To: All Vendors
From: Misty Landers
Date: January 2, 2019
Re: RFB2019-17 Carl-Bethlehem Road 24-inch Water Transmission Main Relocation

RFB2019-17 is attached for your consideration. Anyone accessing this Request for Bid from the Barrow County website www.barrowga.org is responsible to insure the latest documents are in their possession including any addenda. All addenda, questions and answers will be posted on this site. This site should be visited frequently to insure your awareness of any updates.

Please insure bids are submitted exactly as specified in the RFB. If you have any questions, please submit them in writing as called for in the RFB.

Thank you.
RFB2019-17
Carl-Bethlehem Road
24-Inch Water Transmission Main Relocation
(Project WA023)

ADVERTISEMENT FOR BIDS

Barrow County Board of Commissioners
January 2, 2019
INDEX

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SECTION I
ADVERTISEMENT FOR BIDS

PROJECT: Carl-Bethlehem Road 24-Inch Water Transmission Main Relocation
Project #WA023

OWNER: Barrow County Board of Commissioners

Sealed bids will be received by the Barrow County Board of Commissioners, Winder, Georgia, for the Carl-Bethlehem Road 24-Inch Water Transmission Main Relocation (Project # WA023), in accordance with the specifications and drawings.

Bids will be received in the office of the Barrow County Board of Commissioners, Clerks Office, 30 North Broad Street, Winder, Georgia 30680, until 12:00 Noon, Thursday, January 31, 2019. Any bid received after said time and date will not be considered by OWNER. Bids will be opened and read aloud in the Commission Meeting Room at the above address at 2:00 p.m. on Thursday, January 31, 2019. All bids will be evaluated and the project will be awarded, if it is awarded, within 60 days of the bid opening to the lowest responsible, qualified general contractor.

Construction Documents and Specifications can be downloaded in accordance with directions furnished on the Purchasing Department Web Page at www.barrowga.org. Neither companies nor representatives or agents of companies shall contact any members or employees of the Engineering Firm, Barrow County Board of Commissioners, or any Barrow County Elected Official regarding this RFB without prior authorization of Purchasing Agent. All questions/inquiries are to be submitted in writing to the following and will be answered and made available in accordance with instructions from Purchasing Department web page.

Misty Landers, Finance Department
Barrow County Board of Commissioners
30 North Broad Street
Winder, GA 30680
Phone – 770.868.8111     E-Mail – mlanders@barrowga.org

Questions regarding this RFB shall be received no later than 5:00 p.m. on Tuesday, January 22, 2019.

A Pre-Bid Conference will be held at 10:00 a.m. on Thursday, January 17, 2019 at the Barrow County Water & Sewer Department Building located at 625 Hwy 211 NE in Winder, Georgia. All prospective bidders are encouraged to attend to tour the project site and discuss and clarify any questions regarding the Bid Documents.
Each bid must be in accordance with specifications and must be submitted in a sealed envelope addressed to the OWNER. License numbers must be written on the face of the envelopes. No bid will be opened unless it contains the Contractor’s utility license number. Each sealed envelope containing a bid must be plainly marked on the outside as “RFB2019-17 Carl-Bethlehem Road 24-Inch Water Transmission Main Relocation”. If a bid is forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope to the attention of the OWNER at the address previously given and also plainly marked with “RFB2019-17 Carl-Bethlehem Road 24-Inch Water Transmission Main Relocation”. General contractor must fully comply with Barrow County insurance requirements. All bids must be accompanied by a Bid Bond in the amount of 5% of the Bid Amount. Both a Performance and a Payment Bond will be required in an amount equal to 100% of the Contract Price. 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 Georgia. Only Barrow County Bid, Payment and Performance Bond Forms Are Acceptable.

OWNER reserves the right to waive any informality or to reject fully or partially any or all bids, to evaluate bids, and to accept any bid which, in its opinion, may be in the best interest of the OWNER. No bid will be rejected without just cause.

Mike Renshaw, County Manager
BARROW COUNTY BOARD OF COMMISSIONERS
SECTION II
INSTRUCTIONS TO BIDDERS

1. **Defined Terms:** Terms used in these Instructions to Bidders which are defined in the General Conditions have the meanings assigned to them in the General Conditions. The term "Bidder" means one who submits a Bid directly to OWNER, as distinct from a sub-bidder, who submits a bid to a Bidder. The term "Successful Bidder" means the lowest, qualified, responsible and responsive Bidder to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award. The term "Bidding Documents" includes the Advertisement for Bids, Instructions to Bidders, the Proposal and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids.)

