete installation of the water line as indicated on the plans on a per pound basis. Fittings weights will be determined based on the published weights without

retainer glands, megalug joint restraints or fitting packs included.

- C. Fire Hydrants: Fire hydrants shall be paid for at the unit price per each shown in the Bid Form. The price shall include all labor, equipment, materials and incidentals necessary for a complete installation. No separate payment will be made for gravel, retainer glands, strapping, blocking extensions or other incidentals normally provided for a hydrant installation. Any additional fittings required to install a hydrant will be paid for at the unit price bid for fitting.
- D. Valves: Gate valves and air release valves will be paid for at the unit price per each shown in the Bid Form for various sized valves. The price shall include all materials, labor, equipment, valve box, concrete blocking, concrete pad and all other incidentals required for a complete installation
- E. Connections to Existing Mains: Connections to existing mains will be paid at the lump sum price for each size as indicated in the Bid Form. The unit price bid shall include all work, including dewatering, to locate and connect to the main.
- F. Pressure Testing and Disinfection of Main: Payment will be made for pressure testing and disinfecting of water mains based on the lump sum price bid in the Bid Form.
- G. Warning Tape: No separate payment will be made for tape. The cost of furnishing and placing Metal Detector Tape shall be included in the contract unit price for installing pipe.
- H. Steel Casing – Open Cut Installation: Measurement and payment for steel casing installed by open cut method will be measured per lineal foot installed complete with all materials and installation required. Payment will be per the unit price bid in the Bid Form.
- I. Pipe Installation in Casing: Measurement and payment for restrained pipe installed in steel casing will be based on the unit price per lineal foot bid in the Bid Form. Payment shall include all materials, including casing spacers.
- J. The Owner shall provide the following material:
- American 8” Class 350 Ductile Iron Water Main with New Standard Gaskets
  - American 6” Class 350 Ductile Iron Water Main with New Standard Gaskets
  - 8” Gate Valves – American and/or Mueller
  - 6” Gate Valves – American and/or Mueller
  - City of Macon Fire Hydrants and Extensions

The Contractor shall provide all other materials required to complete the work including, but not limited to: Fittings, Casing, Casing Spacers, Restrained Joint Gaskets. The Contractor shall be responsible for all costs associated with pickup, transport, storage and protection of owner supplied material.

- K. The MWA shall employ an independent surveying firm to provide construction staking at the start of this project. It will be the responsibility of the Contractor to preserve all survey monuments set by the surveyor. The Contractor shall be responsible for resetting survey control construction staking disturbed by construction.

## **2.06 JACK AND BORE CASINGS**

- A. Payment for casing shall be made only at the completion of all work specified for the casing installation and shall include all necessary excavation, utility exploration, and setting up of equipment and bore depths to avoid conflicts.
- B. Casing pipe may be included in Partial Payment Requests as stored materials, if the casing pipe is stored at the Project Site. Casing pipe which has been properly installed, but has not yet been paid for as installed casing, may also be included as stored materials.
- C. Payment for pipe in casing shall be made only at the completion of all work specified for the pipe installation. Payment for pipe in the casing shall include all incidental including Spacers and Link Seal Closures for each end of the casing and shall be made only at the one unit price bid.

## **2.07 REMOVING AND REPLACING PAVEMENT**

- A. Payment for removing and replacing pavement in roadways with Class "A" Pavement Replacement will be made as a separate item based on the measured quantity replaced at the unit price in the Bid. The unit price bid shall include all costs associated with removing and replacing pavement, including providing select backfill if necessary, traffic control and temporary measures for maintaining traffic.
- B. Payment shall be made only for that length for which the pipeline is constructed underneath the pavement as shown on the Drawings with a maximum width of six (6) feet, unless specifically noted on the plan.
- C. Payment for soils testing shall be made by the Contractor and shall be included in the cost for Class A' Pavement Replacement.
- D. No additional payment will be made for removing and replacing damaged adjacent pavement.

- E. Costs for removal and replacement of driveways, sidewalks and curb and gutter shall be included in the unit price bid for the item to which it pertains.

## **2.08 MISCELLANEOUS REMOVALS AND REPLACEMENTS**

- A. All miscellaneous removals and replacements of driveways, signs, flower beds, trees, shrubs, drainage structures, drainage pipes, fencing, ditch grading, pipe headwalls, existing rip-rap or concrete aprons, etc. shall be included in the Unit Price bid for the item to which it pertains.

## **2.09 AS-BUILT DRAWING**

- A. Measurement for payment for the As-Built Program shall be based on an even distribution throughout the duration of the project of the lump sum bid for the As-Built Program. The As-Built Program lump sum is provided in the bid to cover the costs for as-built preparation as described in Section 00800 (Supplementary Conditions).

END OF SECTION

## SECTION 01091 CODES AND STANDARDS

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

- A. Whenever reference is made to conforming to the standards of any technical society, organization, body, code or standard, it shall be construed to mean the latest standard, code, specification or tentative specification adopted and published at the time of advertisement for Bids. This shall include the furnishing of materials, testing of materials, fabrication and installation practices. In those cases where the Contractor's quality standards establish more stringent quality requirements, the more stringent requirement shall prevail. Such standards are made a part hereof to the extent which is indicated or intended.
- B. The inclusion of an organization under one category does not preclude that organizations' standards from applying to another category.
- C. In addition, all work shall comply with the applicable requirements of local codes, utilities and other authorities having jurisdiction.
- D. All material and equipment, for which a UL Standard, an AGA or NSF approval or an ASME requirement is established, shall be so approved and labeled or stamped. The label or stamp shall be conspicuous and not covered, painted, or otherwise obscured from visual inspection.
- E. The standards which apply to this Project are not necessarily restricted to those organizations which are listed in Article 1.02.

#### 1.02 STANDARD ORGANIZATIONS

##### A. Piping and Valves

ACPA	American Concrete Pipe Association
ANSI	American National Standards Institute
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
AWWA	American Water Works Association
CISPI	Cast Iron Soil Pipe Institute
DIPRA	Ductile Iron Pipe Research Association
FCI	Fluid Controls Institute
MSS	Manufacturers Standardization Society
NCPI	National Clay Pipe Institute

NSF	National Sanitation Foundation
PPI	Plastic Pipe Institute
	Uni-Bell PVC Pipe Association

#### B. Materials

AASHTO	American Association of State Highway and Transportation Officials
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials

#### C. Painting and Surface Preparation

NACE	National Association of Corrosion Engineers
SSPC	Steel Structures Painting Council

#### D. Electrical and Instrumentation

AEIC	Association of Edison Illuminating Companies
AIEE	American Institute of Electrical Engineers
EIA	Electronic Industries Association
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
IPC	Institute of Printed Circuits
IPCEA	Insulated Power Cable Engineers Association
ISA	Instrument Society of America
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
TIA	Telecommunications Industries Association
UL	Underwriter's Laboratories
VRCI	Variable Resistive Components Institute

#### E. Aluminum

AA	Aluminum Association
AAMA	American Architectural Manufacturers Association

#### F. Steel and Concrete

ACI	American Concrete Institute
AISC	American Institute of Steel Construction, Inc.
AISI	American Iron and Steel Institute
CRSI	Concrete Reinforcing Steel Institute
NRMA	National Ready-Mix Association

PCA	Portland Cement Association
PCI	Prestressed Concrete Institute

G. Welding

ASME	American Society of Mechanical Engineers
AWS	American Welding Society

H. Government and Technical Organizations

AIA	American Institute of Architects
APHA	American Public Health Association
APWA	American Public Works Association
ASA	American Standards Association
ASAE	American Society of Agricultural Engineers
ASCE	American Society of Civil Engineers
ASQC	American Society of Quality Control
ASSE	American Society of Sanitary Engineers
CFR	Code of Federal Regulations
CSI	Construction Specifications Institute
EDA	Economic Development Administration
EPA	Environmental Protection Agency
FCC	Federal Communications Commission
FmHA	Farmers Home Administration
FS	Federal Specifications
IAI	International Association of Identification
ISEA	Industrial Safety Equipment Association
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
NBFU	National Board of Fire Underwriters
(NFPA)	National Fluid Power Association
NBS	National Bureau of Standards
NISO	National Information Standards Organization
OSHA	Occupational Safety and Health Administration
SI	Salt Institute
SPI	The Society of the Plastics Industry, Inc.
USDC	United States Department of Commerce
WEF	Water Environment Federation

I. General Building Construction

AHA	American Hardboard Association
AHAM	Association of Home Appliance Manufacturers
AITC	American Institute of Timber Construction
APA	American Parquet Association, Inc.
APA	American Plywood Association



BHMA	Builders Hardware Manufacturers Association
BIFMA	Business and Institutional Furniture Manufacturers Association
DHI	Door and Hardware Institute
FM	Factory Mutual Fire Insurance Company
HPMA	Hardwood Plywood Manufacturers Association
HTI	Hand Tools Institute
IME	Institute of Makers of Explosives
ISANTA	International Staple, Nail and Tool Association
ISDSI	Insulated Steel Door Systems Institute
IWS	Insect Screening Weavers Association
MBMA	Metal Building Manufacturers Association
NAAMM	National Association of Architectural Metal Manufacturers
NAGDM	National Association of Garage Door Manufacturers
NCCLS	National Committee for Clinical Laboratory Standards
NFPA	National Fire Protection Association
NFSA	National Fertilizer Solutions Association
NKCA	National Kitchen Cabinet Association
NWMA	National Woodwork Manufacturers Association
NWWDA	National Wood Window and Door Association
RMA	Rubber Manufacturers Association
SBC	SBCC Standard Building Code
SDI	Steel Door Institute
SIA	Scaffold Industry Association
SMA	Screen Manufacturers Association
SPRI	Single-Ply Roofing Institute
TCA	Tile Council of America
UBC	Uniform Building Code
 J. Roadways	
AREA	American Railway Engineering Association
DOT	Department of Transportation
SSRBC	Standard Specifications for Construction of Transportation Systems, Georgia Department of Transportation
 K. Plumbing	
AGA	American Gas Association
NSF	National Sanitation Foundation
PDI	Plumbing Drainage Institute
SPC	SBCC Standard Plumbing Code
 L. Refrigeration, Heating, and Air Conditioning	
AMCA	Air Movement and Control Association

ARI	American Refrigeration Institute
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
CGA	Compressed Gas Association
CTI	Cooling Tower Institute
HEI	Heat Exchange Institute
IIAR	International Institute of Ammonia Refrigeration
NB	National Board of Boilers and Pressure Vessel Inspectors
PFMA	Power Fan Manufacturers Association
SAE	Society of Automotive Engineers
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SMC	SBCC Standard Mechanical Code
TEMA	Tubular Exchangers Manufacturers Association

#### M. Equipment

AFBMA	Anti-Friction Bearing Manufacturers Association, Inc.
AGMA	American Gear Manufacturers Association
ALI	Automotive Lift Institute
CEMA	Conveyor Equipment Manufacturers Association
CMAA	Crane Manufacturers Association of America
DEMA	Diesel Engine Manufacturers Association
MMA	Monorail Manufacturers Association
OPEI	Outdoor Power Equipment Institute, Inc.
PTI	Power Tool Institute, Inc.
RIA	Robotic Industries Association
SAMA	Scientific Apparatus Makers Association

### 1.03 SYMBOLS

Symbols and material legends shall be as scheduled on the Drawings.

END OF SECTION

## SECTION 01200 PROJECT MEETINGS

### PART 1 - GENERAL

#### 1.01 SCOPE

- A. Work under this Section includes all scheduling and administering of pre-construction and progress meetings as herein specified and necessary for the proper and complete performance of this Work.
- B. Scheduling and Administration by Engineer of Record on behalf of Macon Water Authority Inspections Department:
  - 1. Prepare agenda.
  - 2. Make physical arrangements for the meetings.
  - 3. Preside at meetings.
  - 4. Record minutes and include significant proceedings and decisions.
  - 5. Distribute copies of the minutes to participants.

#### 1.02 PRECONSTRUCTION CONFERENCE

- A. The Engineer of Record shall schedule the preconstruction conference prior to the issuance of the Notice to Proceed.
- B. Representatives of the following parties are to be in attendance at the meeting:
  - 1. Owner.
  - 2. Engineer.
  - 3. Contractor and superintendent.
  - 4. Major subcontractors.
  - 5. Representatives of governmental or regulatory agencies when appropriate.
- C. The agenda for the preconstruction conference shall consist of the following as a minimum:
  - 1. Distribute and discuss a list of major subcontractors and a tentative construction schedule.
  - 2. Critical work sequencing.
  - 3. Designation of responsible personnel and emergency telephone numbers.
  - 4. Processing of field decisions and change orders.
  - 5. Adequacy of distribution of Contract Documents.
  - 6. Schedule and submittal of shop drawings, product data and samples.
  - 7. Pay request format, submittal cutoff date, payday and retainage.
  - 8. Procedures for maintaining record documents.
  - 9. Use of premises, including office and storage areas and Owner's

- requirements.
10. Major equipment deliveries and priorities.
  11. Safety and first aid procedures.
  12. Security procedures.
  13. Housekeeping procedures.
  14. Workhours.

### **1.03 PROJECT COORDINATION MEETINGS**

- A. Project Coordination Meetings may be requested at any time at the discretion of the Owner, Engineer or Contractor. The party requesting a meeting shall provide the other two parties with as much notice as possible, as well as a written agenda for such meeting.

END OF SECTION

## SECTION 01310

### CONSTRUCTION SCHEDULES

#### PART 1 - GENERAL

##### 1.01 SCOPE

- A. The work under this Section includes preparing, furnishing, distributing, and periodic updating of the construction schedules as specified herein.
- B. The purpose of the schedule is to demonstrate that the Contractor can complete the overall Project within the Contract Time and meet all required interim milestones.

##### 1.02 SUBMITTALS

- A. Overall Project Schedule (OPS)
  - 1. Submit the schedule within 10 days after date of the Notice to Proceed.
  - 2. The Engineer will review the schedule and return it within 10 days after receipt.
  - 3. If required, resubmit within 10 days after receipt of a returned copy.
- B. Near Term Schedule (NTS)
  - 1. Submit the first Near Term Schedule within 10 days of the Notice to Proceed.
  - 2. The Engineer will review the schedule and return it within 10 days after receipt.
- C. Submit an update of the OPS and NTS with each progress payment request.
- D. Submit the number of copies required by the Contractor, plus four copies to be retained by the Engineer.

##### 1.03 APPROVAL

- A. Approval of the Contractor's detailed construction program and revisions thereto shall in no way relieve the Contractor of any of Contractor's duties and obligations under the Contract. Approval is limited to the format of the schedule and does not in any way indicate approval of, or concurrence with, the Contractor's means, methods and ability to carry out the Work.

#### **1.04 OVERALL PROJECT SCHEDULE (OPS)**

- A. The Contractor shall submit to the Engineer for approval a detailed Overall Project Schedule of the Contractor's proposed operations for the duration of the Project. The OPS shall be in the form of a Gantt/bar chart.
- B. Gantt/Bar Chart Schedule
  - 1. Each activity with a duration of five or more days shall be identified by a separate bar. Activities with a duration of more than 20 days shall be sub-divided into separate activities.
  - 2. The schedule shall include activities for shop drawing preparation and review, fabrication, delivery, and installation of major or critical path materials and equipment items.
  - 3. The schedule shall show the proposed start and completion date for each activity. A separate listing of activity start and stop dates and working day requirements shall be provided unless the information is shown in text form on the Gantt/bar chart.
  - 4. The schedule shall identify the Notice to Proceed date, the Contract Completion date, major milestone dates, and a critical path.
  - 5. The schedule shall be printed on a maximum 11 x 17-inch size paper. If the OPS needs to be shown on multiple sheets, a simplified, one page, summary bar chart showing the entire Project shall be provided.
  - 6. The schedule shall have a horizontal time scale based on calendar days and shall identify the Monday of each week.
  - 7. The schedule shall show the precedence relationship for each activity.

#### **1.05 NEAR TERM SCHEDULE (NTS)**

- A. The Contractor shall develop and refine a detailed Near Term Schedule showing the day to day activities with committed completion dates which must be performed during the upcoming 30 day period. The detailed schedule shall represent the Contractor's best approach to the Work which must be accomplished to maintain progress consistent with the Overall Project Schedule.
- B. The Near Term Schedule shall be in the form of Gantt/bar chart and shall include a written narrative description of all activities to be performed and describe corrective action to be taken for items that are behind schedule.

#### **1.06 UPDATING**

- A. Show all changes occurring since previous submission of the updated schedule.
- B. Indicate progress of each activity and show actual completion dates.
- C. The Contractor shall be prepared to provide a narrative report at the Project Coordination Meetings. The report shall include the following:

1. A description of the overall Project status and comparison to the OPS.
2. Identify activities which are behind schedule and describe corrective action to be taken.
3. A description of changes or revisions to the Project and their effect on the OPS.
4. A description of the Near Term Schedule of the activities to be completed during the next 30 days. The report shall include a description of all activities requiring participation by the Engineer and/or Owner.



END OF SECTION

## **SECTION 01320**

### **CONSTRUCTION VIDEO & PHOTOGRAPHS**

#### **PART 1 - GENERAL**

##### **1.01 SCOPE**

- A. The Contractor shall furnish all equipment, labor and materials required to provide the Owner with a video recording of the Project in DVD or digital format.
- B. Video shall become the property of the Owner and none of the videos herein shall be published without express permission of the Owner.

##### **1.02 PRE AND POST CONSTRUCTION PHOTOGRAPHS**

- A. Prior to the beginning of any work, the Contractor shall take project video of the above ground work area to record existing conditions.
- B. Following completion of the work, another recording shall be made showing the same areas and features as in the pre-construction videos.
- C. All conditions which might later be subject to disagreement shall be shown in sufficient detail to provide a basis for decisions.
- D. The pre-construction video shall be submitted to the Engineer within 25 calendar days after the date of receipt by the Contractor of Notice to Proceed. Post-construction video shall be provided prior to final acceptance of the project.

END OF SECTION

## SECTION 01340

# SHOP DRAWINGS, PRODUCT DATA & SAMPLES

### PART 1 - GENERAL

#### 1.01 SCOPE

- A. The work under this Section includes submittal to the Engineer of shop drawings, product data and samples required by the various sections of these Specifications.
- B. Submittal Contents: The submittal contents required are specified in each section.
- C. Definitions: Submittals are categorized as follows:
  - 1. Shop Drawings
    - a. Shop drawings shall include technical data, drawings, diagrams, procedure and methodology, performance curves, schedules, templates, patterns, test reports, calculations, instructions, measurements and similar information as applicable to the specific item for which the shop drawing is prepared.
    - b. Provide newly-prepared information, on reproducible sheets, with graphic information at accurate scale (except as otherwise indicated) or appropriate number of prints hereof, with name or preparer (firm name) indicated. The Contract Drawings shall not be traced or reproduced by any method for use as or in lieu of detail shop drawings. Show dimensions and note which are based on field measurement. Identify materials and products in the work shown. Indicate compliance with standards and special coordination requirements. Do not allow shop drawing copies without appropriate final "Action" markings by the Engineer to be used in connection with the Work.
    - c. Drawings shall be presented in a clear and thorough manner. Details shall be identified by reference to sheet and detail, specification section, schedule or room numbers shown on the Contract Drawings.
    - d. Minimum assembly drawings sheet size shall be 24 x 36-inches.
    - e. Minimum detail sheet size shall be 8-1/2 x 11-inches.
    - f. Minimum Scale:
      - (1) Assembly Drawings Sheet, Scale: 1-inch = 30 feet.
      - (2) Detail Sheet, Scale: 1/4-inch = 1 foot.
  - 2. Product Data
    - a. Product data includes standard printed information on materials, products and systems, not specially prepared for this Project, other

- than the designation of selections from among available choices printed therein.
- b. Collect required data into one submittal for each unit of work or system, and mark each copy to show which choices and options are applicable to the Project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked and special coordination requirements.
3. Samples
- a. Samples include both fabricated and un-fabricated physical examples of materials, products and units of work, both as complete units and as smaller portions of units of work, either for limited visual inspection or, where indicated, for more detailed testing and analysis.
  - b. Provide units identical with final condition of proposed materials or products for the work. Include "range" samples, not less than three units, where unavoidable variations must be expected, and describe or identify variations between units of each set. Provide full set of optional samples where the Engineer's selection is required. Prepare samples to match the Engineer's sample where indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations and compliance with standards. Samples are submitted for review and confirmation of color, pattern, texture and "kind" by the Engineer. Engineer will note "test" samples, except as otherwise indicated, for other requirements, which are the exclusive responsibility of the Contractor.
4. Miscellaneous submittals related directly to the Work (non-administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, statements of applicability, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock, security/protection/safety keys and similar information, devices and materials applicable to the Work but not processed as shop drawings, product data or samples.