2. **Copies of Bidding Documents:**

   2.1 Complete sets of the Bidding Documents in the number and for the sum, if any, stated in the Advertisement for Bids may be obtained from OWNER.

   2.2 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

   2.3 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the WORK and do not confer a license or grant for any other use.

3. **Qualifications of Bidders:** To demonstrate qualifications to perform the WORK, each Bidder must be prepared to submit within five days of OWNER's request, written evidence, such as financial data, previous experience, present commitments and other such data as may be called requested. Each Bid must contain evidence of Bidder's qualification to do business in Georgia or covenant to obtain such qualification prior to award of the contract.

4. **Examination of Contract Documents and Site:**

   4.1 It is the responsibility of each Bidder before submitting a Bid to: (a) examine the Contract Documents thoroughly, (b) visit the site to become familiar with local conditions that may affect cost, progress, performance or furnishing of the WORK, (c) consider federal, state and local Laws and Regulations that may affect cost, progress, performance or furnishing of the WORK, (d) study and carefully correlate Bidder's observations with the Contract Documents, and (e) notify ENGINEER of all conflicts, errors or discrepancies in the Contract Documents.

   4.2 Information and data reflected in the Contract Documents with respect to Underground Facilities at or contiguous to the site is based upon information and data furnished to OWNER and ENGINEER by owners of such Underground Facilities or others, and OWNER and ENGINEER do not assume responsibility for the accuracy or completeness thereof.
4.3 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, Underground Facilities and other physical conditions, and possible changes in the Contract Documents due to differing conditions appear in Paragraphs 4.2 and 4.3 of the General Conditions.

4.4 On request in advance, OWNER will provide each Bidder access to the site to conduct such explorations and tests as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.

4.5 The lands upon which the WORK is to be performed, rights-of-way and easements for access thereto and other lands designated for use by CONTRACTOR in performing the WORK are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by CONTRACTOR. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by OWNER unless otherwise provided in the Contract Documents.

4.6 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the WORK required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the WORK.

5. Interpretations and Addenda:

5.1 All questions about the meaning or intent of the Contract Documents are to be directed to the OWNER as indicated in the Advertisement. Interpretations or clarifications considered necessary by the OWNER in response to such questions will be provided through the Barrow County Purchasing Web Page at www.barrowga.org.

Questions received less than ten days prior to the date for opening of Bids may not be answered. Oral interpretations or clarifications of questions are not binding. Only written answers, in formal Addenda form, will be binding.

5.2 Addenda may also be issued to modify the Bidding Documents as deemed advisable or necessary by OWNER.

6. Bid Security:

6.1 Each Bid must be accompanied by Bid security made payable to OWNER in an amount of five percent (5%) of the Bidder’s maximum Bid price and in the form of a Bid Bond issued by a surety meeting the requirements of Paragraph 5.1 of the General Conditions. The Barrow County Bid Bond Form is the only acceptable form for this project.
6.2 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Agreement and furnished the required contract security, whereupon the Bid security will be returned. The Bid security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of the seventh day after the Effective Date of the Agreement or the sixty-first day after the Bid opening, whereupon Bid security furnished by such Bidders will be returned. Bid security with Bids which are not competitive will be returned within seven days after the Bid opening.

7. **Contract Time:** The number of days within which, or the dates by which, the WORK is to be substantially completed and also completed and ready for final payment (the Contract Time) are set forth in the Proposal and the Agreement.

8. **Liquidated Damages:** Provisions for liquidated damages are set forth in the Agreement.

9. **Substitute or "Or Equal" Items:** The materials and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution. No substitution will be considered unless written request for approval has been submitted by the Bidder and has been received by ENGINEER at least fifteen (15) days prior to the date for receipt of Bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance and test data and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or WORK that incorporation of the substitute would require shall be included. The burden of proof of the merit of the proposed substitute is upon the Bidder. The ENGINEER's decision of approval or disapproval of a proposed substitution shall be final. If ENGINEER approves any proposed substitution, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner. The Bidder shall be responsible for all costs of all changes resulting from any such substitutions.