## 1.02 SPECIFIC CATEGORY REQUIREMENTS

- A. General: Except as otherwise indicated in the individual work sections, comply with general requirements specified herein for each indicated category of submittal. Submittals shall contain:
1. The date of submittal and the dates of any previous submittals.
  2. The Project title.

3. Numerical submittal numbers, starting with 1.0, 2.0, etc. Revisions to be numbered 1.1, 1.2, etc.
4. The Names of:
  - a. Contractor
  - b. Supplier
  - c. Manufacturer
5. Identification of the product, with the Specification section number, permanent equipment tag numbers and applicable Drawing No.
6. Field dimensions, clearly identified as such.
7. Relation to adjacent or critical features of the Work or materials.
8. Applicable standards, such as ASTM or Federal Specification numbers.
9. Notification to the Engineer in writing, at time of submissions, of any deviations on the submittals from requirements of the Contract Documents.
10. Identification of revisions on resubmittals.
11. An 8 x 3-inch blank space for Contractor and Engineer stamps.
12. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria and coordination of the information within the submittal with requirements of the Work and of Contract Documents.
13. Submittal sheets or drawings showing more than the particular item under consideration shall have all but the pertinent description of the item for which review is requested crossed out.

### **1.03 ROUTING OF SUBMITTALS**

- A. Submittals and routine correspondence shall be routed as follows:
  1. Supplier to Contractor (through representative if applicable)
  2. Contractor to Engineer.
  3. Engineer to Owner
  4. Owner to Contractor (to be picked up by Contractor)
  5. Contractor to Supplier

## **PART 2 - PRODUCTS**

### **2.01 SHOP DRAWINGS**

- A. Unless otherwise specifically directed by the Engineer, make all shop drawings accurately to a scale sufficiently large to show all pertinent features of the item and its method of connection to the Work.
- B. Submit all shop assembly drawings, larger than 11 x 17-inches, in the form of one reproducible transparency with two opaque prints or blueines.

- C. Submit all shop drawings, 11 x 17-inches and smaller, in the form of six opaque prints or bluelines.
- D. One reproducible for all submittals larger than 11 x 17-inches and no more than three prints of other submittals will be returned to the Contractor.

## **2.02 MANUFACTURER'S LITERATURE**

- A. Where content of submitted literature from manufacturers includes data not pertinent to this submittal, clearly indicate which portion of the contents is being submitted for the Engineer's review.
- B. Submit the number of copies which are required to be returned (not to exceed three) plus three copies which will be retained by the Engineer.

## **2.03 SAMPLES**

- A. Samples shall illustrate materials, equipment or workmanship and established standards by which completed work is judged.
- B. Unless otherwise specifically directed by the Engineer, all samples shall be of the precise article proposed to be furnished.
- C. Submit all samples in the quantity which is required to be returned plus one sample which will be retained by the Engineer.

## **2.04 COLORS**

- A. Unless the precise color and pattern is specifically described in the Contract Documents, wherever a choice of color or pattern is available in a specified product, submit accurate color charts and pattern charts to the Engineer for review and selection.
- B. Unless all available colors and patterns have identical costs and identical wearing capabilities, and are identically suited to the installation, completely describe the relative costs and capabilities of each.

# **PART 3 - EXECUTION**

## **3.01 CONTRACTOR'S COORDINATION OF SUBMITTALS**

- A. Prior to submittal for the Engineer's review, the Contractor shall use all means necessary to fully coordinate all material, including the following procedures:
  - 1. Determine and verify all field dimensions and conditions, catalog numbers and similar data.

2. Coordinate as required with all trades and all public agencies involved.
  3. Submit a written statement of review and compliance with the requirements of all applicable technical Specifications as well as the requirements of this Section.
  4. Clearly indicate in a letter or memorandum on the manufacturer's or fabricator's letterhead, all deviations from the Contract Documents.
- B. Each and every copy of the shop drawings and data shall bear the Contractor's stamp showing that they have been so checked. Shop drawings submitted to the Engineer without the Contractor's stamp will be returned to the Contractor for conformance with this requirement.
- C. The Owner may backcharge the Contractor for costs associated with having to review a particular shop drawing, product data or sample more than two times to receive a "No Exceptions Taken" mark.
- D. Grouping of Submittals
1. Unless otherwise specifically permitted by the Engineer, make all submittals in groups containing all associated items.
  2. No review will be given to partial submittals of shop drawings for items which interconnect and/or are interdependent. It is the Contractor's responsibility to assemble the shop drawings for all such interconnecting and/or interdependent items, check them and then make one submittal to the Engineer along with Contractor's comments as to compliance, non-compliance or features requiring special attention.
- E. Schedule of Submittals – Not Used.

### **3.02 TIMING OF SUBMITTALS**

- A. Make all submittals far enough in advance of scheduled dates for installation to provide all required time for reviews, for securing necessary approvals, for possible revision and resubmittal, and for placing orders and securing delivery.
- B. In scheduling, allow sufficient time for the Engineer's review following the receipt of the submittal.

### **3.03 REVIEWED SHOP DRAWINGS**

- A. Engineer Review
1. Allow a minimum of 10 days for the Engineer's initial processing of each submittal requiring review and response, except allow longer periods where processing must be delayed for coordination with subsequent submittals. The Engineer will advise the Contractor promptly when it is



- determined that a submittal being processed must be delayed for coordination. Allow a minimum of two weeks for reprocessing each submittal. Advise the Engineer on each submittal as to whether processing time is critical to progress of the Work, and therefore the Work would be expedited if processing time could be foreshortened.
2. Acceptable submittals will be marked "No Exceptions Taken". A minimum of three copies will be retained by the Engineer for Engineer's and the Owner's use and the remaining copies will be returned to the Contractor.
  3. Submittals requiring minor corrections before the product is acceptable will be marked "Make Corrections Noted". The Contractor may order, fabricate and ship the items included in the submittals, provided the indicated corrections are made. Drawings must be resubmitted for review and marked "No Exceptions Taken" prior to installation or use of products.
  4. Submittals marked "Amend and Resubmit" must be revised to reflect required changes and the initial review procedure repeated.
  5. The "Rejected - See Remarks" notation is used to indicate products which are not acceptable. Upon return of a submittal so marked, the Contractor shall repeat the initial review procedure utilizing acceptable products.
  6. Only two copies of items marked "Amend and Resubmit" and "Rejected - See Remarks" will be reviewed and marked. One copy will be retained by the Engineer and the other copy with all remaining unmarked copies will be returned to the Contractor for resubmittal.
- B. No work or products shall be installed without a drawing or submittal bearing the "No Exceptions Taken" notation. The Contractor shall maintain at the job site a complete set of shop drawings bearing the Engineer's stamp.
- C. Substitutions: In the event the Contractor obtains the Engineer's approval for the use of products other than those which are listed first in the Contract Documents, the Contractor shall, at the Contractor's own expense and using methods approved by the Engineer, make any changes to structures, piping and electrical work that may be necessary to accommodate these products.
- D. Use of the "No Exceptions Taken" notation on shop drawings or other submittals is general and shall not relieve the Contractor of the responsibility of furnishing products of the proper dimension, size, quality, quantity, materials and all performance characteristics, to efficiently perform the requirements and intent of the Contract Documents. The Engineer's review shall not relieve the Contractor of responsibility for errors of any kind on the shop drawings. Review is intended only to assure conformance with the design concept of the Project and compliance with the information given in the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site. The Contractor is also responsible for information that pertains

solely to the fabrication processes or to the technique of construction and for the coordination of the work of all trades.

### **3.04 RESUBMISSION REQUIREMENTS**

A. Shop Drawings

1. Revise initial drawings as required and resubmit as specified for initial submittal, with the resubmittal number shown.
2. Indicate on drawings all changes which have been made other than those requested by the Engineer.

B. Project Data and Samples: Resubmit new data and samples as specified for initial submittal, with the resubmittal number shown.

END OF SECTION

## SECTION 01400 QUALITY CONTROL

### **PART 1 – GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Quality assurance – control of installation
- B. Tolerances
- C. References and standards
- D. Testing laboratory services
- E. Manufacturer's field services

#### **1.02 RELATED SECTIONS**

- A. Section 01340 – Shop Drawings, Product Data and Samples – Submission of manufacturers' instructions and certificates.
- B. Section 02225 – Excavation, Trenching and Backfilling for Utility System.

#### **1.03 QUALITY ASSURANCE – CONTROL OF INSTALLATION**

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instruction conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

#### **1.04 TOLERANCES**

- A. Monitor fabrication and installation tolerance control of products to produce acceptable work. Do not permit tolerances to accumulate.
- B. Comply with manufacturer's tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

#### **1.05 REFERENCES AND STANDARDS**

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Contract Documents except where a specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Architect/Engineer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

#### **1.06 TESTING SERVICES**

- A. Contractor will appoint and employ services of an independent firm approved by the Owner/Engineer to perform testing. Contractor shall pay for testing services required by the specifications.
- B. The independent firm will perform tests and other services specified in individual specification sections and as required by the Owner.
- C. Testing and source quality control may occur on or off the project site. Perform off-site testing as required by the Owner.
- D. Reports will be submitted by the independent firm to the Engineer and Contractor, in quadruplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- E. Cooperate with independent firm; furnish samples of materials, design, mix, equipment, tools, storage, safe access, and assistance by incidental labor as

requested.

1. Notify Architect/Engineer and independent firm 48 hours prior to expected time for operations requiring services.
2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.

F. Testing does not relieve Contractor to perform work to contract requirements.

G. Re-testing required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Engineer. Payment for re-testing will be made by the Contractor.

## **1.07 MANUFACTURER'S FIELD SERVICES**

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.

B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

## **PART 2 – PRODUCTS: Not Used.**

## **PART 3 – EXECUTION**

### **3.01 EXAMINATION**

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Beginning new work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Verify that utility services are available, of the correct characteristics, and in the correct locations.

### **3.02 PREPARATION**

A. Clean substrate surfaces prior to applying next material or substance.

- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

END OF SECTION

## SECTION 01410

### Testing Laboratory Services

#### PART 1 - GENERAL

##### 1.01 SCOPE

- A. This Section includes testing which the Owner may require, beyond that testing required of the manufacturer, to determine if materials provided for the Project meet the requirements of these Specifications.
- B. This work also includes all testing required by the Owner to verify work performed by the Contractor is in accordance with the requirements of these Specifications, i.e., concrete strength and slump testing, soil compaction, etc.
- C. This work does not include materials testing required in various sections of these Specifications to be performed by the manufacturer, e.g., testing of pipe.
- D. The testing laboratory or laboratories will be selected by the Owner. The testing laboratory or laboratories will work for the Owner.

##### 1.02 PAYMENT FOR TESTING SERVICES

- A. The cost of testing services required by the Contract to be provided by the Contractor shall be paid for by the Contractor.
- B. The cost of material testing described in various sections of these Specifications or as required in referenced standards to be provided by a material manufacturer, shall be included in the price bid for that item and shall be paid by the Contractor.
- C. The cost of retesting any item that fails to meet the requirements of these Specifications shall be paid for by the Contractor. Retesting shall be performed by the testing laboratory working for the Owner.

##### 1.03 LABORATORY DUTIES

- A. Cooperate with the Owner, Engineer and Contractor.
- B. Provide qualified personnel promptly on notice.
- C. Perform specified inspections, sampling and testing of materials.
  - 1. Comply with specified standards, ASTM, other recognized authorities, and as specified.
  - 2. Ascertain compliance with requirements of the Contract Documents.



- D. Promptly notify the Engineer and Contractor of irregularity or deficiency of work which are observed during performance of services.
- E. Promptly submit three copies (two copies to the Engineer and one copy to the Contractor) of report of inspections and tests in addition to those additional copies required by the Contractor with the following information included:
  - 1. Date issued
  - 2. Project title and number
  - 3. Testing laboratory name and address
  - 4. Name and signature of inspector
  - 5. Date of inspection or sampling
  - 6. Record of temperature and weather
  - 7. Date of test
  - 8. Identification of product and Specification section
  - 9. Location of Project
  - 10. Type of inspection or test
  - 11. Results of test
  - 12. Observations regarding compliance with the Contract Documents
- F. Perform additional services as required.
- G. The laboratory is not authorized to release, revoke, alter or enlarge on requirements of the Contract Documents, or approve or accept any portion of the Work.

#### **1.04 CONTRACTOR RESPONSIBILITIES**

- A. Cooperate with laboratory personnel, provide access to Work and/or manufacturer's requirements.
- B. Provide to the laboratory, representative samples, in required quantities, of materials to be tested.
- C. Furnish copies of mill test reports.

- D. Furnish required labor and facilities to:
  - 1. Provide access to Work to be tested;
  - 2. Obtain and handle samples at the site;
  - 3. Facilitate inspections and tests;
  - 4. Build or furnish a holding box for concrete cylinders or other samples as required by the laboratory.
- E. Notify the laboratory sufficiently in advance of operation to allow for the assignment of personnel and schedules of tests.
- F. Laboratory Tests: Where such inspection and testing are to be conducted by an independent laboratory agency, the sample(s) shall be selected by such laboratory or agency, or the Engineer, and shipped to the laboratory by the Contractor at Contractor's expense.
- G. Copies of all correspondence between the Contractor and testing agencies shall be provided to the Engineer.

#### **1.05 QUALITY ASSURANCE**

- A. Testing shall be in accordance with all pertinent codes and regulations and with procedures and requirements of the American Society for Testing and Materials (ASTM).

#### **1.06 PRODUCT HANDLING**

- A. Promptly process and distribute all required copies of test reports and related instructions to insure all necessary retesting or replacement of materials with the least possible delay in the progress of the Work.

#### **1.07 FURNISHING MATERIALS**

- A. The Contractor shall be responsible for furnishing all materials necessary for testing.

#### **1.08 CODE COMPLIANCE TESTING**

- A. Inspections and tests required by codes or ordinances or by a plan approval authority, and made by a legally constituted authority, shall be the responsibility

of, and shall be paid for by the Contractor, unless otherwise provided in the Contract Documents.

### **1.09 CONTRACTOR'S CONVENIENCE TESTING**

- A. Inspection or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

### **1.10 SCHEDULES FOR TESTING**

- A. Establishing Schedule
  - 1. The Contractor shall, by advance discussion with the testing laboratory selected by the Owner, determine the time required for the laboratory to perform its tests and to issue each of its findings, and make all arrangements for the testing laboratory to be on site to provide the required testing.
  - 2. Provide all required time within the construction schedule.
- B. When changes of construction schedule are necessary during construction, coordinate all such changes of schedule with the testing laboratory as required.
- C. When the testing laboratory is ready to test according to the determined schedule, but is prevented from testing or taking specimens due to incompleteness of the Work, all extra costs for testing attributable to the delay will be back-charged to the Contractor and shall not be borne by the Owner.

### **1.11 TAKING SPECIMENS**

- A. Unless otherwise provided in the Contract Documents, all specimens and samples for tests will be taken by the testing laboratory.

### **1.12 TRANSPORTING SAMPLES**

- A. The Contractor shall be responsible for transporting all samples, except those taken by testing laboratory personnel, to the testing laboratory.

END OF SECTION

## SECTION 01510 TEMPORARY FACILITIES

### PART 1 - GENERAL

#### 1.01 SCOPE

- A. Temporary facilities required for this work include, but are not necessarily limited to:
  - 1. Temporary utilities such as water and electricity (may be provided by water truck and generators).
  - 2. First aid facilities.
  - 3. Sanitary facilities.
  - 4. Potable water.
  - 5. Temporary enclosures and construction facilities.

#### 1.02 GENERAL

- A. First aid facilities, sanitary facilities and potable water shall be available on the Project site on the first day that any activities are conducted on site. The other facilities shall be provided as the schedule of the Project warrants.
- B. Maintenance: Use all means necessary to maintain temporary facilities in proper and safe condition throughout progress of the Work. In the event of loss or damage, immediately make all repairs and replacements necessary, at no additional cost to the Owner.
- C. Removal: Remove all such temporary facilities and controls as rapidly as progress of the Work will permit.

#### 1.03 TEMPORARY UTILITIES

- A. General
  - 1. Provide and pay all costs for all water, electricity and other utilities required for the performance of the Work.
  - 2. Pay all costs for temporary utilities until Project completion.
  - 3. Costs for temporary utilities shall include all power, water and the like necessary for testing equipment as required by the Contract Documents.
- B. Temporary Water: Provide all necessary temporary piping, and upon completion of the Work, remove all such temporary piping. The Contractor shall contact the Macon Water Authority and request a backflow preventer and hydrant meter. The Contractor shall install each at any connection to the water

system and pay base fee and cost per use.

C. Temporary Electricity

1. Provide all necessary wiring for the Contractor's use.
2. Furnish, locate and install area distribution boxes such that the individual trades may use, their own construction type extension cords to obtain adequate power, and artificial lighting at all points where required by inspectors and for safety.

#### **1.04 FIRST AID FACILITIES**

- A. The Contractor shall provide a suitable first aid station, equipped with all facilities and medical supplies necessary to administer emergency first aid treatment. The Contractor shall have standing arrangements for the removal and hospital treatment of any injured person. All first aid facilities and emergency ambulance service shall be made available by the Contractor to the Owner and the Engineer's personnel.

#### **1.05 SANITARY FACILITIES**

- A. Prior to starting the Work, the Contractor shall furnish, for use of Contractor's personnel on the job, all necessary toilet facilities which shall be secluded from public observation. These facilities shall be either chemical toilets or shall be connected to the Owner's sanitary sewer system. All facilities, regardless of type, shall be kept in a clean and sanitary condition and shall comply with the requirements and regulations of the area in which the Work is performed. Adequacy of these facilities will be subject to the Engineer's review and maintenance of same must be satisfactory to the Engineer at all times.

#### **1.06 POTABLE WATER**

- A. The Contractor shall be responsible for furnishing a supply of potable drinking water for employees, subcontractors, inspectors, engineers and the Owner who are associated with the Work.

#### **1.07 ENCLOSURES AND CONSTRUCTION FACILITIES**

- A. Furnish, install and maintain for the duration of construction, all required scaffolds, tarpaulins, canopies, steps, bridges, platforms and other temporary construction necessary for proper completion of the Work in compliance with all pertinent safety and other regulations.

END OF SECTION

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**SECTION 01540**  
**JOB SITE SECURITY**

**PART 1 - GENERAL**

**1.01 BARRICADES, LIGHTS AND SIGNALS**

- A. The Contractor shall furnish and erect such barricades, fences, lights and danger signals and shall provide such other precautionary measures for the protection of persons or property and of the Work as necessary. Barricades shall be painted in a color with reflective tape, paint, reflective plastic medallions or lights so that they will be visible at night. From sunset to sunrise, the Contractor shall furnish and maintain at least one light at each barricade and sufficient numbers of barricades shall be erected to keep vehicles from being driven on or into any Work under construction.
- B. The Contractor will be held responsible for all damage to the Work due to failure of barricades, signs and lights and whenever evidence is found of such damage, the Contractor shall immediately remove the damaged portion and replace it at Contractor's cost and expense. The Contractor's responsibility for the maintenance of barricades, signs and lights shall not cease until the Project has been accepted by the Owner.