10. **Subcontractors, Suppliers and Others:**

10.1 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, and other persons and organizations (including those who are to furnish the principal items of material and equipment) to be submitted to OWNER in advance of the specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within seven days after the Bid opening submit to OWNER a list of all such Subcontractors, Suppliers and other persons and organizations proposed for those portions of the WORK for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, person or organization if requested by OWNER. If OWNER or ENGINEER after due investigation has reasonable objection to any proposed Subcontractor, Supplier, other person or organization, either may before the Notice of Award is given request the apparent Successful Bidder to submit an acceptable substitute without an increase in Bid price. If apparent Successful Bidder declines to make any such substitution, OWNER may award the contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers and other persons and organizations. The declining to make requested substitutions will not constitute grounds for sacrificing the Bid security of any Bidder. Any
Subcontractor, Supplier, other person or organization listed and to whom OWNER or ENGINEER does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.8.2 of the General Conditions.

10.2 No CONTRACTOR shall be required to employ any Subcontractor, Supplier, other person or organization against whom CONTRACTOR has reasonable objection.

11. Proposal:

11.1 The Proposal is included with the Bidding Documents.

11.2 All blanks in the Proposal must be completed in ink or by typewriter.

11.3 Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature.

11.4 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

11.5 All names must be typed or printed below the signature.

11.6 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which must be filled in on the Proposal).

11.7 The address and telephone number for communications regarding the Bid must be shown.

12. Submission of Bids:

12.1 Bids shall be submitted at the time, place, and as specified indicated in the Advertisement for Bids and shall be enclosed in a sealed envelope, marked with the project title, “Carl-Bethlehem Road 24-Inch Water Transmission Main Relocation”. FAILURE TO COMPLY WITH THIS PARAGRAPH WILL RESULT IN DISQUALIFICATION.

12.2 All costs associated with preparation of Bids in response to this RFB will be the responsibility of the bidder and will not be reimbursed by the OWNER.

The OWNER will not be responsible for late mail delivery of bids and no bid may be withdrawn or modified in any way after the deadline for bid opening. No bid amounts shall be shown on the outside of the bid envelope.

12.3 Barrow County requires the original unbound copy and four (4) bound copies of the bid.
13. Modification and Withdrawal of Bids:

13.1 Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

14. Opening of Bids: Bids will be opened, and read aloud.

15. Bids to Remain Subject to Acceptance: All bids will remain subject to acceptance for sixty (60) days after the day of the Bid opening, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to that date.

16. Award of Contract:

16.1 OWNER reserves the right to reject any and all Bids, to waive any and all formalities not involving price, time or changes in the WORK and to negotiate contract terms with the Successful Bidder, and the right to disregard all nonconforming, non-responsive, unbalanced or conditional Bids. OWNER reserves the right to reject the Bid of any Bidder at the OWNER’s sole discretion. OWNER also reserves the right to resolve any discrepancies in the multiplication of units of WORK and unit prices or between the indicated sum of any column of figures and the correct sum at the OWNER’s sole discretion.

16.2 In evaluating Bids, OWNER will consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Proposal or prior to the Notice of Award.

16.3 OWNER may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the WORK as to which the identity of Subcontractors, Suppliers, and other persons and organizations must be submitted as provided in the Supplementary Conditions. OWNER also may consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the WORK when such data is required to be submitted prior to the Notice of Award.

16.4 OWNER may conduct such investigations as OWNER deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of Bidders, proposed Subcontractors, Suppliers and other persons and organizations to perform and furnish the WORK in accordance with the Contract Documents to OWNER’s satisfaction within the prescribed time.

16.5 If the contract is to be awarded, OWNER will give the Successful Bidder a Notice of Award within sixty days after the day of the Bid opening.

17. Contract Security: Performance and Payment Bonds shall be submitted as specified in the Advertisement for Bids. Only Barrow County Performance and Payment Bond Forms will be accepted.
18. **Signing of Agreement:** All bidders are required to execute the Construction Agreement included in this bid package to indicate the bidder’s willingness to comply with all terms of the Agreement and to submit the executed Agreement with the bid. Upon award of the Project to the winning bidder, the County will execute the Agreement. There will be no re-negotiation of terms of the Agreement. Please be advised that the bidder’s execution of the Agreement prior to the award of the Project does not constitute the acceptance of an offer by the County or otherwise bind the County in any way until such time as the County executes the Agreement.

19. **Laws and Regulations:** The CONTRACTOR shall keep itself fully informed of all laws, ordinances and regulations of State, City and County in any manner affecting those engaged or employed in the WORK, or the materials 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 this contract, or in the drawings or specifications herein referred to, in relation to any such law, ordinance, regulation, order or decree, CONTRACTOR shall forthwith report the same in writing to the OWNER. 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 and its agents against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree whether by CONTRACTOR or by its employees.