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END OF SECTION

## SECTION 01569

### **SAFETY IN WATER / WASTEWATER WORKS**

#### **PART 1 - GENERAL**

##### **1.01 SCOPE**

- A. The Contractor shall be responsible for conducting all Work in a safe manner and shall take reasonable precautions to ensure the safety and protection of workers, property and the general public. The Contractor's responsibility for protection is described in Articles 21 and 22 of the General Conditions.
- B. All construction shall be conducted in accordance with the latest applicable requirements for Part 1926 of the Occupational Safety and Health Act, Safety and Health Regulations for Construction, Section 107 of the Contract Work Hours and Safety Standards Act, as well as any other local, state or federal safety codes and regulations.
- C. The Contractor shall designate a trained and qualified employee who is to be responsible for ensuring that the Work is performed safely and in conformance with all applicable regulations.
- D. The Contractor shall determine the safety hazards involved in prosecuting the Work and the precautions necessary to conduct the Work safely. If the Contractor is unsure as to any special hazards which may be unique to the various processes and facilities at the project site, it shall be Contractor's responsibility to determine such information prior to beginning the Work.
- E. The Contractor shall bear all risks associated with performing the Work and shall fully indemnify and hold harmless the Owner and Engineer.

##### **1.02 SPECIAL REQUIREMENTS – Not Used.**



END OF SECTION

## SECTION 01610 TRANSPORTATION & HANDLING

### PART 1 - GENERAL

#### 1.01 SCOPE

- A. The Contractor shall provide transportation of all equipment, materials and products furnished under these Contract Documents to the Work site. In addition, the Contractor shall provide preparation for shipment, loading, unloading, handling and preparation for installation and all other work and incidental items necessary or convenient to the Contractor for the satisfactory prosecution and completion of the Work.
- B. All equipment, materials and products damaged during transportation or handling shall be repaired or replaced by the Contractor at no additional cost to the Owner prior to being incorporated into the Work.

#### 1.02 TRANSPORTATION

- A. All equipment, materials and products shall be suitably boxed, crated or otherwise protected during transportation.
- B. Where equipment, materials or products will be installed using cranes or hoisting equipment, the Contractor shall ensure that the weights of the equipment or material do not exceed the capacity of the cranes or hoisting equipment.
- C. Small items and appurtenances such as gauges, valves, switches, instruments and probes which could be damaged during shipment shall be removed from the equipment prior to shipment, packaged and shipped separately. All openings shall be plugged or sealed to prevent the entrance of water or dirt.

#### 1.03 HANDLING

- A. All equipment, materials and products shall be carefully handled to prevent damage or excessive deflections during unloading or transportation.
- B. Lifting and handling drawings and instructions furnished by the manufacturer or supplier shall be strictly followed. Eyebolts or lifting lugs furnished on the equipment shall be used in handling the equipment. Shafts and operating mechanisms shall not be used as lifting points. Spreader bars or lifting beams shall be used when the distance between lifting points exceeds that permitted by standard industry practice.
- C. Under no circumstances shall equipment or products such as pipe, structural

steel, castings, reinforcement, lumber, piles, poles, etc., be thrown or rolled off of trucks onto the ground.

- D. Slings and chains shall be padded as required to prevent damage to protective coatings and finishes.

END OF SECTION

## SECTION 01611 STORAGE & PROTECTION

### PART 1 - GENERAL

#### 1.01 SCOPE

- A. The work under this Section includes, but is not necessarily limited to, the furnishing of all labor, tools and materials necessary to properly store and protect all materials, equipment, products and the like, as necessary for the proper and complete performance of the Work.

#### 1.02 STORAGE AND PROTECTION

- A. Storage
1. Maintain ample way for foot traffic at all times, except as otherwise approved by the Engineer.
  2. All property damaged by reason of storing of material or accessing the site shall be properly replaced at no additional cost to the Owner.
  3. Packaged materials shall be delivered in original unopened containers and so stored until ready for use.
  4. All materials shall meet the requirements of these Specifications at the time that they are used in the Work.
  5. Store products in accordance with manufacturer's instructions.
- B. Protection
1. Use all means necessary to protect the materials, equipment and products of every section before, during and after installation and to protect the installed work and materials of all other trades.
  2. All materials shall be delivered, stored and handled to prevent the inclusion of foreign materials and damage by water, breakage, vandalism or other causes.
  3. Substantially constructed weathertight storage sheds, with raised floors, shall be provided and maintained as may be required to adequately protect those materials and products stored on the site which may require protection from damage by the elements.
- C. Replacements: In the event of damage, immediately make all repairs and replacements necessary for the approval of the Engineer and at no additional cost to the Owner.
- D. Equipment and products stored outdoors shall be supported above the ground on suitable wooden blocks or braces arranged to prevent excessive deflection or bending between supports. Items such as pipe, structural steel and sheet

construction products shall be stored with one end elevated to facilitate drainage.

- E. Unless otherwise permitted in writing by the Engineer, building products and materials such as cement, grout, plaster, gypsumboard, particleboard, resilient flooring, acoustical tile, paneling, finish lumber, insulation, wiring, etc., shall be stored indoors in a dry location. Building products such as rough lumber, plywood, concrete block and structural tile may be stored outdoors under a properly secured waterproof covering.
- F. Tarps and other coverings shall be supported above the stored equipment or materials on wooden strips to provide ventilation under the cover and minimize condensation. Tarps and covers shall be arranged to prevent ponding of water.

### **1.03 EXTENDED STORAGE**

- A. In the event that certain items of major equipment such as air compressors, pumps and mechanical aerators have to be stored for an extended period of time, the Contractor shall provide satisfactory long-term storage facilities which are acceptable to the Engineer. The Contractor shall provide all special packaging, protective coverings, protective coatings, power, nitrogen purge, desiccants, lubricants and exercising necessary or recommended by the manufacturer to properly maintain and protect the equipment during the period of extended storage.

### **1.04 OWNER FURNISHED EQUIPMENT**

- A. The Contractor shall provide storage and protection for all Owner furnished equipment and materials, including extended storage as specified above.

END OF SECTION

## SECTION 01701

# CONTRACT CLOSEOUT PROCEDURES

### PART 1 – GENERAL

#### 1.01 REQUIREMENTS INCLUDED

- A. Administrative provisions for Substantial Completion and for final acceptance.

#### 1.02 RELATED REQUIREMENTS

- A. Section 01340 – Shop Drawings, Product Data and Samples
- B. Section 01720 – Record Documents
- C. Section 01730 – Operation and Maintenance Data
- D. Section 01740 – Warranties and Bonds

#### 1.03 SUBSTANTIAL COMPLETION

- A. When the Contractor considers the work substantially complete, he shall prepare a punch list of uncompleted items and send to the Engineer for review. At the same time, the Contractor shall request in writing that the Engineer schedules a pre-final inspection.
- B. The Engineer will review the punch list submitted by the Contractor and determine if the project is substantially complete.
- C. If the Engineer determines that the project is not substantially complete, he will notify the Contractor in writing which items need to be finished before the project can be considered substantially complete. The Contractor shall continue working to complete all punch list items and resubmit a revised punch list when he considers the work is substantially complete.
- D. When the Engineer determines that the work is substantially complete, he will schedule a pre-final inspection with the Owner, Contractor and Engineer. A final punch list will be prepared at this time.
- E. After all punch list items have been completed, the Contractor shall send a request in writing to the Engineer to schedule a final inspection. When all punch list items are complete, the Engineer will issue a certificate of substantial completion.

#### **1.04 FINAL COMPLETION**

- A. When the Contractor considers that all of the work is complete, he shall submit the following certificates:
  - 1. All work has been completed and inspected for compliance with the Contract Documents and all deficiencies listed with the certificate of substantial completion have been corrected.
  - 2. All equipment and systems have been tested, adjusted and are fully operational.
  - 3. Owner's personnel have been fully instructed in the operation of all equipment (include sign off for each system).
  - 4. Work is complete and ready for final inspection.
- B. Should Engineer's inspection find work incomplete, he will promptly notify Contractor in writing listing observed deficiencies.
- C. Contractor shall remedy deficiencies and send a request for another final inspection.
- D. When Engineer finds work is complete, he will process final pay request documents.

#### **1.05 REINSPECTION FEES**

- A. Should status of completion of work require reinspection by Engineer due to failure of work to comply with Contractor's claims on pre-final or final inspection, the Owner will back charge the Contractor for each extra reinspection required of the Engineer. The Contractor shall reimburse the Owner by certified check prior to final payment of retainage.

#### **1.06 CLOSEOUT SUBMITTALS**

- A. Evidence of Compliance with Requirements of Governing Authorities –
  - 1. Certificate of Occupancy as required by local codes.
  - 2. Certificates of Inspection approvals required for plumbing, mechanical and electrical systems as required by local codes if applicable.
  - 3. Project acceptance and punchlist items as required by Macon Water Authority Inspector.
- B. Project Record Documents – Under provisions of Section 01720.
- C. Operation and Maintenance Data – Under provisions of Section 01730.

- D. Warranties and Bonds – Under provisions of Section 01740.
- E. Keys and Keying Schedule.
- F. Evidence of Payment and Release of Liens – In accordance with Conditions of the Contract.
- G. Consent of Surety to Final Payment – Consent of Surety is to be sent by Surety directly to Carter and Sloope to the attention of the Project Engineer.

#### **1.07 APPLICATION FOR FINAL PAYMENT**

- A. Prior to application for final payment, the Contractor shall give the Engineer a list of all additions or deletions not previously approved by change order.
- B. The Engineer will review this list and prepare a final closeout change order for the items that are justified by the terms of the contract or approved by field order.
- C. After approval of the final closeout change order the Contractor may submit his application for final payment.

**PART 2 – PRODUCTS: Not Used.**

**PART 3 – EXECUTION: Not Used.**



END OF SECTION

## **SECTION 01710 CLEANING**

### **PART 1 - GENERAL**

#### **1.01 SCOPE**

- A. This Section covers the general cleaning which the Contractor shall be required to perform both during construction and before final acceptance of the Project unless otherwise shown on the Drawings or specified elsewhere in these Specifications.

#### **1.02 QUALITY ASSURANCE**

- A. Daily, and more often if necessary, conduct inspections verifying that requirements of cleanliness are being met.
- B. In addition to the standards described in this Section, comply with all pertinent requirements of governmental agencies having jurisdiction.

#### **1.03 HAZARDOUS MATERIAL AND WASTE**

- A. The Contractor shall handle hazardous waste and materials in accordance with applicable local, state, and federal regulations. Waste shall also be disposed of in approved landfills as applicable.
- B. The Contractor shall prevent accumulation of wastes which create hazardous conditions.
- C. Burning or burying rubbish and waste materials on the site shall not be allowed.
- D. Disposal of hazardous wastes or materials into sanitary or storm sewers shall not be allowed.

#### **1.04 DISPOSAL OF SURPLUS MATERIALS**

- A. Unless otherwise shown on the Drawings, specified or directed, the Contractor shall legally dispose off the site all surplus materials and equipment from demolition and shall provide suitable off-site disposal site.

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## **PART 2 - PRODUCTS**

### **2.01 CLEANING MATERIALS AND EQUIPMENT**

- A. Provide all required personnel, equipment and materials needed to maintain the specified standard of cleanliness.

### **2.02 COMPATIBILITY**

- A. Use only the cleaning materials, methods and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material or as approved by the Engineer.

## **PART 3 - EXECUTION**

### **3.01 PROGRESS CLEANING**

- A. General
  - 1. Do not allow the accumulation of scrap, debris, waste material and other items not required for construction of this Work.
  - 2. At least each week, and more often if necessary, completely remove all scrap, debris and waste material from the job site.
  - 3. Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the environment.
- B. Site
  - 1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris and waste material. Remove all such items to the place designated for their storage.
  - 2. Restack materials stored on site weekly.
  - 3. At all times maintain the site in a neat and orderly condition which meets the approval of the Engineer.

### **3.02 FINAL CLEANING**

- A. Definitions: Unless otherwise specifically specified, "clean" for the purpose of this Article shall be interpreted as the level of cleanliness generally provided by commercial building maintenance subcontractors using commercial quality building maintenance equipment and materials.
- B. General: Prior to completion of the Work, remove from the job site all tools, surplus materials, equipment, scrap, debris and waste. Conduct final progress cleaning as described in 3.01 above.

- C. Site: Unless otherwise specifically directed by the Engineer, hose down or pressure wash all paved areas on the site and all public sidewalks directly adjacent to the site; rake clean other surfaces of the grounds. Completely remove all resultant debris.
- D. Post-Construction Cleanup: All evidence of temporary construction facilities, haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other evidence of construction, as directed by the Engineer.
- E. Restoration of Landscape Damage: Any landscape feature damaged by the Contractor shall be restored as nearly as possible to its original condition at the Contractor's expense. The Engineer will decide what method of restoration shall be used.
- F. Timing: Schedule final cleaning as approved by the Engineer to enable the Owner to accept the Project.

### **3.03 CLEANING DURING OWNER'S OCCUPANCY**

Should the Owner occupy the Work or any portion thereof prior to its completion by the Contractor and acceptance by the Owner, responsibilities for interim and final cleaning of the occupied spaces shall be as determined by the Engineer in accordance with the Supplementary Conditions of the Contract Documents.

END OF SECTION

## SECTION 01720 RECORD DOCUMENTS

### PART 1 - GENERAL

#### 1.01 SCOPE

- A. The work under this Section includes, but is not necessarily limited to, the compiling, maintaining, recording and submitting of project record documents as herein specified.
- B. Record documents include, but are not limited to:
  - 1. Drawings;
  - 2. Specifications;
  - 3. Change orders and other modifications to the Contract;
  - 4. Engineer field orders or written instructions, including Requests for Information (RFI) and Clarification Memorandums;
  - 5. Reviewed shop drawings, product data and samples;
  - 6. Test records.
- C. The Contractor shall maintain on the Project site throughout the Contract Time an up to date set of Record Drawings.

#### 1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Storage
  - 1. Store documents and samples in the Contractor's field office, apart from documents used for construction.
  - 2. Provide files and racks for storage of documents.
  - 3. Provide locked cabinet or secure storage space for storage of samples.
- B. File documents and samples in accordance with format of these Specifications.
- C. Maintenance
  - 1. Maintain documents in a clean, dry, legible condition and in good order.
  - 2. Do not use record documents for construction purposes.
  - 3. Maintain at the site for the Owner one copy of all record documents.
- D. Make documents and samples available at all times for inspection by Engineer.
- E. Failure to maintain the Record Documents in a satisfactory manner may be cause for withholding of a certificate for payment.

### 1.03 QUALITY ASSURANCE

- A. Unless noted otherwise, Record Drawings shall provide dimensions, distances and coordinates to the nearest 0.1 foot.
- B. Unless noted otherwise, Record Drawings shall provide elevations to the nearest 0.01 foot for all pertinent items constructed by the Contractor.
- C. The Contractor shall employ a currently registered professional engineer or land surveyor to prepare the Record Drawings from a post-construction, field run survey. The Record Drawings shall provide elevations to the nearest 0.01 foot for all manhole inverts, manhole frames and other pertinent items constructed by the Contractor. The Record Drawings shall provide dimensions, distances, and coordinates to the nearest 0.01 foot and horizontal angles to the nearest 10 seconds.

### 1.04 RECORDING

- A. Label each document "PROJECT RECORD" in neat, large printed letters.
- B. Recording
  - 1. Record information concurrently with construction progress.
  - 2. Do not conceal any work until required information is recorded.

### 1.05 RECORD DRAWINGS

- A. See specific requirement specified under Section 00800 – Supplementary Conditions, Policy “C”.
- B. Legibly mark drawings to record actual construction, including:
  - 1. All Construction
    - a. Changes of dimension and detail.
    - b. Changes made by Requests for Information (RFI), field order, clarification memorandums or by change order.
    - c. Details not on original Drawings.
  - 2. Site Improvements, Including Underground Utilities
    - a. Horizontal and vertical locations of all exposed and underground abandoned utilities and appurtenances, both newly abandoned pipe and those utilities encountered, referenced to permanent surface improvements.
    - b. Location of and dimensions of roadways and parking areas, providing dimensions to back of curb when present.
    - c. The locations shall be referenced to at least two easily identifiable, permanent landmarks (e.g., power poles, valve markers, etc.) or

- benchmarks.
- d. The Record Drawings shall include the horizontal angle and distance between manhole covers.
- 3. Structures
  - a. Depths of various elements of foundation in relation to finish first floor datum or top of wall.
  - b. Location of internal and buried utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.

## **1.06 SPECIFICATIONS**

- A. Legibly mark each section to record:
  - 1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
  - 2. Changes made by Requests for Information (RFI), field order, clarification memorandums, or by change order.

## **1.07 SUBMITTAL**

- A. At contract closeout, deliver Record Documents to the Engineer for the Owner.
- B. Accompany submittal with transmittal letter, in duplicate, containing:
  - 1. Date
  - 2. Project title and number
  - 3. Contractor's name and address
  - 4. Title and number of each record document
  - 5. Signature of Contractor or Contractor's authorized representative
  - 6. Name and address of firm preparing record document
  - 7. Stamp by a professional engineer or land surveyor



END OF SECTION

## SECTION 01740 WARRANTIES & BONDS

### PART 1 - GENERAL

#### 1.01 PROJECT MAINTENANCE AND WARRANTY

- A. Maintain and keep in good repair the Work covered by these Drawings and Specifications until acceptance by the Owner.
- B. The Contractor shall warrant for a period of one year from the date of Owner's written final acceptance of the Project that the completed Work is free from all defects due to faulty products or workmanship and the Contractor shall promptly make such corrections as may be necessary by reason of such defects. The Owner will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments or other work that may be made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect throughout the warranty period.
- C. The Contractor shall not be obligated to make replacements which become necessary because of ordinary wear and tear, or as a result of improper operation or maintenance, or as a result of improper work or damage by another Contractor or the Owner, or to perform any work which is normally performed by a maintenance crew during operation.
- D. In the event of multiple failures of major consequences prior to the expiration of the one year warranty described above, the affected unit shall be disassembled, inspected and modified or replaced as necessary to prevent further occurrences. All related components which may have been damaged or rendered non-serviceable as a consequence of the failure shall be replaced. A new 12 month warranty against defective or deficient design, workmanship, and materials shall commence on the day that the item is reassembled and placed back into operation. As used herein, multiple failure shall be interpreted to mean two or more successive failures of the same kind in the same item or failures of the same kind in two or more items. Major failures may include, but are not limited to, cracked or broken housings, piping, or vessels, excessive deflections, bent or broken shafts, broken or chipped gear teeth, premature bearing failure, excessive wear or excessive leakage around seals. Failures which are directly and clearly traceable to operator abuse, such as operations in conflict with published operating procedures or improper maintenance, such as substitution of unauthorized replacement parts, use of incorrect lubricants or chemicals, flagrant over-or under-lubrication and using maintenance procedures not conforming with published maintenance instructions, shall be exempted from the scope of the one year warranty. Should multiple failures occur in a given item, all products of the same size and type shall be disassembled,

inspected, modified or replaced as necessary and rewarranted for one year.

- E. The Contractor shall, at Contractor's own expense, furnish all labor, materials, tools and equipment required and shall make such repairs and removals and shall perform such work or reconstruction as may be made necessary by any structural or functional defect or failure resulting from neglect, faulty workmanship or faulty materials, in any part of the Work performed by the Contractor. Such repair shall also include refilling of trenches, excavations or embankments which show settlement or erosion after backfilling or placement.
- F. Except as noted on the Drawings or as specified, all structures such as embankments and fences shall be returned to their original condition prior to the completion of the Contract. Any and all damage to any facility not designated for removal, resulting from the Contractor's operations, shall be promptly repaired by the Contractor at no cost to the Owner.
- G. The Contractor shall be responsible for all road and entrance reconstruction and repairs and maintenance of same for a period of one year from the date of final acceptance. In the event the repairs and maintenance are not made immediately and it becomes necessary for the owner of the road to make such repairs, the Contractor shall reimburse the owner of the road for the cost of such repairs.
- H. In the event the Contractor fails to proceed to remedy the defects upon notification within 15 days of the date of such notice, the Owner reserves the right to cause the required materials to be procured and the work to be done, as described in the Drawings and Specifications, and to hold the Contractor and the sureties on Contractor's bond liable for the cost and expense thereof.
- I. Notice to Contractor for repairs and reconstruction will be made in the form of a registered letter addressed to the Contractor at Contractor's home office.
- J. Neither the foregoing paragraphs nor any provision in the Contract Documents, nor any special guarantee time limit implies any limitation of the Contractor's liability within the law of the place of construction.