20. **Non-Segregated Facilities:** Bidders must certify that they do not and will not, maintain or provide for their employees any facilities that are segregated on a basis of race, color, creed or national origin.

21. **OWNER’s Options To Purchase Materials:**

21.1 By submitting a Bid, a Bidder agrees to allow the OWNER to purchase certain materials for this Project at the price quoted to Bidder by its supplier. The Bidder further agrees to execute a change order at the time of execution of the Contract Agreement to adjust the appropriate unit prices or extended totals and total contract amount. The amount of the change order will be based on deducting from the prices bid the sum of:

21.1.1 The cost of the materials;
21.1.2 Shipping costs, based on freight-on board (FOB) job site; and
21.1.3 Sales tax in the amount of seven percent of the sum of the two preceding items.

21.2 By virtue of a Bidder utilizing quotes from suppliers in the preparation of its bid for this Project, the Bidder declares that it has reached an agreement with its potential suppliers to allow the OWNER to purchase the materials for this Project from the suppliers in accordance with the terms and conditions included herein.

21.3 The apparent Low Bidder supplier of the designated material shall each submit a sworn affidavit stating the cost of the material and the cost of shipping the material which was utilized in the Bidder’s preparation of its bid.
21.4 In the event the OWNER furnishes materials for this Project:

21.4.1 The CONTRACTOR shall be responsible for scheduling shop drawings, the delivery of the materials to the Project site, as well as establishing the hours of delivery and method of delivery to the Project site. The CONTRACTOR shall maintain communication with the material schedules. The CONTRACTOR shall submit, with construction progress schedule, a schedule for required deliveries of OWNER furnished material.

21.4.2 No additional payment shall be made to CONTRACTOR on account of delays in delivery of materials furnished by the OWNER.

21.4.3 The CONTRACTOR shall pay all delivery waiting charges.

21.4.4 The CONTRACTOR shall review and handle all shop drawings prepared by the supplier in accordance with Section IX of these Specifications.

21.4.5 Upon delivery of materials, the CONTRACTOR shall proceed without delay to unload such materials.

21.4.6 Should any material be damaged, lost, or fail under test, and in the opinion of the ENGINEER, such failure or damage is the result of improper handling, it shall be replaced in kind by the CONTRACTOR at no cost to the OWNER.

21.4.7 No additional payment will be made for receiving, handling and distributing materials furnished by the OWNER.

21.4.8 Fittings, solid sleeves and special pipe, which are not shown on the Drawings and which are installed for the convenience of the CONTRACTOR, shall not be paid for the OWNER.

21.4.9 Upon receipt of materials from the manufacturer, the CONTRACTOR shall make an inspection of such materials, checking and certifying the bill of lading, noting any discrepancies and obtaining a proper memorandum signed by the agent of the carrier for any shortage in the shipment, or for any damaged materials received. All bills of lading and any memorandum for shortage of damage of material in the shipment shall be promptly submitted to the ENGINEER. The CONTRACTOR shall be responsible for distribution of all materials as required to complete the WORK. Materials furnished to the CONTRACTOR shall be in the custody of the CONTRACTOR from the time of receipt by the CONTRACTOR of such materials from the carrier until final acceptance of the completed WORK. The CONTRACTOR shall be responsible for any loss or damage to materials furnished by the OWNER.

22. Payments from County: Payments will be made to the CONTRACTOR based from actual quantities installed.

23. Construction Staking: Construction staking services shall be provided by the CONTRACTOR. Barrow County will coordinate with the West Winder Bypass Contractor (E.R. Snell) who can provide staking assistance.

END OF SECTION
SECTION III
PROPOSAL

To: Mike Renshaw, County Manager
Barrow County Board of Commissioners
30 North Broad Street
Winder, Georgia, 30680

PROJEC T TITLE: Carl-Bethlehem Road 24-Inch Water Transmission main Relocation

Bidder's person to contact for additional information on this Bid Form:

Name:

Address:

Telephone:

Licensed, Class:

Contractor No.

1. BIDDER’S DECLARATION AND UNDERSTANDING

1.1 The undersigned, hereinafter called the Bidder, declares that the only persons or parties interested in this Bid are those named herein, that this Bid is, in all respects, fair and without fraud, that it is made without collusion with any official of the OWNER, and that the Bid is made without any connection or collusion with any person submitting another Bid on this Project.