END OF SECTION

**PART 1 - GENERAL****1.01 SCOPE**

- A. Furnish all labor, materials, equipment and incidentals necessary to perform all excavation, trenching and backfill required to complete the work shown on the Drawings and specified herein. The work shall include, but is not limited to; stripping of topsoil, excavation for structures, vaults, ducts and pipes; all backfilling, embankment and grading; disposal of waste and surplus materials; and all related work such as sheeting, bracing and dewatering.
- B. Topsoil excavated under this Section shall be salvaged by the Contractor for use as specified under Section 02920.
- C. Obtain materials required for backfill, fill, or embankments in excess of that available on the site from other sources. Include all costs of obtaining off-site materials in the contract price.

**1.02 RELATED WORK**

- A. Section 02510 – Water Distribution

**1.03 REFERENCES**

- A. American Society for Testing and Materials.

**1.04 MEASUREMENT AND PAYMENT**

- A. There will be no separate measurement or payment for excavation, trenching and backfilling.

**1.05 TESTING SERVICES**

- A. The Contractor shall obtain the service of a certified testing service to perform all compaction tests specified herein. The cost of these services shall be at Contractor's expense and shall be included in the price bid for the project item to which the testing applies.
- B. Soil testing shall be performed by an accredited testing laboratory selected by the Contractor and approved by the Owner in accordance with Section 01410. Tests shall be performed in accordance with applicable ASTM or AASHTO standard methods, unless otherwise specified.
- C. All materials to be used in the work shall be tested prior to the use to show

conformance with the requirements of these specifications. Test reports shall be delivered to the Engineer in duplicate prior to use of any material in the work.

- D. Materials being used in the work, which have been tested previously, may be subjected to further tests from time to time and may be rejected if found defective. Rejected materials shall be removed from the project immediately, notwithstanding the results of former tests to which they have been subjected.
- E. Soil tests shall be performed on subgrades prior to the placement of fill or backfill materials. Tests shall also be performed immediately after the placement of each layer of fill or backfill materials to show conformance with the field density and optimum moisture requirements of these specifications. Not less than one set of tests shall be performed for every 800 sq. ft. of area for each layer. No additional layers shall be placed until the density of each layer has been approved.
- F. If the Engineer determines, based on tests reports and inspections, that subgrades or layers which have been placed are below the specified density, the Contractor shall provide additional compaction and testing at no additional expense to the Owner.

## **1.05 PROTECTION**

- A. Sheeting and Bracing
  - 1. Furnish, put in place, and maintain such sheeting and bracing as may be required to support the sides of excavations, to prevent any movement which could in any way diminish the ridge of the excavation below that necessary for proper construction, and to protect adjacent structures from undermining or other damage. If the Engineer is of the opinion that at any points sufficient or proper supports have not been provided, he may order additional supports put in at the expense of the Contractor, and compliance with such order shall not relieve or release the Contractor from his responsibility for the sufficiency of such supports. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled and rammed. Where soil cannot be properly compacted to fill a void, lean concrete shall be used as backfill at no additional expense to the Owner. Sheeting and Bracing requirements are further defined in OSHA Standards, Subpart P, Part 1926 of the Code of Federal Regulations.
  - 2. The Contractor shall construct the sheeting outside the neat lines of the foundation unless indicated otherwise to the extent he deems it

desirable for his method of operation. Sheeting shall be plumb and securely braced and tied in position. Sheeting and bracing shall be adequate to withstand all pressures to which the trench will be subjected. Any movement or bulging which may occur shall be corrected by the Contractor at his own expense so as to provide the necessary clearances and dimensions.

3. Where sheeting and bracing is required to support the sides of excavations, the Contractor shall engage a Professional Engineer, registered in the State of Georgia to design the sheeting and bracing. The sheeting and bracing installed shall be in conformity with the design, and certification of this shall be provided by the Professional Engineer.
4. The Contractor shall leave in place to be embedded in the backfill all sheeting and bracing not shown on the Drawings but which the Engineer may direct him in writing to leave in place at any time during the progress of the work for the purpose of preventing injury to structures, utilities, or property, whether public or private. The Engineer may direct that timber used for sheeting and bracing be cut off at any specified elevation. The contractor will be paid for such sheeting directed by the Engineer to be left in place in accordance with the General Conditions. All timber sheeting to be left in place shall be treated.
5. All sheeting and bracing not left in place shall be carefully removed in such manner as not to disturb utilities, or property. All voids left or caused by withdrawal of sheeting shall be immediately refilled with sand by ramming with tools especially adapted to that purpose, or otherwise as acceptable to Engineer and Owner.
6. The right of the Engineer to order sheeting and bracing left in place shall not be construed as creating any obligation on his part to issue such orders, and his failure to exercise his right to do so shall not relieve the Contractor from liability for damages to persons or property occurring from or upon the work on the part of the Contractor to leave in place sufficient sheeting and bracing to prevent any caving or moving of the ground.
7. No sheeting is to be withdrawn if driven below mid-diameter of any pipe, and under no circumstances shall any sheeting be cut off at a level lower than 1 ft above the top of any pipe. The cost of said sheeting shall be part of the base bid.

**B. Dewatering and Drainage**

1. The Contractor shall at all times during construction provide and maintain proper equipment and facilities to remove all water entering excavations, and shall keep such excavations dry so as to obtain a satisfactory undisturbed subgrade foundation condition until the fills, structures or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural levels. The Contractor shall engage a Geotechnical Engineer, Registered in the State of Georgia, where required, to design the dewatering system. The Contractor shall submit to the Engineer for review the design of the dewatering systems prior to commencing work.
2. The Contractor shall furnish, install, maintain, operate and remove a temporary dewatering system consisting of trenches, sump pits, deep wells, well points, or other methods as required to lower and control the groundwater level so that the pipes may be installed in the dry. The Contractor shall assume full responsibility for the design and installation of an adequate dewatering system. The Contractor shall, at his own expense, correct all damage resulting from inadequacy of the dewatering system or from flooding of the construction site from other causes.
3. The Contractor shall maintain the water level below the excavated area for the various phases of the work continuously and shall make such provisions as may be necessary to avoid interruptions due to weather, labor strikes, power failures, or other delays. He shall provide and have ready for immediate use at all times diesel or gasoline powered standby pumping units to serve the system in case of failure of the normal pumping units.
4. Piping and boiling, or any form of uncontrolled seepage, in the bottom or sides of the excavation shall be prevented at all times. If for any reason the dewatering system is found to be inadequate to meet the requirements set forth herein, the Contractor shall at his own expense make such additions, changes and/or replacements as necessary to provide a satisfactory dewatering system.
5. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation. Well or sump installations shall be constructed with proper filters to prevent drawing of finer grained soil from the surrounding ground.
6. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the

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Excavation, Trenching & Backfill for Utility Systems  
excavation, drained to sumps, and pumped from the excavation to maintain a bottom free from standing water.

7. The Contractor shall take all additional precautions to prevent uplift during construction. The Contractor shall maintain the groundwater level below the pipe so flotation is prevented.
8. Drainage water shall be disposed of through a desilting basin which will prevent the discharge of sediment into any surface waters or existing drains, and to prevent flow or seepage back into the excavated area.
9. Flotation shall be prevented by the Contractor by maintaining a positive and continuous operation of the dewatering system. The Contractor shall be fully responsible and liable for all damages which may result from failure of this system.
10. Removal of dewatering equipment shall be required. The material and equipment constituting the system shall be removed by the Contractor.
11. The Contractor shall take all necessary precautions to preclude the accidental discharge of fuel, oil, etc. in order to prevent adverse effects on groundwater quality.

C. Culverts and Ditches

1. Protect drainage culverts from damage. If damaged, restore to satisfactory condition at no cost to the Owner.
2. If it is necessary to remove a culvert, do not replace until the proposed pipeline is installed and trench backfilled and compacted to the subgrade of the culvert. Replace culverts to the line and grade established by the Owner.
3. Backfill minor drainage ditches so that the upper one foot of material between ditch banks is topsoil, loam, or clay.
4. Compact this material for the full ditch width to a minimum of 95% of maximum density as determined by ASTM D 698.
5. Ditches steeper than 2:1 slope shall be protected and reinforced with a synthetic fiber or grid material, Type III and rip-rap. Contractor has the option to use plain filter fabric on flatter slopes. Correct any ditch erosion occurring as a result of pipeline construction at no cost to the Owner.



D. Water, Gas, Telephone, Power, Cable

1. Protect all other utilities from damage. Notify utility owner prior to start of excavation as directed in the General Conditions and on the Contract Drawing. If, during the work the utility is damaged, notify the utility company and the Owner immediately. Do not attempt to repair or replace damaged utilities unless so directed by the utility company and approved by the Engineer. Payment for restoration of damaged utilities shall be the Contractor's responsibility.

## 1.06 JOB CONDITIONS

A. Soils

1. The contractor shall examine the site and undertake his own soil borings prior to submitting his bid, taking into consideration all conditions that may affect his work. The Owner and Engineer will not assume responsibility for variations of subsoil quality or conditions at locations other than places shown and at the time the investigation was made. The Contractor shall accept the site in its existing condition and shall assume the risk of encountering whatever materials as may occur. The Contractor shall make his own determination of the soil structure and site conditions as it may affect the work.

B. Existing Utilities

1. Locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
2. Should uncharted, or incorrectly charted, piping appear in the excavation, consult the Engineer and the Owner of such piping or utility immediately for directions.
3. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
4. Demolish and completely remove from site existing underground utilities indicated on the Drawings to be removed.

C. Protection of Persons and Property

1. Barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights as recommended by authorities having jurisdiction.
2. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

## **1.07 SUBMITTALS**

- A. Submit to the Engineer for review in accordance with Section 01340 the proposed methods of construction, including dewatering, excavation, filling, compaction, and backfilling for the various portions of the work. Review shall be for method only. The Contractor shall remain responsible for the adequacy and safety of the methods.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS**

- A. Backfill materials shall be natural or processed mineral soils, blasted and crushed rock, or masonry rubble. Fill materials shall be free of all organic material, trash, snow, ice, frozen soil or other objectionable materials. Clay soils having natural in-place water content in excess of 30 percent are considered unsuitable for stockpiling and/or future use. Fill materials to be used have been classified under categories specified below.
- B. Embedment materials listed here include a number of processed materials plus the soil types defined by the USCS Soil Classification Systems in ASTM D2487. These materials are grouped into categories according to their suitability for this application:
  1. Class I: Angular 6 to 40 mm (1/4 to 1-1/2 inches), graded stone including a number of fill materials that have regional significance such as coral, slag, cinders, crushed stone, and crushed shells.
  2. Class II: Coarse sands and gravels with maximum particle size of 40 mm (1-1/2 inches), including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil types GW, GP, SW and SP are included in this class.
  3. Class III: Fine sand and clayey gravels, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Soil types GM, GC, SM and SC are included in this class.

4. Class IV: Silt, silty clays and clays including inorganic clays and silts of medium to high plasticity and liquid limits. Soil types MH, CH and CL are included in this class. These materials are not to be used for initial backfill.
  5. Class V: This class includes the organic soils OL, OH and PT as well as soils containing frozen earth, debris, rocks larger than 40 mm (1-1/2 inches) in diameter, and other foreign materials. These materials shall not be used for backfill.
- C. Granular Fill for bedding, shall be sound, hard, durable crushed stone meeting the gradation requirements shown on the plans for different building materials and types of pipe.
- D. Riprap shall be sound, durable rock which is roughly rectangular shape and of suitable quality to ensure permanence in the condition in which it is to be used. Rounded stones, boulders, sandstone or similar soft stone will not be acceptable. Material shall be free from overburden, spoil, shale, and organic material. Each load of riprap shall be reasonably well graded from the smallest to the maximum size specified and shall conform to State of Georgia Department of Transportation Standard Specifications Section 805. Riprap shall consist of a durable field or quarry stone shaped roughly as rectangular blocks. Riprap shall weigh between 50-100 lbs. each with at least 60 percent weighing over 100 lbs. and no more than 10 percent shall weigh 50 lbs. or Less. One dimension of each exposed riprap shall be not less than 12-in. The joints in the riprap shall be filled with spalls of suitable size to construct a solid, stable slope, free from large voids and defects.
- E. Sand shall conform to ASTM Standard C33 for concrete sand.

## **PART 3 - EXECUTION**

### **3.01 EXCAVATION**

- A. Contractor shall strip and stockpile all topsoil for subsequent respreading on the site.
- B. The Contractor shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground structures in the trench zone may be determined before being damaged. He shall be held responsible for the repair or replacement of such structures when broken or otherwise damaged because of his operations.
- C. The Contractor shall make explorations and excavations at no additional

charge to the Owner to determine the location of existing underground structures.

- D. Utilities and other piping shall be laid in open trenches as shown and specified. Trenches shall be excavated to the designated lines and grades, beginning at the outlet end and progressing toward the upper end in each case. Trenches for pipe shall be shaped to the lower 1/3 of the pipe and provide uniform and continuous bearing. Bell holes shall be dug to allow ample room for working fully around each joint.
- E. Trenches shall be of minimum width to provide ample working space for making joints and shall be not less than pipe diameter + 18 inches. Sides of trenches shall be closely vertical to top of pipe and shall be sheet piled and braced where soil is unstable four feet above the top of the pipe, trenches may be sloped. The ridge of the trench above this level shall be laid back in accordance with OSHA standards to provide for a safe work area.
- F. Trenches shall be excavated on the alignments shown on the Plans, and to the depth and grade necessary to accommodate the pipes at the elevations shown. Where elevations of the invert or centerline of a pipe are shown at the ends of a pipe, the pipe shall be installed at a continuous grade between the two elevations.
- G. Excavation in excess of the depth required for proper shaping shall be corrected by bringing to grade the invert of the ditch with compacted coarse, granular material at no additional expense to the Owner. Bell holes shall be excavated to relieve bell of all load, but small enough to ensure that support is provided throughout the length of the pipe barrel.
- H. Excavation in excess of the depths required for manholes and other structures shall be corrected by placing a subfoundation of 1500 psi concrete, at no additional expense to the Owner.
- I. If trenches are excavated to widths in excess of those specified, or if the trench walls collapse, the pipe shall be laid in accordance with the next better class of bedding at the expense of the Contractor.

### **3.02 TRENCHES**

- A. Trenches shall be maintained in a safe condition to prevent hazardous conditions to persons working in or around the trench.
- B. Braced and sheeted trenches and open trenches shall comply with all State and Federal Laws and Regulations, and local ordinances relating to safety, life, health and property.

- C. The top portion of the trench may be excavated with sloping or vertical sides to any width which will not cause damage to adjoining structures, roadways, utilities, etc. The bottom of the trenches shall be graded to provide uniform bearing and support each section of the pipe at every point along its entire length, except for the portions of the pipe sections excavated for bell holes and for the sealing of pipe joints. Bell holes and depressions for joints shall be dug after the trench bottom has been graded and in order that the pipe rests upon the trench bottom for its full length and shall be only of such length, depth and width for making the particular type of joints. The bottom of the trench shall be rounded so that at least the bottom one-third of the pipe shall rest on crushed stone bedding for the full length of the barrel as jointing operations will permit. This part of the excavation shall be done manually only a few feet in advance of the pipe laying by workmen skilled in this type of work.
- D. The sides of all trenches and excavation for structures shall be held by stay bracing, or by skeleton or solid sheeting and bracing according to conditions encountered, to protect the excavation, adjoining property and for the safety of personnel. Bracing and shoring may be removed when the level of the backfilling has reached the elevation to protect the pipe work and adjacent property. When sheeting or shoring above this level cannot be safely removed, it may be left in place. Timber left in place shall be cut off at least 2 feet below the surface. No sheeting below the level of the top of the pipe may be removed.

### **3.03 PILING EXCAVATED MATERIALS**

- A. All excavated material shall be piled in a manner that will not endanger the work and that will avoid obstructing roadways.

### **3.04 LIMIT TO LENGTH OF OPEN TRENCH**

- A. Pipe trenches shall not be excavated more than 200 feet in advance of pipe laying and all work shall be performed to cause the least possible inconvenience to the public. Adequate temporary bridges or crossings shall be constructed and maintained where required to permit uninterrupted vehicular and pedestrian traffic.

### **3.05 REMOVAL OF UNSUITABLE MATERIAL**

- A. Should overdepth excavation be necessary to remove unsuitable material and to replace with satisfactory material, the Contractor will be paid for this work in accordance with Section 01025 for removal and replacement of unsuitable material, based on the following requirements:

1. When the trench is excavated to the plan depth or as required by these Specifications, and soft or other material not suitable for bedding purposes is encountered in the trench, the Contractor shall immediately notify the Engineer and the testing company for inspection and measurement of the unsuitable material to be removed.
2. No overdepth excavation or backfilling of the overdepth excavated trench shall start until proper measurements of the trench have been taken by the Engineer for the determination of the quantity in cubic yards of unsuitable material excavated. Backfill material and backfilling shall conform to the requirements specified in 3.08 below.
3. No payment will be made for any overdepth excavation of soft unstable material due to the failure of the Contractor to provide adequate means to keep the trench dry.
4. No payment will be made for any overdepth excavation of the unsuitable material and replacement not inspected and measured by the Engineer or testing company prior to excavation.

### **3.06 BEDDING OF DUCTILE IRON PIPE**

- A. Pipe shall be laid on foundations prepared in accordance with ANSI/AWWA C600 as modified herein, and in accordance with the various classes of bedding required by the trench width and trench depth for the size of pipe to be laid. Bedding shall be included in the lineal foot price bid for pipe line construction.
- B. Embedment shall be of the type shown on the plans for the utility system in which it is used.
- C. Bell Holes: Bell holes shall be provided in all classes of bedding to relieve pipe bells of all load, but small enough to ensure that support is provided throughout the length of the pipe barrel.
- D. Coarse Granular Bedding: Coarse Granular Bedding material shall consist of crushed stone as shown for individual areas on the plans. Bedding material shall be placed on a flat bottom trench and thoroughly compacted by tamping or slicing with a flat blade shovel. Compacted bedding material shall be extended up the sides of the pipe to the heights shown for the various classes of bedding.
- E. Over Width Excavation: If trenches are excavated to widths in excess of those specified below, or if trench walls collapse, pipe shall be laid in

accordance with the requirements for at least the next better class of bedding at the expense of the Contractor.

- F. Borrow Backfill: Borrow backfill will be required if there is not sufficient suitable material available from other parts of the work to backfill the trenches. Borrow backfill from approved borrow pits shall be used. Only those soils in the borrow pits that meet the specified requirements for suitable material shall be used.