1.2 The Bidder further declares that he has carefully examined the Bidding and Contract Documents for the construction of the project, that he has personally inspected the site, that he has satisfied himself as to the quantities involved, including materials and equipment, and conditions of work involved, including the fact that the description of the quantities of work and materials, as included herein, is brief and is intended only to indicate the general nature of the work and to identify the said quantities with the detailed requirements of the Bidding and Bidding and Contract Documents, and that this Bid Form is made according to the provisions and under the terms of the Bidding Documents, which Documents are hereby made a part of this Bid Form.
1.3 The Bidder further acknowledges that he has satisfied himself as to the nature and location of the work, the general and local conditions, particularly those bearing access to the site; rights-of-way and temporary construction limits; disposal, handling and storage of materials; availability of labor, water, electric power, and roads; and uncertainties of weather, creek stages, or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during the prosecution of the work and all other matters which can in any way affect the work or the cost thereof covered by the Bidding and Contract Documents.

1.4 The Bidder further acknowledges that he has satisfied himself/herself as to the character, quality, and quantity of surface and subsurface materials to be encountered from his inspection of the site and from reviewing any available records or exploratory work furnished by the OWNER or included in these Documents. Failure by the CONTRACTOR to acquaint himself with the physical conditions of the site and all available information will not relieve him from responsibility for properly estimating the difficulty or cost of successfully performing the work.

1.5 The Bidder warrants that as a result of his examination and investigation of all the aforesaid data that he can perform the work in a good and workmanlike manner and to the satisfaction of the OWNER. The OWNER assumes no responsibility for any representations made by any of its officers or agents during or prior to the execution of the Agreement, unless (1) such representations are expressly stated in the Agreement Form, and (2) the Agreement Form expressly provides that the responsibility therefore is assumed by the OWNER.

1.6 Bidder shall include the following additional documents and information with this Bid Form:

   1.6.1 Bid Security

   1.6.2 Bidder’s Certification of License Number on the outside of envelope containing this Bid Form.

2. CONTRACT EXECUTION AND BONDS

2.1 The Contractor grants to the OWNER the exclusive right and option to accept its bid, upon the terms and conditions provided for in the Bidding Documents. The Contractor shall be obligated to hold its bid open for sixty (60) days from the date of the submittal of its bid. The OWNER may exercise its right to accept the bid at any time during this sixty (60) day period.
2.2 All bidders are required to execute the Construction Agreement included in this bid package to indicate the bidder’s willingness to comply with all terms of the Agreement and to submit the executed Agreement with the bid. Upon award of the Project to the winning bidder, the County will execute the Agreement. There will be no re-negotiation of terms of the Agreement. Please be advised that the bidder’s execution of the Agreement prior to the award of the Project does not constitute the acceptance of an offer by the County or otherwise bind the County in any way until such time as the County executes the Agreement.

The Bidder will, within 5 days from receiving Notice of Award, deliver to the OWNER the Performance Bond, Payment Bond, and Certificate(s) of Insurance, required herein, and will, to the extent of his bid, furnish all machinery, tools, apparatus, and other means of construction and do the work and furnish all the materials necessary to complete all work as specified or indicated in the Bidding and Contract Documents.

3. CERTIFICATES OF INSURANCE

3.1 The Successful Bidder agrees to furnish the OWNER, within 5 days from receiving Notice of Award, both the Certificate of Insurance required herein and the insurance company's own Certificate of Insurance.

3.2 The Successful Bidder further agrees that the total bid amount stated herein includes specific consideration for the insurance coverages, including contractual liability, specified in the Bidding and Contract Documents.

4. START OF CONSTRUCTION AND CONTRACT COMPLETION TIME

4.1 The Successful Bidder further agrees to promptly mobilize and begin work within 15 days from the Contract start date specified in the OWNER’S Notice to Proceed, and to be substantially complete, as defined in the General Conditions, within 60 days from the Contract start date specified in the OWNER’S Notice to Proceed. All work tasks of the total project shall be complete in all respects within 60 days from the date specified in the OWNER’S Notice to Proceed.

5. ADDENDA

5.1 The Bidder hereby acknowledges that he has received Addenda No’s (Bidder shall insert No. of each Addendum received) and agrees that all addenda issued are hereby made part of the Bidding and Contract Documents, and the Bidder further agrees that his Bid Form includes all impacts resulting from said addenda.