### **3.07 BACKFILLING**

- A. Backfilling consists of placing suitable materials removed during the excavation into the excavated areas, placing embedment materials and compacting the same to a density equal to or greater than what exists before excavation or as specified herein.
- B. Under backfilling information is also included removal of excess materials and debris from the site, leveling all depressions caused by operation of equipment and maintaining the backfilled areas until accepted by the Owner.
- C. All backfill material shall be free of stones, concrete and clay lumps larger than 1/3 cubic foot. Roots, stumps and rubbish which will decompose will not be permitted in the backfill. Backfill material shall have its moisture content corrected, as may be necessary before being placed in the trench to bring the moisture content to approximately "optimum" for good compaction. Any rock, stone, concrete, clay lumps larger than 1/3 cubic foot in volume, rubbish and debris shall be removed from the site and disposed of by the Contractor in a lawful manner at no additional cost to the Owner.
- D. Backfilling operations in this work are referred to herein as Backfilling at the Pipe Zone, Type "A" and Type "B".
- E. Backfilling in the excavated areas below parts of proposed structures, under structures or in present roadways, future roadways or parking areas as shown on the plans shall be referred to hereinafter as Type "A" Backfilling.
- F. Where trenches are located outside of structures, present roadways, future roadways or parking areas as shown on the Plans, the backfilling shall be referred to hereinafter as Type "B" Backfilling. Type "B" Backfilling will not be allowed on this project.
- G. Backfilling at the Pipe Zone: Throughout the entire construction, backfilling at the pipe zone shall include bedding and shall be as follows:

Backfill material shall be placed below, around each side, and over the top of the pipe, in approximately horizontal layers to a height of 12 inches over the top of the pipe. Layers shall be of such thickness to facilitate the required compaction. This backfill shall be well compacted by using mechanical tamping equipment in such manner as not to damage the pipe, pipe joints or shift the pipe alignment. Workmen shall not be permitted to walk over the pipe until at least 12 inches of compacted fill has been placed over the pipe. The Contractor shall not use water to obtain compaction except for adding water to the backfill material before placing in the trench to bring the moisture content to approximately "optimum" for good compaction.

- H. Type "A" Backfilling: Type "A" backfilling consists of placing sand and gravel or other suitable materials excavated from the trench in the trench in 6 inch thick layers from a point 12 inches above the top of the pipe and mechanically tamped or compacted by rolling until the backfill density after compaction is equal to 95 percent of the maximum density obtainable at optimum moisture content as determined by the Standard Proctor Test (ASTM D698). The upper two feet of the trench shall be compacted to 98 percent of the maximum density obtainable at optimum moisture content as determined by the Standard Proctor Test (ASTM D698). In roadways, base material shall be compacted to 100% of the maximum density obtainable at optimum moisture content as determined by the Modified Proctor Test (ASTM D1557). No water shall be used to secure compaction except for adding water to the backfill material before placing in the trench to bring moisture content approximately "optimum" for good compaction. Each 6 inch thick layer shall be mechanically tamped before additional backfill material is placed in the excavated area.
- I. Type "B" Backfilling: Not used on this project.

### **3.08 PROTECTION OF WATER SUPPLY PIPES**

- A. Horizontal Separation: Sewers and force mains shall be laid at least 10 feet horizontally from any existing or proposed water main. The distance shall be measured edge to edge. In cases where it is not practical to maintain a 10 foot separation, such deviation may allow installation of the sewer or force main closer to the water main, provided that the water main is in a separate trench or on a undisturbed earth shelf located on the side of the sewer or force main and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer or force main.
- B. Crossings: Sewers and force mains crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer or force main. This shall be the case where the water main is either above or below the sewer or force



main. The crossing shall be arranged so that the sewer or force main joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer or force main, adequate structural support shall be provided for the sewer or force main to prevent damage to the water main.

- C. Special Conditions: When it is impossible to obtain proper horizontal and vertical separation as stipulated above, both the water main and sewer main shall be constructed on ductile iron pipe with ductile iron pipe extending for a distance of 10 feet on each side of the point of crossing on both the water main and sewer, and shall be pressure tested to assure water tightness prior to backfilling.

### **3.09 UTILITY CONSTRUCTION IN OTHER EXCAVATION**

- A. Where utilities are required to be constructed in areas also requiring excavation and backfill for other work, coordinate the work so that the parts come together properly, and the construction of the various parts can be done without damage to other parts. Place bedding which will form bearing for pipes, using suitable material and shaping to the lower 1/3 of the pipe to provide uniform and continuous bearing. Compaction of backfill material which will form bearing shall be equal to that specified hereinbefore under Type "A" Backfilling. After the pipe or other utility is placed, backfilling shall proceed as specified hereinbefore following the requirements specified under "Backfilling at the Pipe Zone," "Type 'A' Backfilling."

### **3.10 TESTING**

- A. General: The Contractor shall select a qualified independent testing laboratory for the purpose of identifying soils, checking densities, and classifying soils materials during construction. All testing will be paid for by the Contractor. Copies of all test results shall be furnished to the Engineer in duplicate.
- B. Moisture-Density Tests: Testing shall be in accordance with ASTM D698 and ASTM D1557. A test shall be performed on each type of material used in the work regardless of source. Tests will be accompanied by particle-size analyses of the soils tested (ASTM Methods D421 and D422). Changes in color, gradation, plasticity or source of fill material will require the performance of additional tests. Copies of all test results shall be furnished to the Engineer.
- C. Field Density Tests: Tests shall be made in accordance with ASTM D698 and ASTM D1557. Tests shall be made in accordance with the following minimum schedule or as required by the soils technician or as may be

directed by the Engineer:

1. One test for each 2'-3' lift of backfill for each 300 feet of trench or fraction thereof.

**D. Submittals**

1. The soils technicians will submit formal reports of all compaction tests and retests. The reports are to be furnished to the Owner and the Engineer as soon as possible upon completion of the required tests.
2. This report information is to include but not be limited to the following:
  - a. Date of the test and date submitted.
  - b. Location of test (Station Number and Depth).
  - c. Wet weight, moisture content and dry weight of field sample.
  - d. Description of soil.
  - e. Maximum dry density and moisture content of the lab sample which best matches the field sample in color, texture, grain size and maximum dry density.
  - f. Ratio of field dry density to maximum lab dry density expressed as a percentage.
  - g. Comments concerning the field density passing or failing the specified compaction.
  - h. Comments about recompaction if required.

**E. Compaction Results**

1. If any compaction test reveals that fill or backfill is not compacted as specified, the Contractor shall scarify and recompact as required to achieve the specified density. Additional compaction tests shall be made to verify proper compaction. These additional tests required due to failure of the original test shall be paid for by the Contractor at no additional cost to the Owner.
2. The soils technician is to advise the Engineer and the Contractor's Superintendent immediately of any compaction tests failing to meet the specified minimum requirements. No additional backfill is to be placed on a lift with any portion failing.

### **3.11 CONSTRUCTION ALONG HIGHWAYS, STREETS AND ROADWAYS**

- A. Excavation, Trenching and Backfilling Operations: Excavation, trenching and backfilling along highways, streets and roadways shall be in accordance with the applicable regulations of the State Department of Transportation with reference to construction operations, safety, traffic control, road maintenance and repair.
- B. Protection of Traffic: Provide suitable signs, barricades and lights for protection of traffic, in locations where traffic may be endangered by construction operations. All signs removed by reason of construction shall be replaced as soon as condition which necessitated such removal has been cleared. No highway, street or roadway shall be closed without first obtaining permission from the proper authorities.
- C. Construction Operations: The Contractor shall construct all work along highways, streets and roadways using the following sequence of construction operations, so as to least interfere with traffic:
  - 1. Stripping: Where the pipe line is laid along road shoulders, sod, topsoil and other material suitable for shoulder restoration shall be stripped and stockpiled for replacement.
  - 2. Trenching, Laying and Backfilling: Excavate trenches, install pipeline and backfill. The trench shall not be opened any further ahead of pipe laying operations than is necessary for proper laying operations. Trenches shall be progressively backfilled and consolidated and excess material removed immediately.
  - 3. Shaping: Immediately after completing backfilling operations, reshape any damage to cut and fill slopes, side ditch lines, and replace top soil, sod and any other materials removed from shoulders.
- D. Excavated Material: Excavated material shall not be placed along highways, streets, and roadways in such manner as to obstruct traffic. Roadways and pavement will be maintained free of earth material and debris.
- E. Drainage Structures: All side ditches, culverts, cross drains and other drainage structures shall be kept clear of excavated material and be free to drain at all times.
- F. Maintaining Highways, Streets, Roadways and Driveways
  - 1. The Contractor shall furnish a road grader which shall be available for use at all times for maintaining highways, streets and roadways

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Excavation, Trenching & Backfill for Utility Systems  
in the work area. All such streets, highways and roadways shall be maintained in suitable condition until completion and final acceptance of the work.

2. Repair all driveways that are cut or damaged. Maintain them in suitable condition until completion and final acceptance of the work.

### **3.12 REMOVING AND RESETTING FENCES**

- A. Where existing fences must be removed to permit construction, the Contractor shall remove such fences. As construction progresses, reset the fences in their original location and to their original condition. All costs of removing and re-setting fences and such temporary works as may be required shall be included in the prices for the utility line, unless noted otherwise in the Bid Form.

### **3.13 PROTECTING TREES, SHRUBBERY AND LAWNS**

- A. Trees and shrubbery along trench lines shall not be disturbed unless absolutely necessary. Trees and shrubbery necessary to be removed shall be properly heeled-in and re-planted. Heeling-in and re-planting shall be done under the direction of an experienced nurseryman.
- B. Where utility trenches cross established lawns, sod shall be cut, removed, stacked and maintained in suitable condition until replaced. Topsoil underlying lawn areas shall likewise be removed and kept separate from general excavated materials. Removal and replacement of sod shall be done under the direction of an experienced nurseryman.

### **3.14 REMOVE AND REPLACE PAVEMENT**

- A. Pavement and base course which must be removed for constructing sewers, manholes, force mains, water lines, and all other appurtenances in streets shall be replaced as specified on the Drawings.
  1. The top 18 inches of subgrade material immediately under the paving base and also road shoulder shall be carefully removed and kept separate from the rest of the excavated material. This material shall be placed in the top 18 inches of the backfill. Compact all trenches in 6 inch layers to a density not less than 98 percent at  $\pm 3$  percent of optimum moisture content as determined by the Modified Proctor Test or Standard Proctor Test as directed by these Specifications. Further compaction shall be accomplished by leaving the backfilled trench open to traffic while maintaining the surface level with crushed stone or gravel. Settlement in trenches

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Excavation, Trenching & Backfill for Utility Systems  
shall be refilled with crushed stone or gravel, and such  
maintenance shall continue until replacement of pavement.

2. Where utility lines are constructed on unpaved streets, roads or easements, the top 18 inches of soil shall be stripped and windrowed separate from the excavation from trenches. After the line has been installed and the backfill completed within 18 inches of the original grade, the salvaged surfacing shall be replaced. This work shall be considered as general clean up along with the removal of surplus excavated materials from the site and the restoring of the surface outside trench limits to its original condition, the cost of which shall be included in the price bid for the utility line.

### **3.15 WALKS, DRIVES, CONCRETE CURB AND GUTTER**

- A. Walks and drives removed or damaged during the course of construction shall be replaced with Class "A" Concrete at the same thickness as removed. They will be cut to a neat edge with a masonry saw after backfilling and compacting trench in 6 inch layers to a density not less than 98 percent at  $\pm 3$  percent of optimum moisture content as determined by the Standard Proctor Test.
- B. Concrete curb and gutter sections removed or damaged during the course of construction shall be replaced in full sections with concrete having a compressive strength of at least 3,000 psi.

### **3.16 MEASUREMENT AND PAYMENT**

- A. The work specified in this Section will not be measured for direct payment except those items specifically stated in this Section and for which bid prices are requested in the Bid Proposal.

END OF SECTION

**PART 1 – GENERAL**

**1.01 SCOPE**

- A. The work covered by this Section includes furnishing all labor, materials and equipment required to bore and jack casings and to properly complete pipeline construction as described herein and/or shown on the Drawings.
- B. Supply all materials and perform all work in accordance with applicable American Society for Testing and Materials (ASTM), American Water Works Association (AWWA), American National Standards Institute (ANSI) or other recognized standards. Latest revisions of all standards are applicable. If requested by the Engineer, submit evidence that manufacturer has consistently produced products of satisfactory quality and performance over a period of at least two years.

**1.02 SUBMITTALS**

- A. Submit shop drawings, product data and experience in accordance with the requirements of Section 01340 of these Specifications.
- B. Material Submittals: The Contractor shall provide shop drawings and other pertinent specifications and product data as follows:
  - 1. Shop drawings for casing pipe showing sizes and connection details.
  - 2. Design mixes for concrete and grout.
  - 3. Casing Spacers.
- C. Experience Submittals: Boring and jacking casings is deemed to be specialty contractor work. If the Contractor elects to perform the work, the Contractor shall provide evidence as required by the General Conditions. A minimum of five continuous years of experience in steel casing construction is required of the casing installer. Evidence of this experience must be provided with the shop drawings for review by the Engineer.

**1.03 STORAGE AND PROTECTION**

- A. All materials shall be stored and protected in accordance with the manufacturer's recommendations and as approved by the Engineer.

**PART 2 – PRODUCTS****2.01 MATERIALS AND CONSTRUCTION****A. Casing**

1. The casing shall be new and unused pipe. The casing shall be made from steel plate having a minimum yield strength of 35,000 psi. The steel plate shall also meet the chemical requirements of ASTM A 36.
2. The thickness of casing shown in paragraph B. below are minimum thicknesses. Actual thicknesses shall be determined by the casing installer, based on an evaluation of the required forces to be exerted on the casing when jacking. Any buckling of the casing due to jacking forces shall be repaired at no additional cost to the Owner.
3. The diameters of casing shown in paragraph B. below are shown on the Drawings are minimum. Larger casings, with the Engineer's approval, may be provided at no additional cost to the Owner, for whatever reasons the Contractor may decide, whether casing size availability, line and grade tolerances, soil conditions, etc.

**B. Casing Sizes****UNDER RAILROADS**

<u>Pipe Dia.</u> <u>In.</u>	<u>Casing Dia.</u> <u>In.</u>	<u>Wall Thick.</u> <u>In.</u>
6	14	0.250
8	18	0.250
10	20	0.281
12	22	0.312
14	24	0.344
16	30	0.406
18	30	0.406
20	32	0.469
24	36	0.469
30	42	0.500

UNDER HIGHWAYS

<u>Pipe Dia. In.</u>	<u>Casing Dia. In.</u>	<u>Wall Thick. In.</u>
6	12	0.250
8	16	0.250
10	16	0.250
12	18	0.250
14	22	0.250
16	24	0.250
18	30	0.312
20	30	0.312
24	36	0.375
30	42	0.375

C. Casing Spacers: Casing spacers shall meet one of the following requirements:

1. Casing spacers shall be flanged, bolt-on style with a two-section stainless steel shell lined with a PVC liner, minimum 0.09-thick also having a hardness of 85-90 durometer. Runners shall be attached to stainless steel risers which shall be properly welded to the shell. The height of the runners and risers shall be manufactured such that the pipe does not float within the casing. Casing spacers shall be Cascade Waterworks Manufacturing Company or Advanced Products & Systems, Inc.
2. Casing spacers shall be a two-section, flanged, bolt-on style constructed of heat fused PVC coated steel, minimum 14 gauge band and 10 gauge risers, with 2-inch wide glass reinforced polyester insulating skids, heavy duty PVC inner liner, minimum 0.09-inch thick having a hardness of 85-90 durometer, and all stainless steel or cadmium plated hardware shall be Pipeline Seal and Insulator, Inc.

D. Carrier Pipe: Carrier pipes shall meet requirements as specified in Section 02530 of these Specifications.

E. Surface Settlement Markers: Surface settlement markers within pavement areas shall be P.K. nails. Surface settlement markers within non-paved areas shall be wooden hubs.

## **2.02 EQUIPMENT**

A. A cutting head shall be attached to a continuous auger mounted inside the casing pipe.



- B. On casing pipe for gravity sewer over 60 feet in length, the installation equipment shall include a steering head and a grade indicator.
- C. The steering head shall be controlled manually from the bore pit. The grade indicator shall consist of a water level attached to the casing which would indicate the elevation of the front end of the casing or some other means for grade indication approved by the Engineer.
- D. The steering head and grade indicator shall utilize a laser guidance system.

## **PART 3 – EXECUTION**

### **3.01 GENERAL**

- A. Interpretation of soil investigation reports and data, investigating the site and determination of the site soil conditions prior to bidding is the sole responsibility of the Contractor. Any subsurface investigation by the Bidder or Contractor must be approved by the appropriate authority having jurisdiction over the site. Rock and/or water, if encountered, shall not entitle the Contractor to additional compensation.
- B. Casing construction shall be performed so as not to interfere with, interrupt or endanger roadway surface and activity thereon, and minimize subsidence of the surface, structures, and utilities above and in the vicinity of the casing. Support the ground continuously in a manner that will prevent loss of ground and keep the perimeters and face of the casing, passages and shafts stable. The Contractor shall be responsible for all settlement resulting from casing operations and shall repair and restore damaged property to its original or better condition at no cost to the Owner.
- C. Face Protection: The face of the excavation shall be protected from the collapse of the soil into the casing.
- D. Casing Design: Design of the bore pit and required bearing to resist jacking forces are the responsibility of the Contractor. The excavation method selected shall be compatible with expected ground conditions. The lengths of the casing shown on the Drawings are the minimum lengths required. The length of the casing may be extended for the convenience of the Contractor, at no additional cost to the Owner. Due to the restrictive right-of-way and construction easements, boring and jacking casing lengths less than the nominal 20 foot length may be necessary.
- E. Highway Crossings
  - 1. The Contractor shall be held responsible and accountable for the coordinating and scheduling of all construction work within the highway

right-of-way.

2. Work along or across the highway department rights-of-way shall be subject to inspection by such highway department.
3. All installations shall be performed to leave free flows in drainage ditches, pipes, culverts or other surface drainage facilities of the highway, street or its connections.
4. No excavated material or equipment shall be placed on the pavement or shoulders of the roadway without the express approval of the highway department.
5. In no instance will the Contractor be permitted to leave equipment (trucks, backhoes, etc.) on the pavement or shoulder overnight. Construction materials to be installed, which are placed on the right-of-way in advance of construction, shall be placed in such a manner as to not interfere with the safe operation of the roadway.
6. The Contractor shall be responsible for providing the Owner sufficient information to obtain a blasting permit in a timely manner.

### **3.02 GROUNDWATER CONTROL**

- A. The Contractor shall control the groundwater throughout the construction of the casing.
- B. Methods of dewatering shall be at the option and responsibility of the Contractor. Maintain close observation to detect settlement or displacement of surface facilities due to dewatering. Should settlement or displacement be detected, notify the Engineer immediately and take such action as necessary to maintain safe conditions and prevent damage.
- C. When water is encountered, provide and maintain a dewatering system of sufficient capacity to remove water on a 24 hour basis keeping excavations free of water until the backfill operation is in progress. Dewatering shall be performed in such a manner that removal of soil particles is held to a minimum. Dewater into a sediment trap and comply with requirements specified in Section 02125 of these Specifications.

### **3.03 SAFETY**

- A. Provide all necessary bracing, bulkheads and shields to ensure complete safety to all traffic, persons and property at all times during the work. Perform the work in such a manner as to not permanently damage the roadbed or interfere with normal traffic over it.

- B. Observe all applicable requirements of the regulations of the authorities having jurisdiction over this site. Conduct the operations in such a manner that all work will be performed below the level of the roadbed.
- C. Perform all activities in accordance with the Occupational Safety and Health Act of 1970 (PL-596), as amended, applicable regulations of the Federal Government, OSHA 29CFR 1926 and applicable criteria of ANSI A10.16-81, "Safety Requirements for Construction of Tunnel Shafts and Caissons".