6. SALES AND USE TAXES

6.1 The Bidder agrees that all sales and use taxes, if applicable, are included in the stated bid prices for the work.

7. BASIS OF AWARD

7.1 Award of Contract will be made in accordance with Paragraph 16 (Award of Contract) of the INSTRUCTIONS TO BIDDERS.

8. TOTAL BID AMOUNT
8.1 The Bidder further proposes to accept as full payment for the work proposed herein the amounts computed under the provisions of the Bidding and Contract Documents and based on the following unit price amounts, it being expressly understood that the unit prices are independent of the exact quantities involved for each. The Bidder agrees that the unit prices represent a true measure of all labor and materials required to perform the work, including all allowances for overhead, profit, bond cost and any and all other costs associated with the work for each type and unit of work called for in these Bidding and Contract Documents. The unit price amounts shall be shown in both words and figures. In case of a discrepancy, the amounts shown in words shall govern.

8.2 UNIT PRICE

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<tr>
<th>Bid Item No.</th>
<th>Bid Item</th>
<th>Qty</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Total Amount</th>
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<td>Five Thousand and 00/100 Dollars</td>
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<td>Dollars</td>
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<td>24&quot; Ductile Iron Pipe</td>
<td>1,180</td>
<td>LF</td>
<td>$________<strong><strong>/LF</strong></strong>___________________</td>
<td>Dollars</td>
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<td>Qty</td>
<td>Unit</td>
<td>Unit Price</td>
<td>Extended Total Amount</td>
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<td>8</td>
<td>24” Restrained Joint Ductile Iron Pipe</td>
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<td>LF</td>
<td>$<strong><strong><strong><strong><strong><strong><strong>/LF</strong></strong></strong></strong></strong></strong></strong>____________</td>
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<td>24” Butterfly Valve</td>
<td>2</td>
<td>EA</td>
<td>$<strong><strong><strong><strong><strong><strong><strong>/EA</strong></strong></strong></strong></strong></strong></strong>____________</td>
<td>$______________Dollars</td>
</tr>
<tr>
<td>10</td>
<td>Air Release and Vacuum Valve</td>
<td>2</td>
<td>EA</td>
<td>$<strong><strong><strong><strong><strong><strong><strong>/EA</strong></strong></strong></strong></strong></strong></strong>____________</td>
<td>$______________Dollars</td>
</tr>
<tr>
<td>11</td>
<td>Remove and Salvage Existing Air Release Valves</td>
<td>2</td>
<td>EA</td>
<td>$<strong><strong><strong><strong><strong><strong><strong>/EA</strong></strong></strong></strong></strong></strong></strong>____________</td>
<td>$______________Dollars</td>
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<tr>
<td>12</td>
<td>Connect to Existing 24” Water Main</td>
<td>2</td>
<td>EA</td>
<td>$<strong><strong><strong><strong><strong><strong><strong>/EA</strong></strong></strong></strong></strong></strong></strong>____________</td>
<td>$______________Dollars</td>
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<tr>
<td>13</td>
<td>Cut, Plug, and Abandon Existing 24” Water Main</td>
<td>2</td>
<td>EA</td>
<td>$<strong><strong><strong><strong><strong><strong><strong>/EA</strong></strong></strong></strong></strong></strong></strong>____________</td>
<td>$______________Dollars</td>
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<tr>
<td>14</td>
<td>Hay Bales</td>
<td>40</td>
<td>EA</td>
<td>$<strong><strong><strong><strong><strong><strong><strong>/EA</strong></strong></strong></strong></strong></strong></strong>____________</td>
<td>$______________Dollars</td>
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<tr>
<td>15</td>
<td>Temporary Silt Fence Type “C”</td>
<td>780</td>
<td>LF</td>
<td>$<strong><strong><strong><strong><strong><strong><strong>/LF</strong></strong></strong></strong></strong></strong></strong>____________</td>
<td>$______________Dollars</td>
</tr>
<tr>
<td>16</td>
<td>Dry Straw or Hay Mulch</td>
<td>2</td>
<td>TON</td>
<td>$__________<strong><strong>/TON</strong></strong>____________________</td>
<td>$______________Dollars</td>
</tr>
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</table>
### Bid Item Summary

<table>
<thead>
<tr>
<th>Bid Item</th>
<th>Qty</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Total Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeding and Mulch</td>
<td>1,160</td>
<td>LF</td>
<td>$__________<strong><strong>/LF</strong></strong>___________</td>
<td>________________________ Dollars</td>
</tr>
<tr>
<td>Crusher Run Backfill (If Authorized by Owner)</td>
<td>225</td>
<td>TON</td>
<td>$<strong><strong><strong><strong><strong><strong><strong>/TON</strong></strong></strong></strong></strong></strong></strong>______</td>
<td>________________________ Dollars</td>
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**NOTE:** All labor, material and equipment required to complete the work as shown on the plans but not specifically itemized in the above bid items but shown or called out on the plans shall be included in the price.

TOTAL OF EXTENDED AMOUNT FOR UNIT PRICES LISTED ABOVE:

_________________________________________________________ Dollars

and ___________________________________________ cents $______________________________________________

(Amount written in words has precedence)

8.3 Bidder acknowledges that the unit prices have been computed in accordance with the General Conditions. Bidder further acknowledges that quantities are not guaranteed and final payment will be based on actual quantities determined as provided in Bidding and Contract Documents.

8.4 Total Base Bid Summary:

| Unit Price Extended Total: | $______________________________________________ |
| parseerror (including bond premium) |

| TOTAL BID AMOUNT: | $______________________________________________ |

(including bond premium)
### EXPERIENCE OF BIDDER

9.1 The Bidder submits the following list of at least five clients for whom projects involving similar construction have been performed within the past 10 years.

<table>
<thead>
<tr>
<th>1) Name of Client (Owner and Contact)</th>
<th>Email Address</th>
<th>Telephone Number</th>
<th>Street</th>
<th>City</th>
<th>State</th>
<th>Zip</th>
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<th>2) Name of Client (Owner and Contact)</th>
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<th>3) Name of Client (Owner and Contact)</th>
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<th>4) Name of Client (Owner and Contact)</th>
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</table>
10. PERFORMANCE OF WORK BY CONTRACTOR

10.1 The Bidder shall perform at least 50 percent of the work with his own forces.

11. SUBCONTRACTORS

11.1 The Bidder further proposes that the following subcontracting firms or businesses will be awarded subcontracts for the following portions of the work in the event that the Bidder is awarded the Contract:

<table>
<thead>
<tr>
<th>Name</th>
<th>Type of Work</th>
<th>Street</th>
<th>City</th>
<th>State</th>
<th>Zip</th>
</tr>
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<tr>
<th>Name</th>
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</tr>
</tbody>
</table>
12. **SURETY**

12.1 If the Bidder is awarded a construction Contract, the Surety who provides the Performance Bond and Payment Bond will be:

______________________________ whose address is

Street__________________________

City___________________________ State_________ Zip_________

13. **BIDDER**

13.1 The name of the Bidder submitting this Bid Form is

______________________________ doing business at

Street__________________________

City___________________________ State_________ Zip_________

which is the address to which all communications concerned with this Bid Form and with the Agreement Form shall be sent.

13.2 The names of the principal officers of the corporation submitting this Bid Form, or of the partnership, or of all persons interested in this Bid Form as principals are as follows:

___________________________________________________________

___________________________________________________________

___________________________________________________________
If Sole Proprietor or Partnership

IN WITNESS hereto the undersigned has set his (its) hand this ____ day of _______ 20___.

________________________________________
Signature of Bidder

________________________________________
Title
IN WITNESS WHEREOF the undersigned corporation has caused this instrument to be executed and its seal affixed by its duly authorized officers this ______ day of ________________ 20_____.

(SEAL)

Name of Corporation

________________________________________

By

________________________________________

Title

________________________________________

Attest

Secretary

________________________________________

End of Section
SECTION IV
BID BOND
BARROW COUNTY BOARD OF COMMISSIONERS
WINDER, GEORGIA

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (hereinafter referred to as the “County” (Name and Address):
    Barrow County Board of Commissioners
    30 North Broad Street
    Winder, Georgia 30680

BID
BID DUE DATE:
PROJECT (Brief Description Including Location):

BOND
BOND NUMBER:
DATE (Not later than Bid due date):
PENAL SUM: ____________________________ (Words) ____________________________ (Figures)

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby to the County, subject to the terms printed below or on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent or representative.