### **3.04 SURFACE SETTLEMENT MONITORING**

- A. Provide surface settlement markers, placed as specified and as directed by the Engineer. The Contractor shall place settlement markers outside of pavement area, along the centerline of the casing at 20 foot intervals and offset 10 feet each way from the centerline of the tunnel. Markers shall also be placed at each shoulder of the roadway, at each edge of pavement, at the centerline of the pavement and at 10 and 25 feet in each direction from the centerline of the casing. Tie settlement markers to bench marks and indices sufficiently removed as not to be affected by the casing operations.
- B. Make observations of surface settlement markers, placed as required herein, at regular time intervals acceptable to the Engineer. In the event settlement or heave on any marker exceeds 1-inch, the Contractor shall immediately cease work and using a method approved by the Engineer and the authority having jurisdiction over the project site, take immediate action to restore surface elevations to that existing prior to start of casing operations.
- C. Take readings and permanently record surface elevations prior to start of dewatering operations and/or shaft excavation. The following schedule shall be used for obtaining and recording elevation readings: all settlement markers, once a week; all settlement markers within 50 feet of the casing heading, at the beginning of each day; more frequently at the Engineer's direction if settlement is identified. Make all elevation measurements to the nearest 0.01 foot.
- D. The Contractor shall cooperate fully with jurisdictional personnel. Any settlement shall be corrected by, and at the expense of, the Contractor.
- E. Promptly report any settlement and horizontal movement immediately to the Engineer and take immediate remedial action.

### **3.05 BORING AND JACKING**

- A. Shafts/Pits
  - 1. Conduct boring and jacking operations from a shaft or pit excavated at one end of the section to be bored. Where conditions and accessibility are

suitable, place the shaft on the downstream end of the bore.

2. The shaft or pit shall be rectangular and excavated to a width and length required for ample working space. If necessary, sheet and shore shaft properly on all sides. Shaft sheeting shall be timber or steel piling of ample strength to safely withstand all structural loadings of whatever nature due to site and soil conditions. Keep preparations dry during all operations. Perform pumping operations as necessary.
3. The bottom of the shaft or pit shall be firm and unyielding to form an adequate foundation upon which to work. In the event the shaft or pit bottom is not stable, excavate to such additional depth as required and place a gravel sub-base or a concrete sub-base if directed by the Engineer due to soil conditions.

B. Jacking Rails and Frame

1. Set jacking rails to proper line and grade within the shaft or pit. Secure rails in place to prevent settlement or movement during operations. The jacking rails shall cradle and hold the casing pipe on true line and grade during the progress of installing the casing.
2. Place backing between the heels of jacking rails and the rear of the shaft or pit. The backing shall be adequate to withstand all jacking forces and loads.
3. The jacking frame shall be of adequate design for the magnitude of the job. Apply thrust to the end of the pipe in such a manner to impart a uniformly balanced load to the pipe barrel without damaging the joint ends of the pipe.

C. Boring and jacking of casing pipes shall be accomplished by the dry auger boring method without jetting, sluicing or wetboring.

D. Auger the hole and jack the casing through the soil simultaneously.

E. Bored installations shall have a bored-hole diameter essentially the same as the outside diameter of the casing pipe to be installed.

F. Execute boring ahead of the casing pipe with extreme care, commensurate with the rate of casing pipe penetration. Boring may proceed slightly in advance of the penetrating pipe and shall be made in such a manner to prevent any voids in the earth around the outside perimeter of the pipe. Make all investigations and determine if the soil conditions are such as to require the use of a shield.

- G. As the casing is installed, check the horizontal and vertical alignment frequently. Make corrections prior to continuing operation.
- H. Any casing pipe damaged in jacking operations shall be repaired, if approved by the Engineer, or removed and replaced at the Contractor's own expense.
- I. Lengths of casing pipe, as long as practical, shall be used except as restricted otherwise. Joints between casing pipe sections shall be butt joints with complete joint penetration, single groove welds, for the entire joint circumference, in accordance with AWS recommended procedures. Prior to welding the joints, the Contractor shall ensure that both ends of the casing sections being welded are square.
- J. The Contractor shall prepare a contingency plan which will allow the use of a casing lubricant, such as bentonite, in the event excessive frictional forces jeopardize the successful completion of the casing installation.
- K. Once the jacking procedure has begun, it should be continued without stopping until completed, subject to weather and conditions beyond the control of the Contractor.
- L. Care shall be taken to ensure that casing pipe installed by boring and jacking method will be at the proper alignment and grade.
- M. The Contractor shall maintain and operate pumps and other necessary drainage system equipment to keep work dewatered at all times.
- N. Adequate sheeting, shoring and bracing for embankments, operating pits and other appurtenances shall be placed and maintained to ensure that work proceeds safely and expeditiously. Upon completion of the required work, the sheeting, shoring and bracing shall be left in place, cut off or removed, as designated by the Engineer.
- O. Trench excavation, all classes and type of excavation, the removal of rock, muck, debris, the excavation of all working pits and backfill requirements of Section 02225 are included under this Section.
- P. All surplus material shall be removed from the right-of-way and the excavation finished flush with the surrounding ground.
- Q. Grout backfill shall be used for unused holes or abandoned pipes.

### **3.06 VENTILATION AND AIR QUALITY**

- A. Provide, operate and maintain for the duration of casing project a ventilation system to meet safety and OSHA requirements.

### **3.07 ROCK EXCAVATION**

- A. In the event that rock is encountered during the installation of the casing pipe, which, in the opinion of the Engineer, cannot be removed through the casing, the Engineer may authorize the Contractor to complete the crossing with a tunnel.
- B. At the Contractor's option, the Contractor may continue to install the casing and remove the rock through the casing at no additional cost to the Owner.

### **3.08 INSTALLATION OF PIPE**

- A. After construction of the casing is complete, and has been accepted by the Engineer, install the pipeline in accordance with the Drawings and Specifications.
- B. Check the alignment and grade of the casing and prepare a plan to set the pipe at proper alignment, grade and elevation, without any sags or high spots.
- C. The carrier pipe shall be supported within the casing by use of casing spacers sized to limit radial movement to a maximum of 1-inch. Provide a minimum of three casing spacers per nominal length of pipe. Casing spacers shall be attached to the pipe at equal intervals. Casing spacers shall be provided within two feet of each end of the casing.
- D. Close the end of the casing with Link Seal apparatus as detailed on the plans.
- E. Leave a 4 x 8-inch opening at the bottom of the lowest closure for drainage.

### **3.09 SHEETING REMOVAL**

Remove sheeting used for shoring from the shaft and off the job site. The removal of sheeting, shoring and bracing shall be done in such a manner as to not endanger or damage either new or existing structures, private or public properties and also to avoid cave-ins or sliding in the banks.

### **3.10 INTERSTATE RESTORATION**

When boring and jacking operations encroach upon the right-of-ways of the federal interstate system, the Contractor shall restore all screening trees with seedlings of like species.

END OF SECTION

**PART 1 – GENERAL**

**1.01 WORK INCLUDED**

- A. Furnish all necessary labor, equipment, material and transportation and performing all operations necessary for removal of surface debris, trees, shrubs, and other plant life.

**1.02 RELATED WORK**

- A. Section 02370 – Soil Erosion Control
- B. Section 02225 – Excavation, Trenching & Backfill for Utility Systems

**1.03 REFERENCED STANDARDS**

- A. Conform to Bibb County code for disposal of debris. All stumps and debris shall be removed from the site.
- B. Coordinate clearing work with the appropriate utility companies.

**PART 2 – PRODUCTS - NOT USED**

**PART 3 – EXECUTION**

**3.01 PREPARATION**

- A. Verify that existing plant life designated to remain is tagged or identified.
- B. All items shall be removed by the Contractor and disposed of offsite at the Contractor's expense.

**3.02 CLEARING & GRUBBING**

- A. Clear areas required for access to site and execution of Work and as shown on the Drawings. Clearing shall consist of the felling and cutting of trees into sections, and the satisfactory disposal of the trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within the area to be cleared. Trees, stumps, roots, brush, and other vegetation in areas to be cleared shall be removed completely from the site, except such trees and vegetation as may be indicated or directed to be left standing. Trees designated to be left standing within the cleared areas shall be trimmed of dead branches 1-1/2



inch or more in diameter. Limbs and branches to be trimmed shall be neatly cut close to the trunk of the tree or main branches. Cuts more than 1-1/2 inch in diameter thus made shall be painted with approved treewound paint. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations, by the erection of timber barriers or by such other means as the circumstances require. Such barriers must be placed and be approved by the Contractor before construction observations can proceed. Clearing shall also include the removal and disposal of structures that obtrude, encroach upon, or otherwise obstruct the work.

- B. Grubbing shall consist of the removal and disposal of stumps, roots larger than one (1) inch in diameter, and matted roots from the designated grubbing areas. This material, together with logs and other organic or metallic debris not suitable for building of pavement subgrade or building pads, shall be excavated and removed to a depth of not less than 18-inches below the original surface level of the ground in embankment areas and not less than 2-feet below the finished earth surface in excavated areas. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the original adjacent surface of the ground.

### **3.03 PROTECTION**

- A. All trees on the site will be removed except those marked specifically on the plans to remain during construction. All trees not to be removed will be protected from injury to their roots and to their top to a distance of three (3') feet beyond the drip-line and no grading, trenching, pruning, or storage of materials may go in this area except as provided by a stakeout by a Owner's representative. The Contractor will pay a penalty for any tree removed from the site has been marked specifically to remain. The Contractor also will pay for any tree which dies due to damage during construction. This applies to all trees on the site whether or not they are shown on the plans.
- B. The Contractor shall not be held accountable for damages to trees resulting from placement of fill or removal of soils where such action is required by the contract documents. Any tree, the trunk of which is within 10 feet of any footing or trench, shall be exempt from these penalties except that the Contractor shall exercise all reasonable precautions to preserve even these trees. The contractor agrees to pay penalties as established below in the event that he or any of his subcontractors causes the loss or removal of trees designated to be saved under the provisions of the Agreement.

The penalty is as follows:

<u>Tree Diameter at a Point 4 Fee Above Existing Grade</u>	<u>Penalty</u>
6" – 7"	\$300.00
7" – 8"	\$375.00
8" – 11"	\$550.00
12" – 20"	\$800.00
21" and larger	\$1,000.00

- C. Trees to be graded by the Owner's representative as to variety, condition and site importance with the above figures acting as a maximum penalty with the lowest assessment amount to be no less than one-half of the above penalty figures.
- D. Protect bench marks, survey control points, and existing structures from damage or displacement.
- E. Protect all utilities that remain.
- F. Clearing operations shall be conducted so as to prevent damage by falling trees to trees left standing, to existing structures and installations, and to those under construction, and so as to provide for the safety of employees and others.

### **3.04 REMOVAL**

- A. Where indicated or directed, trees and stumps shall be removed from areas outside those areas designated for clearing and grubbing. The work shall include the felling of such trees and the removal of their stumps and roots. Trees shall be disposed of as hereinafter specified.
- B. Remove debris, rock, and other extracted plant life from site.
- C. Remove all old and abandoned fencing and remnants of old structure which previously occupied the site.

### **3.05 DISPOSAL**

- A. Disposal of trees, branches, snags, brush, stumps, etc., resulting from the clearing and grubbing shall be the responsibility of the Contractor and shall be disposed of by removal from the site of this work. All costs in connection with disposing of the material will be at the Contractor's expense. The Contractor shall be responsible for compliance with all local and State laws and regulations relative to the disposal of materials. All

liability of any nature resulting from the disposal of the cleared and grubbed material shall become the responsibility of the Contractor. The disposal of all materials cleared and grubbed will be in accordance with the rules and regulations of the State of Georgia. No material will be burned.

END OF SECTION

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**SECTION 02370**  
**SOIL EROSION CONTROL**

**PART 1 - GENERAL**

**1.01 SCOPE**

- A. Erosion control shall be employed during the construction period and shall include all measures required to prevent soil erosion from the site until permanent erosion control measures are installed. Work shall be accomplished through, but not limited to, the use of sediment barriers, silt fences, temporary grasses, mulching, and permanent grassing.
- B. Erosion control measures described herein shall be continued until such time as permanent planting and restoration of natural areas is effectively in control of erosion from project site.
- C. Failure to install and maintain temporary erosion control measures throughout the construction period may be cause to halt construction by governing authorities until such measures are correctly installed and operational. Activity covered in this contract is regulated by the State's Erosion and Sediment Control act and NPDES General Permit for Construction Activity.

**1.02 RELATED WORK**

- A. Construction Drawings\Maps.

**1.03 REFERENCES**

- A. American Society for Testing and Materials (ASTM).
- B. Contractor shall comply with applicable codes, rules, ordinances, regulations, and laws of local, municipal, state or federal authorities having jurisdiction over project.
- C. Contractor shall comply with the State's Erosion and Sedimentation Control Act (latest amendment) and NPDES General Permit for Construction Activity.
- D. "Manual for Erosion and Sediment Control in Georgia" published by the State Soil and Water Conservation Committee of Georgia.

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## **PART 2 - PRODUCTS**

### **2.01 FILTER FABRIC**

- A. Filter fabric for silt fences shall be pervious synthetic polymer filaments forming a stable network so that fibers retain their relative positions. Filter fabric shall be of the type recommended by its manufacturer for the intended application. The filter fabric shall meet the following requirements:

- |    |                       |                          |
|----|-----------------------|--------------------------|
| 1. | Minimum Grab Strength | 150 lbs (by ASTM D 1682) |
| 2. | Elongation            | 25%                      |
| 3. | Retention Efficiency  | 75%                      |

- B. Silt fence shall be constructed in accordance with details shown on Drawings or may be a prefabricated proprietary type subject to approval by Engineer.
- C. Filter Fabric to be installed under this contract is noted on the plans.

### **2.02 GRASS**

- A. Grassing on this project will be the responsibility of the General Contractor.

### **2.03 FERTILIZER AND SOIL AMENDMENTS – SEE GRASSING CHART**

### **2.04 MULCH**

- A. Dry straw or hay of good quality, free of weed seed – spread at a rate of 2-1/2 tons per acre.
- B. Erosion control matting or netting, such as excelsior, jute, textile and plastic matting, and netting applied in accordance with manufacturer's recommendations.

### **2.05 CHEMICALS FOR DUST CONTROL – NOT USED**

## **PART 3 – EXECUTION**

### **3.01 GENERAL**

- A. All disturbed soil areas except those to support paving shall be graded and protected from erosion by grassing. Storm water conveyance systems shall have sediment barriers installed at all entrances, intersections, change in direction and discharge points.

- B. Erosion control shall be directed toward and have the purpose of controlling soil erosion at its potential source. Downstream sediment entrapment measures shall be employed, but only as a backup to primary control at the source.
- C. A continuing program of installation and maintenance of sediment control measures shall be employed during the construction period.
- D. Erosion Control Schedule
  - 1. Prior to the pre-construction conference, Contractor shall submit to the Engineer his proposed erosion control plan for the project in accordance with requirements of this section. The schedule shall be based on an analysis of the project conditions and shall be in written form. This schedule shall specifically indicate the sequence of trenching and backfilling, construction of permanent erosion control features and the proposed uses of temporary erosion control features. Schedule shall also include proposed methods to prevent pollution of streams, lakes and rivers and other water resources.
  - 2. Contractor shall outline his proposed methods of controlling erosion and preventing pollution on public and construction access roads, staging areas and waste disposal areas.
  - 3. No work shall be started until the aforementioned plans and schedules have been accepted by Engineer. Contractor will be responsible for accomplishment of work in accordance with accepted plans and schedules. Engineer may approve changes made necessary by unforeseen circumstances that are beyond the control of Contractor.
- E. Engineer has the authority to limit the surface area of erodible earth materials exposed by clearing and grubbing, the surface area of erodible earth exposed by excavation and backfill operations and to direct Contractor to provide immediate permanent or temporary erosion and pollution control measures to prevent contamination of adjacent streams or other water courses.
- F. Clearing and grubbing operations shall be so scheduled and performed that grading operations and permanent erosion control features can immediately follow thereafter, if the project conditions permit, otherwise temporary erosion control measures will be required between successive construction stages.
- G. Engineer will require Contractor to limit the area of excavation in progress commensurate with Contractor's capability and progress in keeping finish grading, mulching, seeding and other permanent and/or temporary measures current with accepted schedule.

### **3.02 TEMPORARY GRASSING AND MULCHING**

- A. Where staged construction or other conditions not controlled by Contractor prohibit the completion of work in a continuous manner, Contractor shall apply temporary mulch to an erodible area.
- B. Areas to be left exposed for periods longer than 14 days shall have temporary grass seed planted until such times as final grassing is accomplished.
- C. Areas to be mulched need not be to finished grade. Mulch may be placed on slopes as steep as 2:1 using a tractor to imbed the mulch into the slope.
- D. Commercial matting and netting. Follow manufacturer's specifications included with the material.

### **3.03 FINAL STRAW AND GRASSING**

- A. Final Straw and Grassing on disturbed areas shall be completed as detailed in the contract documents under grassing.

### **3.04 SILT FENCES**

- A. Temporary silt fences shall be installed by the General Contractor as required. Silt fencing must be repaired immediately if disturbed or destroyed.. Silt fences shall be removed at no cost to the Owner.

### **3.05 GRADING OPERATIONS**

- A. Grading operations shall be scheduled so that ground surface will be disturbed for the shortest possible time before permanent construction is installed. Large areas shall be maintained as flat as possible to minimize soil transport through surface flow.
- B. Wherever steeper slopes or abrupt changes in grade are required, a diversion or berm shall be constructed at the top of slope to cause surface water to flow along the diversion to a control point to be transported down slope in a slope drain. In no case shall surface water be allowed to flow uncontrolled down slopes.

### **3.06 RUN-OFF EROSION AND SEDIMENTATION CONTROLS**

- A. During construction, route run-off through sedimentation barriers as practical.
- B. Contractor shall maintain sedimentation devices in functional condition. Sedimentation barriers and check dams shall be cleaned out when these devices are at least 60 percent of their capacity. Defective materials in barriers and check dams shall be replaced.

- C. Contractor shall establish sedimentation barriers at the toe of slopes near manhole demolition areas. These barriers may be relocated and reused after permanent slope stabilization becomes established. As they are relocated, any defective materials shall be replaced. In addition, all debris and silt at previous location will be removed.

### **3.07 DUST CONTROL**

- A. Dust raised from vehicular traffic will be controlled by wetting down the site with water. There shall be no separate payment to the Contractor for dust control measures. Any costs connected thereto shall be a subsidiary responsibility of the Contractor.

### **3.08 CLEANUP AND REMOVAL**

- A. At the time, that permanent erosion control is effective, temporary devices and their accumulated sediments shall be removed.



**END OF SECTION**

**PART 1 - GENERAL**

**1.01 SCOPE**

This section of the Specifications describes products to be incorporated into the water lines and requirements for the installation and use of these items to within 5' of the building or as shown on the plan. The Contractor shall furnish all products and perform all labor necessary to fulfill the requirements of these Specifications. It includes, but is not limited to the construction of the following items:

- A. Piping
- B. Valves
- C. Fittings
- D. Services
- E. Connection to Existing System
- F. All necessary appurtenances to convey potable water from the existing system to the locations shown on the plans.

**1.02 RELATED WORK**

- A. Other work required for the construction of the Water Distribution System is specified in the following sections of these specifications:

Section No.	Title
02225	Excavation, Trenching and Backfilling
02370	Soil Erosion Control

**1.03 REFERENCES**

- A. ASTM D 3740-94a – Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
- B. ASTM E 329-93b – Agencies Engaged in the Testing and/or Inspection of Materials as Used in Construction.
- C. ANSI/AWWA C 150/A 21.50-96 – Thickness Design of Ductile Iron Pipe.

- D. ANSI/AWWA C 151/A 21.51-91 – Ductile Iron Pipe, Centrifugally Cast, for Water or Other Liquids.
- E. ASTM D 2241-94 – PVC Pressure-Rated Pipe (SDR – Series).
- F. ASTM D 3139-95 – Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.
- G. ASTM A 139-93a – Electric-Fusion (Arc) Welded Steel Pipe (NPS 4 and Over).
- H. ACI 318-89 – Building Code Requirements for Reinforced concrete.
- I. ASTM C 39-94 – Compressive Strength of Cylindrical Concrete Specimens.
- J. ASTM C 890-91 – Minimum Structural Design Loading for Monolithic or Sectional Precast Concrete Water and Wastewater Structures.
- K. ASTM C 891-90 – Installation of Underground Precast Concrete Utility Structures.
- L. ASTM C 913-89 – Precast Concrete Water and Wastewater Structures.
- M. ASTM A 615/A 615 M-95b – Deformed and Plain Billet – Steel Bars for Concrete Reinforcement.
- N. ANSI/AWWA C-509-94 – Resilient-Seated Gate Valves for Water Supply Service.
- O. AASHTO T 191-91 – Density of Soil In-Place by the Sand-Cone Method.
- P. ASTM D-2922-91 – Test methods for Density of Soil and Soil Aggregate In-Place by Nuclear Methods (Shallow Depth).
- Q. ASTM D-1557-91 – Laboratory Compaction Characteristics of Soil Using Modified Effort.
- R. ASTM D 1556-90 – Density and Unit Weight of Soil In-Place By The Sand-Cone Method.
- S. ASTM D 71-87 (reapproved 1994) – Evaluation Degree of Blistering of Paints.
- T. ASTM D 2794-93 – Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- U. ASTM E 96-95 – Water Vapor Transmission of Materials.

- V. ASTM G 53-95 – Operating Light and Water-Exposure Apparatus (Fluorescent UV – Condensation Type) for Exposure of Nonmetallic Materials.
- W. ANSI/AWWA C 111/A 21.11-95 – Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings.
- X. ASTM A 377-95 – Index of Specifications for Ductile Iron Pressure Pipe.
- Y. ANSI/AWWA C 600-93 – Installation of Ductile Iron Water Mains and their appurtenances.

#### 1.04 OPTIONS

- A. The specifications describe several materials. Where manufacturers and models of equipment are named in the specification, it is intended that these are to describe the quality and function required. The Contractor may use equipment or materials of other manufacturers provided they are reviewed and accepted by the Engineer and the Owner as meeting the specifications prior to bidding the project.
- B. The Contractor will furnish the Engineer and the Owner a description of all materials before ordering. The Engineer and the Owner will review the Contractor's submittals and provide in writing an acceptance or rejection of material. However, an acceptance of any material by the Engineer does not relieve the Contractor of his responsibility to meet the requirements of the construction plans or these specifications.

#### 1.05 QUALITY ASSURANCE

- A. Material and equipment shall be the standard product of a manufacturer who has manufactured them for a minimum of 2 years and who provides published data on the quality and performance of the project.
- B. A Subcontractor for any part of the work must have experience on similar work and if required, furnish the Engineer with a list of projects and the Owners or Engineers who are familiar with his competence.
- C. Devices, equipment, structures, and systems not designated by the Engineer that the Contractor wishes to furnish shall be designed either by a registered professional engineer or by someone the Engineer approved as qualified. If required, complete design calculations and assumptions shall be furnished to the Engineer or the Owner before acceptance.
- D. All testing of the piping shall be made by the Contractor with equipment qualified by the Owner, Engineer, or utility company and in the presence of the Engineer, Owner and utility company. The Engineer or his representative reserves the right to accept or reject testing equipment.

- E. Soil testing shall be done by a testing laboratory regularly engaged in soil testing, and shall be approved by the engineer prior to engagement. Mill certificates of test on materials made by manufacturers will be accepted provided the manufacturer maintains an adequate testing laboratory, makes regularly scheduled tests that are spot checked by an outside laboratory, and furnishes satisfactory certificates with the name of the one making the test.

#### **1.06 PRODUCT DELIVERY, STORAGE & HANDLING**

- A. Shall be as described in Section 01610 – Transportation and Handling and Section 01611 – Storage and Protection.

#### **1.07 SEQUENCING, SCHEDULING**

- A. The Contractor shall arrange his work so that the entire installation is tested, sterilized, and placed in service as soon as reasonable after it is placed.

#### **1.08 ALTERNATIVES**

- A. The intention of these specifications is to produce the best system for the Owner. If the Contractor suggests that alternate material, equipment or procedures will improve the results at no additional cost, the Engineer and the Owner will examine the suggestion and if it is accepted, it may be used. The basis upon which acceptance of an alternate will be given is its value to the Owner, and not for the convenience of the Contractor.

#### **1.09 GUARANTEE**

- A. The Contractor shall guarantee the quality of the materials, equipment, and workmanship for 12 months after acceptance of the completed Project. Defects discovered during that period shall be repaired by the Contractor, at no cost to the Owner. The Performance Bond shall reflect this guarantee.

#### **1.10 EXISTING UTILITIES**

- A. All known utility facilities are shown schematically on plans and are not necessarily accurate in location as to plan or elevation. Utilities such as service lines or unknown facilities not shown on plans will not relieve the contractor of his responsibility under this requirement. “Existing Utilities Facilities” means any utility that exists on the project in its original, relocated or newly installed position. The Contractor will be held responsible for the cost of repairs to damaged underground facilities; even when such facilities are not shown on the plans. The Contractor shall contact all utility companies prior to beginning the work and request an accurate field location of their respective utility lines. Call Utilities Protection Center (811).

- B. Damage to any part of the existing water system and facilities by the Contractor or Subcontractors, that requires repair by the User's and Owner's forces, shall be charged to the Contractor on the basis of time and material, plus 30% for overhead and administration.

### **1.11 REQUIREMENTS OF REGULATORY AGENCIES**

- A. Water mains shall be sterilized to meet the requirements of the Macon Water Authority. Sterilization shall be in accordance with AWWA Standards C-651, latest revision.

### **1.12 CONNECT NEW MAIN TO EXISTING SYSTEM**

- A. The Contractor shall furnish the necessary pipe and perform all excavation, dewatering, shoring, backfilling, etc. necessary to make the connection of a new main to the existing water system. The Contractor shall contact the Superintendent of the Water Utility a minimum of 72 hours in advance of construction. The Contractor shall be responsible for coordinating his construction with the utility operator.

### **1.13 ACCEPTANCE OF PORTIONS OF WORK**

- A. The Owner reserves the right to accept and use any portion of the work whenever it is considered in the public interest to do so.

### **1.14 RECORD DATA**

- A. It will be required of the Contractor to keep accurate, legible records of the location of any deviations from the construction drawings, any additional items or structures to the construction drawings, and all utilities encountered which are not shown on the construction drawings. These records will be made available to the Engineer before his inspection and incorporated into the Record Drawings as set forth in Section 01720 and the supplementary conditions.

## **PART 2 – PRODUCTS**

Products and materials used in the work shall conform to the following:

### **2.01 PIPE**

- A. Ductile Iron Pipe for Water Mains 4"–20" – Shall conform to ANSI A21.50 (AWWA C-150) latest revisions and ANSI A21.51 (AWWA C-151) latest revision. Ductile iron pipe shall be of the thickness according to ANSI/AWWA C150/A21.50, latest revision, and shall be Pressure Class 350 minimum. Pipe shall be cement lined in accordance with ANSI A21.4 or AWWA C-104. Ductile iron pipe shall have a bituminous exterior coating as specified in AWWA C151.

- B. Copper Pipe – Shall be Type “K” or Type “L” copper conforming to Macon Water Authority Standards.

## **2.02 JOINTS**

- A. Flanged Joints – Shall conform to ANSI A21.15 (AWWA C-115) latest revision. Bolts shall conform to ANSI B18.2.1 and nuts shall conform to ANSI B18.2.2. Gaskets shall be rubber, either ring or full face, and shall be 1/8 inch thick. Gaskets shall conform to the dimensions recommended by AWWA C-115 latest revision.
- B. Mechanical Joints – Ductile iron pipe joints shall conform to ANSI A21.11 (AWWA C-111) latest revision. ALL MECHANICAL JOINTS, FITTINGS AND BENDS SHALL BE RESTRAINED IN ACCORDANCE WITH PARAGRAPH ‘E’ below.
- C. Push-On-Joints – Ductile iron pipe push on joints shall conform to ANSI A21.11 latest revision.
- D. Restrained Joints – Restrained joints for pipe, shall be mechanical joints with ductile iron retainer glands or push-on type joints equivalent to “Lok-Ring”, “TR Flex”, Megalug Series 1700 or “Super Lock” and shall have a minimum rated working pressure of 250 psi. The joints shall be in accordance with the applicable portions of AWWA C111. The manufacturer of the joints shall furnish certification, witnessed by an independent laboratory, that the joints furnished have been tested at a pressure of 500 psi without signs of leakage or failure. Restrained joints shall be capable of being deflected after assembly.
- E. Joint restraint for all mechanical joints, fittings and bends shall be Megalug Series 1100 by EBAA Iron.

## **2.03 FITTINGS**

- A. Ductile Iron Fittings – Shall be short body ductile iron, manufactured in accordance with ASA 21.53 (AWWA C-153) latest revision. Fittings shall be cement lined in accordance with ANSI A-21.4 (AWWA C-104) latest revision. Ductile iron fittings shall have an exterior bituminous coating as specified in AWWA C153/C110. Fittings shall be designed to accommodate the type of pipe used.
- B. Fittings for Flanged Pipe – Shall be manufactured in accordance with ASA B 16.1, Class 125 flanges.
- C. Outlet branches in 20” ductile iron mains shall be fabricated by welding sections of ductile iron pipe manufactured in accordance with ANSI/AWWA C151/A21.51. Welded branches shall meet a minimum working pressure of 350

psi.

- D. Horizontal welded outlets shall be subjected to a 15 psi air test for leakage. Any outlet failing this test shall be scrapped. No rework is allowed. Upon completion of this test, the outlet shall be stamped to indicate it was successfully tested. Copies of all test reports shall be delivered to the Owner.
- E. Outlet branches must be located at least 18" away from the plain end and 24" away from the face of the bell end of the parent pipe. Multiple outlets on the same pipe shall be 24" apart.

## **2.04 GATE VALVES (GV)**

- A. Three Inches (3") to Sixteen Inches (16") – Shall be Ductile iron body, resilient wedge design, with non-rising stems, conforming to AWWA C515. Valves shall have mechanical joint ends. All internal and external ferrous cast surfaces of the valve body and bonnet shall have a fusion-bonded epoxy coating complying with AWWA C550. Valves shall have a working pressure of 250 psi. Gate valves shall be American Series 2500 or approved equal.
- B. 20" Gate Valves –Ductile iron body, resilient wedge design, NRS mechanical joint ends with bevel gear actuator conforming to AWWA C515. Valves shall have mechanical joint ends. Valves shall have a working pressure of 250 psi. Gate valves shall be American Series 2500 resilient wedge gate valves or approved equal.
  - 1. Valves installed in the horizontal position shall be installed with a manhole placed as detailed on the Drawing to allow access to the operating nut. Gear boxes shall be aligned with manhole openings in housing.
- C. Smaller Than Three (3) Inches – Shall be all brass, ball valve type. The pressure rating shall be 175 psi.
- D. Valve Boxes (VB) – Underground valves up to 16" shall be installed in approved valve boxes. The valve boxes shall have a suitable base that does not damage the pipe, and shaft extension sections to cover and protect the valve and permit easy access and operation. The cover shall be cast iron. The box and any extensions needed shall be cast iron having a crushing strength of 1,500 pounds per linear foot. Valve boxes shall conform to the detail shown.
- E. Valves larger than 16 inches shall be constructed with a manhole placed around the operating nut as detailed on the Drawings.

## **2.05 POST INDICATOR VALVES – Not Used**



## 2.06 FIRE HYDRANTS

- A. General – Hydrants shall be manufacturer's current model design and construction. All units to be complete including joint assemblies. Physical characteristics and compositions of various metal used in the hydrant components shall meet the requirements as specified in AWWA C-502 latest revision. Hydrants shall be suitable for working pressure of 150 psi. Hydrants shall be Mueller Supper Centurion Model A-423 (5 1/4") Traffic Model, Dresser M & H 129-01 (5 1/4") Traffic Model, or American Darling Model – Mark B-84 (5 1/4") Traffic Model.
- B. Bonnet – Bonnet shall have oil filled reservoir. Bonnet must have "O" ring packing so that all operating parts are enclosed in a sealed oil bath. Oil filter plug shall be provided in bonnet to permit checking of oil level and adding oil when required. All parts must be removed through top of hydrant without moving entire barrel section from safety flange.
- C. Nozzles and Caps – The hydrant shall have two (2) 2-1/2 inch connections and one (1) 4-1/2" steamer connection, Macon standard threads. Nozzles shall be bronze and have interlocking lugs to prevent blowout. Nozzle caps shall be secured to fire hydrant with non-kinking type chain with chain loop on cap ends to permit free turning of caps.
- D. Seat Ring – Seat ring shall be bronze.
- E. Drain Valves and Openings – Positive operating drain valves shall be provided to assure drainage of fire hydrant when the main valve is closed. Drain openings shall have bronze bushings.
- F. Main Valve – Valve shall be designed to close with the pressure and remain closed. Valve shall be made from material that will resist rocks or other foreign matter. Valve shall have a full 5-1/4-inch opening.
- G. Barrel and Safety Flanges – Hydrants shall have a safety-type vertical barrel with minimum 4 foot bury (provide extension sections where necessary) and be designed with safety flanges and/or bolts to protect the barrel and stem from damage and to eliminate flooding when hydrant is struck. Bury depth shall be cast on barrel of hydrant. Hydrant shall be installed with hydrant tee, with the 6" valve directly connected to the hydrant tee and to the hydrant lead. All joints shall be fastened with retainer glands.
- H. Operating Stop and Nut – Hydrant shall have a positive stop feature to permit opening of hydrant without over travel of stem. Operating nut shall be bronze, 1-1/2", point to flat, pentagon.
- I. Bolts and Nuts – Bolts, washers and nuts shall be corrosion resistant.

- J. Inlet – Bottom inlet of hydrant shall be provided with mechanical joint connection as specified and shall be 6-inch nominal diameter.
- K. Direction of Opening – Hydrant shall be designed to close “right” or clockwise and open “left” or counter-clockwise.
- L. Coatings – All inside and outside portions of hydrant shall be coated in accordance with AWA C-502. The exterior portion of hydrant above ground level shall be painted with two (2) coats of best grade zinc chromate primer paint and with two (2) coats of approved hydrant enamel. Color shall be designated by Owner.
- M. Joint Assemblies – Complete joint assemblies consisting of gland, gasket, bolts, and nut shall be furnished for mechanical joint inlets.

**2.07 TAPPING SLEEVES AND VALVES** - Tapping sleeves shall be the split sleeve, mechanical joint type. Valves shall be gate valves furnished in accordance with the above specifications. The valves shall have flange x mechanical joint ends. The required bolts, glands, and gaskets shall be furnished. Tapping sleeves shall be Mueller No. 615 or approved equal. Tapping valves shall be Mueller No. 687 or approved equal.

## **2.08 STEEL CASING PIPE**

- A. All materials, design, fabrication, handling and testing of steel casing pipe shall conform to the requirements of ASTM A139, AWWA C200 and AWWA Manual M11 “Steel Pipe – A Guide for Design and Installation.”
- B. Steel casing pipe shall be new, smooth-wall, carbon steel pipe conforming to ASTM Specification A139, Grade B with a minimum yield strength of 35,000 psi. Steel casings shall be used with the size, minimum thickness, length, and coating specified on the Plans or the MWA Standards for Design and Construction Specifications – Article 1, Section 1.15 B (1).
- C. Additional anticorrosion measures, as specified by the manufacturer or indicated on the plans, shall be provided at connectors, couplings, rollers, restraints, etc.
- D. Unless specified otherwise in the Plans or the MWA Standards for Design and Construction Specifications – Article 1, Section 1.15 C (1) casing pipe end seals shall consist of 1/8-inch (6 mm) thick flexible synthetic rubber boot with adjustable stainless steel banding straps. The annular space of the casing shall not be filled with concrete or grout.
- E. Casing spacers shall consist of a stainless steel shell, PVC ribbed liner and non-conducting separators to keep the carrier pipe from touching the casing pipe. Spacers shall be provided at a maximum of 10-foot intervals and within 2 feet

(0.6 m) of the end of the casing pipe.

## **2.09 WARNING TAPE**

- A. Water mains shall be installed with polyethylene film warning tape manufactured for marking and identifying underground water utilities. Tape shall be a minimum of 2 inches (50 mm) wide and 4 mils thick, blue in color, with continuously printed letters reading “CAUTION BURIED WATER LINE BELOW”.

## **2.10 TRACING WIRE – Not Used**

# **PART 3 – EXECUTION**

## **3.01 ON-SITE OBSERVATION**

- A. The Engineer shall have the right to require that any portion of the work be done in his presence and if any work is covered up after such instruction, it shall be exposed by the Contractor for observation. However, if the Contractor notifies the Engineer that such work is scheduled and the Engineer fails to appear within 48 hours, the Contractor may proceed without him. All work done and materials furnished shall be subject to review by the Engineer or Project Representative. All improper work shall be reconstructed and all materials which do not conform to the requirements of the specifications shall be removed from the work upon notice being received from the Engineer for the rejection of such materials. The Engineer shall have the right to mark rejected materials so as to distinguish them as such.
- B. The Contractor shall give the Project Engineer or project Representative a minimum of 48 hours notice for all required observations or tests.
- C. It will also be required of the Contractor to keep accurate, legible records of the location of all water lines, service laterals, valves, fittings, and appurtenances. These records will be prepared in accordance with the paragraph on “Record Data” in the Supplementary Conditions. Final payment to the Contractor will be withheld until all such information is received and accepted.

## **3.02 HANDLING MATERIALS**

- A. Unloading: Furnish equipment and facilities for unloading, handling, distributing and storing pipe, fittings, valves and accessories. Make equipment available at all times for use in unloading. Do not drop or dump materials. All materials dropped or dumped will be subject to rejection without additional justification.
- B. Handling: Handle pipe, fittings, valves and accessories carefully to prevent shock or damage. Handle pipe by rolling on skids, forklift, or front loader. Do not use

material damaged in handling.

- C. Distribution: Distribute and place pipe and materials to not interfere with traffic. Do not string pipe more than 300 feet beyond the area where pipe is being laid. Do not obstruct drainage ditches.
- D. Storage: Store all pipe which cannot be distributed along the route. Make arrangements for the use of suitable storage areas. Do not interfere with other contractors right to access.

### 3.03 CONSTRUCTION ALONG HIGHWAYS, STREETS AND ROADWAYS

Install pipelines and accessories along highways, streets and roadways in accordance with the applicable regulations of the County, City, and/or the Department of Transportation with reference to construction operations, safety, traffic control, road maintenance and repair.

- A. Protection of Traffic: Provide and maintain suitable signs, barricades and lights for protection of traffic.

Replace all highway signs removed for construction as soon as possible. Do not close or block any highway, street, or roadway without first obtaining permission from the proper authorities.

Provide flagmen to direct and expedite the flow of traffic.

- B. Construction Operations: Perform all work along highways, streets and roadways to least interfere with traffic.
  - 1. Stripping: Where the pipe line is laid along road shoulders, strip and stockpile all sod, topsoil and other material suitable for shoulder restoration.
  - 2. Trenching, Laying and Backfilling: Do not open the trench any further ahead of pipe laying operations than is necessary. Backfill and remove excess material immediately behind laying operations. Complete excavation and backfill for any portion of the trench in the same day.
  - 3. Shaping: Reshape damaged slopes, side ditches, and ditch lines immediately after completing backfilling operations. Replace topsoil, sod and any other materials removed from shoulders.
- C. Excavated Materials: Do not place excavated material along highways, streets and roadways in a manner which obstructs traffic. Sweep all scattered excavated material off of the pavement.
- D. Drainage Structures: Keep all side ditches, culverts, cross drains, and other drainage structures clear of excavated material and free to drain at all times.

- E. Maintaining Highways, Streets, Roadways and Driveways: Maintain streets, highways, and roadways in suitable condition for movement of traffic until completion and final acceptance of the work. Use steel running plate to maintain traffic until pavement replacement is completed.

NOTE: Traffic must be maintained at all times. When one lane is closed, flagmen must be utilized to maintain traffic flow.

Repair all driveways that are cut or damaged immediately. Maintain them in a suitable condition for use until completion and final acceptance of the work.

### **3.04 EXISTING UNDERGROUND UTILITIES AND OBSTRUCTIONS**

- A. It is the responsibility of the Contractor to locate all existing utilities along the path of his construction. The drawings shall indicate underground utilities or obstructions that are known to exist. Where these or unforeseen underground utilities are encountered, the location and alignment of the water main may be changed, upon written approval of the Engineer and Owner, to avoid interference.

### **3.05 CONNECTIONS TO EXISTING PIPE LINES**

- A. Before laying pipe, the Contractor shall locate the points of connection to existing pipe lines and uncover as necessary for the Engineer and Owner to confirm the nature of the connection to be made. The Contractor shall furnish materials and make the connection to all existing pipelines. The Contractor will be observed during construction of tie-ins by the Owner and the Engineer. The Contractor shall use all available practices and resources to minimize the time the customers are without water. The Contractor shall notify affected customers of a water outage at least 72 hours in advance by newspaper, letters to customers and door hangers in affected area.

### **3.06 LAYING PIPE**

- A. General – Ductile iron pipe shall be laid in accordance with AWWA C-600.
- B. Construction Methods:
1. Field Inspection: All pipe and accessories shall be laid, jointed, tested for defects and for leakage with pressure and chlorinated in the manner herein specified in the presence of the Engineer or his authorized representative and subject to their approval.
  2. Handling Pipe and Accessories:
    - (a) Care: Pipe, fittings, valves and other accessories shall be unloaded at

the point of delivery, hauled to and distributed at the site of the project by the contractor; they shall at all times be handled with care to avoid damage. In loading and unloading they shall be lifted by hoists, slid, or towed on skid-ways in such a manner as to avoid shock. Under no circumstances shall they be dropped. Pipe handled on skidways must not be skidded or rolled against pipe already on the ground.

- (b) At Site of Work: In distributing the material at the site of the work, each piece shall be unloaded opposite or near the place where it is to be laid in the trench and shall be laid on high ground so that it will not be in a drainage way.
- (c) Bell Ends, How Faced: Pipe shall be placed on the site of the work parallel with the trench alignment and with the bell ends facing the upstream direction, unless otherwise directed by the Engineer.
- (d) Pipe Kept Clean: The interior of all pipe, fittings and other accessories shall be kept free from dirt and foreign matter at all times.
- (e) Detection Tape: Detection tape will be used over all pipe and tubing. The tape shall be laid 18" below finished grade.

3. Alignment and Grade:

- (a) General: All pipe shall be laid and maintained in the required lines and grades, with fittings and valves at the required locations, with joints centered and spigots home, and with all valve stems plumb.
- (b) Depth of Pipe: Where pipe is laid in roadways and parkways of streets, the top of the barrel of the pipe shall have a minimum cover forty-eight inches below the curb line of the street or where no curb line has been established, below the existing ground line. Where the pipe is laid in open, unsubdivided areas, a minimum of forty-eight inches of cover is required. A greater depth of cover is required in certain sections of the main, such as railroad crossings, valve locations and other sections of special construction, and within State and Federal highway rights-of-way. Note: Water mains shall be installed at the depths indicated on the construction Drawings.
- (c) Prior Investigation – Prior to excavation, investigation shall be made to the extent necessary to determine the location of existing underground structures and conflicts. Care shall be exercised by the Contractor during excavation to avoid damage to existing structures. The pipe manufacturers recommendations shall be used when the

water main being installed is adjacent to a facility that is cathodically protected.

- (d) **Unforeseen Obstructions** – When obstructions that are not shown on the plans are encountered during the progress of work and interfere so that an alteration of the plans is required, the Owner will alter the plans, or order a deviation in line and grade, or arrange for removal, relocation, or reconstruction of the obstructions.
- (e) **Clearance** – When crossing existing pipelines or other structures, alignment and grade shall be adjusted as necessary, to provide clearance as required by federal, state, and local regulations or as deemed necessary by the Owner to prevent future damage or contamination of either structure.

4. Excavation and Preparation of Trench:

See Section 02225

5. Pipe Handling:

- (a) Manner of Hauling Pipe and Accessories: Proper implements, tools and facilities shall be provided and used by the contractor for the safe and convenient execution of the work. All pipe, fittings and valves shall be carefully lowered into the trench piece by piece by means of derrick ropes or other suitable tools or equipment, in such manner as to prevent damage to pipe or accessories be dropped or dumped into the trench.
- (b) Inspection: Before lowering and while still suspended, the pipe shall be inspected for defects. Any defective, damaged or unsound pipe shall be rejected.
- (c) Pipe Kept Clean: All foreign matter or dirt shall be removed from the pipe, and it shall be kept clean by approved means during and after laying.
- (d) Laying of the Pipe: The spigot shall be centered in the bell, the pipe forced "home" and brought into true alignment; it shall be secured there by earth carefully tamped under and on each side of it, excepting at the bell holes. Care shall be taken to prevent dirt from entering the joint space. No "blocking up" of pipe or joints will be permitted. The joint shall be made as hereinafter described.
- (e) Trench Water Entering Pipe: At times when pipe laying is not in progress, the open ends of the pipe shall be closed by approved

- means and no trench water shall be permitted to enter the pipe.
- (f) Cutting Pipe: Cutting of pipe for inserting valves, fittings or closure pieces shall be done in a neat workmanlike manner without damage to the pipe.
  - (g) Bell Ends Face Direction of Laying: Unless otherwise directed, pipe shall be laid with bell ends facing in the direction of laying; and for lines on an appreciable slope, bells shall, at the discretion of the engineer face up-grade.
  - (h) Permissible Deflections at Joints: Wherever necessary to deflect pipe from a straight line, either in the vertical or horizontal plane to avoid obstructions, the degree of deflection shall be according to manufacturer's recommendations.
  - (i) Unsuitable Conditions for Laying Pipe: No pipe shall be laid in water, or when the trench conditions or the weather is unsuitable for such work.
6. Jointing Pipe-Mechanical Joints: The following steps shall be taken in making mechanical joints:
- (a) All lumps, blisters and excess coal-tar enamel shall be removed from socket and spigot of the pipe.
  - (b) Wash socket and plain end with soapy water containing chloride solution; then slip gland and gasket over plain end. The small side of gasket and lip gland shall face bell.
  - (c) Paint gasket with soapy solution containing chlorine.
  - (d) Push gasket into position, being sure it is evenly seated in socket.
  - (e) Slide gland into position; insert bolts and run nuts up finger tight.
  - (f) Tighten bolts to uniform tightness with correct ratchet wrench. The first bolt tightened shall be the bottom bolt, then top. All other bolts shall be tightened in sequence at 180 degrees apart.
7. Setting, Hydrants, Valves, Valve Boxes and Fittings:
- (a) General: Hydrants, valves and pipe fittings shall be set and jointed to new pipe in the manner heretofore specified for cleaning, laying and jointing pipe. Hydrants and valves shall be installed plumb. Valve-operating stems shall be oriented in a manner to allow proper operation.



- (b) Valve Boxes: Cast iron valve boxes shall be firmly supported, and maintained centered and plumb over the wrench nut of the gate valve, with box cover.
- 8. Plugging Dead Ends: Standard plugs shall be inserted into the bells of all dead ends of pipes, tees or crosses and spigot ends shall be capped. Plugs or caps shall be jointed to the pipe or fittings in the manner specified above.
- 9. Thrust Blocking:
  - (a) Concrete having compressive strength of not less than 3000 psi shall be used as a cradle or thrust blocking where shown on the plans or where directed by the Engineer. Bends exceeding 22-1/4 degrees, crosses with one opening plugged, and all tees shall be backed with concrete as a thrust block. Blocking shall be placed between solid ground and the fitting to be anchored; the area of bearing on the pipe and on ground in each instance shall be that shown on the plans. The blocking shall be so placed that the pipe fitting joints will be accessible for repair. No extra payment will be made for the thrust blocks.
  - (b) Anchorage for Hydrants – #57 Stone per Macon Water Authority standards shall be placed between the back of the hydrant and undisturbed earth of the trench side without covering weep holes and bolts. Joint restraints equivalent to Megalugs manufactured by EBAA Iron may be used in lieu of concrete blocking.
- 10. Pressure and Leakage Tests:
  - (a) Pressure During Test: Immediately after the pipe has been laid and backfilled, but prior to the placement of pavement, each valved section of newly laid pipe shall be subjected to a leakage and pressure test. For any section being tested the pressure applied shall be such that at the highest point in the section, the pressure shall be 200 pounds per square inch.
  - (b) Duration of Test: The duration of each pressure test shall be two (2) hours.
  - (c) Procedures: Each valved section of pipe shall be slowly filled with water and the specified test pressure, measured at the point of highest elevation shall be supplied by means of a pump connected to the pipe in a satisfactory manner. The pump, pipe connection, and all necessary apparatus, gauges, and meters shall be furnished by the contractor. The contractor shall furnish all necessary labor and

assistance in conducting the tests. The owner will furnish, through connections made by the contractor to existing mains, water for filling the lines for making the test.

- (d) Expelling Air Before Tests: Before applying the specified test pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made, if necessary, at points of highest elevation and afterward tightly plugged.
- (e) Examination Under Pressure: At intervals during the test, the route of the pipeline shall be inspected to locate any leaks or breaks. Any cracked or defective joints, cracked or defective pipe, fittings or valves discovered in consequence of this pressure test shall be removed and replaced with sound material in the manner provided and the test shall be repeated until satisfactory results are obtained.
- (f) Permissible Leakage: Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, of any valved section thereof, to maintain the specified leakage test pressure after the pipe has been filled with water and the air in the pipeline has been expelled. No installation will be accepted if leakage is greater than that allowed by Macon Water Authority standard of 0.12 gallons per hour per inch diameter per thousand feet when tested for a minimum of two hours.

11. Backfilling, Cleaning Up and Maintaining Surfaces: See Section 02225

12. Disinfection of Mains: The contractor shall disinfect all new mains, in accordance with AWWA C651-99, or latest revision, furnishing all labor, equipment and material necessary for the complete disinfection of the mains. Samples of the water shall be taken from several points in the new lines and submitted to the MWA lab for bacteriological analysis. Should the analysis show contamination, the system shall be re-chlorinated and further samples taken and submitted for analysis until no contamination is indicated.

END OF SECTION

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## **SECTION 02920 GRASSING**

### **PART 1 – GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Ground preparation, seeding, planting grass, fertilizing, and mulching of graded areas behind structures, over pipelines, in rights-of-way, roadway shoulders, and any other disturbed area.
- B. Seed Protection.
- C. Maintaining seeded areas until final acceptance.

#### **1.02 RELATED SECTIONS**

- A. Section 02500 – Excavation, Trenching, and Backfilling for Utility Systems
- B. Section 02370 – Erosion and Sedimentation Control

#### **1.03 MEASUREMENT AND PAYMENT**

- A. There will be no separate measurement or payment for Grassing as outlined in the bid form.

#### **1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver grass seed in original containers showing analysis of seed mixture, percentage of pure seed, year of production, net weight, date of packaging and location of packaging. Damaged packages are not acceptable.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer. Damaged bags are not acceptable.
- C. All materials shall be acceptable to Engineer prior to use.

#### **1.05 PLANTING DATES**

- A. This specification provides for the establishment of a permanent grass cover between the dates of March 1 and September 30. If finished earth grades are not completed in time to permit planting and establishment of the permanent grass during the favorable season between the dates specified above unless otherwise accepted, the Contractor will be required to plan a temporary cover to protect the new graded areas from erosion and to keep windblown dust to a minimum. The

temporary cover shall be planted between October 1 and February 28 unless otherwise permitted.

## **PART 2 – PRODUCTS**

### **2.01 SEED**

- A. As shown on Plans.
- B. All seed shall conform to all Georgia State Laws and to all requirements and regulations of the State of Georgia Department of Agriculture.
- C. The varieties of seed shall be individually packaged or bagged, and tagged to show name of seed, net weight, origin, germination, lot number, and other information required by the State of Georgia Department of Agriculture.
- D. The Engineer reserves the right to test, reject, or accept all seed before seeding.

### **2.02 FERTILIZER**

- A. Balanced commercial fertilizer of approved type, conforming to state fertilizer laws.

### **2.03 SEEDING SCHEDULE**

- A. As shown on Plans.
- B. In areas where existing grass is to be matched, contractor shall sow seed at the rate and dates recommended by seed distributor.

### **2.04 LIME**

- A. Agricultural grade, ground limestone.

### **2.05 ACCESSORIES**

- A. Straw Mulch: Oat or wheat straw free from weeds, foreign matter detrimental to plant life, and in dry condition.
- B. Excelsior Mulch: Excelsior mulch shall consist of wood fibers cut from sound, green timber. The average length of the fibers shall be 4 to 6 inches. The cut shall be made in such a manner as to provide maximum strength of fiber, but at a slight angle to the natural grain of the wood so as to cause splintering of the fibers when weathering in order to provide adherence to each other and to the soil.

- C. Wood cellulose fiber shall be made from wood chip particles manufactured particularly for discharging uniformly on the ground surface when dispersed by a hydraulic water sprayer. It shall remain in uniform suspension in water under agitation and blend with grass seed and fertilizer to form a homogenous slurry. The mulch fibers shall intertwine physically to form a strong moisture holding mat on the ground surface and allow rainfall to percolate into the underlying soil. The mulch shall be heat processed so as to contain no germination or growth-inhibiting factors. It shall be dyed (non-toxic) an appropriate color to facilitate metering of material.

## **2.06 PRODUCT REVIEW**

- A. The Contractor shall provide the Engineer with a complete description of all products before ordering. The Engineer will review all products before they are ordered.

## **PART 3 – EXECUTION**

### **3.01 PREPARATION**

- A. The areas to be seeded shall be made smooth and uniform and shall conform to the finished grade indicated on the plans and blend in with adjacent grades.
- B. Remove foreign materials, plants, roots, stones, and debris from surfaces to be seeded.
- C. Grassing areas, if not loose, shall be loosened to a minimum depth of 3 inches before fertilizer, seed, or sod is applied.

### **3.02 STAND OF GRASS**

- A. Before acceptance of the seeding performed for the establishment of permanent vegetation, the Contractor will be required to produce a satisfactory stand of perennial grass whose root system shall be developed sufficiently to survive dry periods and the winter weather and be capable of re-establishment in the spring.
- B. Before acceptance of the seeding performed for the establishment of temporary vegetation, the Contractor will be required to produce a stand of grass sufficient to control erosion for a given area and length of time before the next phase of construction or the establishment of permanent vegetation is to commence.

### **3.03 SEEDING DATES**

- A. Seeding shall be performed during the periods and at the rates specified in the seeding schedules. Seeding work may, at the discretion of the Contractor, be performed throughout the year using the schedule prescribed for the given period.

Seeding work shall not be conducted when the ground is frozen or excessively wet. The Contractor will be required to produce a satisfactory stand of grass regardless of the period of the year the work is performed.

### **3.04 APPLYING LIME AND FERTILIZER**

- A. Following advance preparation and placing selected material for shoulders and slopes, lime, if called for based on soil tests and fertilizer, shall be spread uniformly over the designated areas and shall be thoroughly mixed with the soil to a depth of approximately 2 inches. Fertilizer shall be applied at the rate of 500 pounds per acre for the initial application unless otherwise directed by the Engineer. Lime shall be applied at the rate determined by the soil test. Unless otherwise provided, lime will not be applied for temporary seeding. In all cases where practicable, acceptable mechanical spreaders shall be used for spreading fertilizer. On steep slopes subject to slides and inaccessible to power equipment, the slopes shall be adequately scarified. Fertilizer may be applied on steep slopes by hydraulic thuds as a mixture of fertilizer and seed. When fertilizer is applied with combination seed and fertilizer drills, no further incorporation will be necessary. The fertilizer and seed shall be applied together when Wood Cellulose Fiber Mulch is used. Any stones larger than 2½ inches in any dimension, larger clod, roots, or other debris brought to the surface shall be removed.

### **3.05 SEEDING**

- A. Seed shall be sown within 24 hours following the application of fertilizer and lime and preparation of the seedbed as specified in Section 3.4. Seed shall be uniformly sown at the rate specified by the use of acceptable mechanical seed drills. Rotary hand seeders, power sprayers or other satisfactory equipment may be used on steep slopes or on other areas that are inaccessible to seed drills.
- B. The seed shall be covered and lightly compacted by means of cultipacker or light roller if the drill does not perform this operation. On slopes inaccessible to compaction equipment, the seed shall be covered by dragging spiked chains, by light harrowing, or by other satisfactory methods.
- C. Apply water with fine spray immediately after each area has been sown.
- D. Do not sow seed when ground is too dry, during windy periods or immediately following a rain.
- E. If permitted by the special provisions, wood cellulose fiber mulch or excelsior fiber mulch may be used.

**3.06 SEED PROTECTION (STRAW MULCH)**

- A. All seeded areas seeded with permanent grasses shall be uniformly mulched in a continuous blanket immediately following seeding and compacting operations, using at least 2 tons of straw per acre.

**3.07 SEED PROTECTION (EXCELSIOR MULCH)**

- A. Seed shall be sown as specified in Section 3.5. Within 24 hours after the covering of seed, excelsior mulch shall be uniformly applied at the rate of 2 tons per acre. The mulch may be applied hydraulically or by other acceptable methods. Should the mulch be placed in a dry condition, it shall be thoroughly wetted immediately after placing. The Engineer may require light rolling of the mulch to form a tight mat.

**3.08 SEED PROTECTION (WOOD CELLULOSE FIBER MULCH)**

- A. After the lime has been applied and ground prepared as specified in Section 3.4, wood cellulose fiber muck shall be applied at the rate of 1,500 pounds per acre in a mixture of seed and fertilizer. Hydraulic equipment shall be used for the application of fertilizer, seed and slurry of the prepared wood pulp. This equipment shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry of the specified amount of fiber, fertilizer, seed and water. The slurry distribution lines shall be equipped with a set of hydraulic spray nozzles, which will provide an even distribution of the slurry on the various areas to be seeded. The slurry tank shall have a minimum capacity of 1,000 gallons.
- B. The seed, fertilizer, wood pulp mulch, and water shall all be combined into the slurry tank for distribution of all ingredients in one operation by the hydraulic seeding method specified herein. The materials shall be combined in a manner recommended by the manufacturer. The slurry mixture shall be so regulated that the amounts and rates of application shall result in a uniform application of all materials at rates not less than the amount specified. Using the color of the wood pulp as a guide, the equipment operator shall spray the prepared seedbed with a uniform visible coat. The slurry shall be applied in a sweeping motion, in an arched stream so as to fall like rain, allowing the wood fibers to build upon each other until an even coat is achieved.

**3.09 SODDING**

- A. Sod shall be placed between March 1 and December 1.
- B. Sod shall be placed within 48 hours of cutting.



- C. Sod shall be moist when laid and placed on moist ground. The sod shall be carefully placed by hand, beginning at the toe of slopes and working upwards. The length of the strips shall be at right angles to the flow of surface water. All joints shall be tightly butted and end joints shall be staggered at least 12 inches. The sod shall be immediately pressed firmly into the ground by tamping or rolling. Fill all joints between strips with fine screened soil. Sod on slopes shall be pegged with sod pegs to prevent movement. The sod shall be watered, mowed, weeded, repaired or otherwise maintained, to insure the establishment of a uniform healthy stand of grass until acceptance.

### **3.10 MAINTENANCE**

- A. Maintain seeded surfaces until final acceptance.
- B. Maintenance shall consist of providing protection against traffic, watering to ensure uniform seed germination and to keep surface of soil damp, and repairing any areas damaged as a result of construction operations or erosion.

### **3.11 ACCEPTANCE**

- A. Before acceptance of the seeding performed for the establishment of permanent vegetation, the Contractor will be required to produce a satisfactory stand of perennial grass whose root system shall be developed sufficiently to survive dry periods and the winter weather and be capable of re-establishment in the spring.

**END OF SECTION**