BIDDER       SURETY

Bidder’s Name and Corporate Seal  Surety’s Name and Corporate Seal

By: ____________________________ (Seal)  By: ____________________________ (Seal)
Signature and Title:                     Signature and Title:
(Attach Power of Attorney)

Attest: ____________________________  Attest: ____________________________
Signature and Title:                     Signature and Title:

Note: (1) Above addresses are to be used for giving any notice required by the terms of this Bid Bond.
Any singular reference to Bidder, Surety, the County or any other party shall be considered plural where applicable.
1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to the County upon Default of Bidder the penal sum set forth on the face of this Bond.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension of that time agreed to in writing by the County) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

   3.1 The County accepts Bidder’s Bid and Bidder delivers within the time required by the Bidding Documents (or any extension of that time agreed to in writing by the County) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents; or

   3.2 All Bids are rejected by the County; or

   3.3 The County fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension of that time agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon Default by Bidder within 30 calendar days after receipt by Bidder and Surety of a written Notice of Default from the County, which Notice will be given with reasonable promptness and will identify this Bond and the Project and include a statement of the amount due.

5. Surety waives notice of, as well as any and all defenses based on or arising out of, any time extension to issue a Notice of Award agreed to in writing by the County and Bidder, provided that the total time, including extensions, for issuing a Notice of Award shall not in the aggregate exceed 120 days from Bid due date without Surety’s written consent.

6. No suit or action shall be commenced under this Bond either prior to 30 calendar days after the Notice of Default required in paragraph 4 above is received by Bidder and Surety or later than one year after Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the State of Georgia.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term “Bid” as used herein includes a Bid, offer or proposal, as applicable under the particular circumstances.

12. The terms of this Bid Bond shall be governed by the laws of the State of Georgia.
CONSTRUCTION SERVICES AGREEMENT
RFB2019-17 CARL-BETHLEHEM ROAD 24-INCH WATER TRANSMISSION MAIN RELOCATION

This Construction Services Agreement (the “Agreement”) is made and entered into this ___ day of ____, 2019 (the “Effective Date”), by and between BARROW COUNTY, GEORGIA, a political subdivision of the State of Georgia, acting by and through its governing authority, the Barrow County Board of Commissioners (“County”) and __________________________, a ______________________ (hereinafter referred to as the “Contractor”), collectively referred to herein as the “Parties”.

WITNESSETH:

WHEREAS, the County desires to retain a contractor to perform services for construction as defined below; and

WHEREAS, the County solicited bids for the Project pursuant to the Request for Bids RFB2019-17, dated ________________, maintained on file with the Purchasing Division of the Finance Department.

WHEREAS, the Contractor submitted a complete and timely bid, attached hereto as “Exhibit A” and incorporated herein by reference, and met all bid requirements such that the County awarded RFB2019-17 CARL-BETHLEHEM ROAD 24-INCH WATER TRANSMISSION MAIN RELOCATION to the Contractor; and

WHEREAS, the Contractor has represented that it is qualified by training and experience to perform the Work; and

WHEREAS, based upon Contractor’s bid, the County has selected Contractor as the successful bidder, and

WHEREAS, Contractor desires to perform the Work as set forth in this Agreement under the terms and conditions provided in this Agreement; and

WHEREAS, the public interest will be served by this Agreement; and

WHEREAS, Contractor has familiarized itself with the nature and extent of the Contract Documents, the Project, and the Work, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that may in any manner affect cost, progress or performance of Work, and Contractor is aware that it must be licensed to do business in the State of Georgia.
NOW THEREFORE, for and in consideration of the mutual promises, the public purposes, and the acknowledgements and agreements contained herein and other good and adequate consideration, the sufficiency of which is hereby acknowledged, the Parties hereto do mutually agree as follows:

Section 1. Contract Documents

This Agreement along with the following documents, attached hereto (except as expressly noted otherwise below) and incorporated herein by reference, constitute the “Contract Documents”:

A. Request for Bids, (a true and correct copy of which has been provided to Contractor with original maintained on file with the Purchasing Division of the Finance Department);

B. Bid Documents from Contractor, dated ______________ ____, ______, attached hereto as “Exhibit A”;

C. Scope of Work, (a true and correct copy of which has been provided to Contractor with original maintained on file with the Purchasing Division of the Finance Department);

D. Any required Performance Bond and/or Payment Bond, attached hereto collectively as “Exhibits B.1 and B.2”;

E. Noncollusion Affidavit of Prime Bidder, attached hereto as “Exhibit C”;

F. Final Affidavit, attached hereto as “Exhibit D”;

G. Alien Employment affidavits, attached hereto as “Exhibits E.1 and E.2”;

H. Plans, drawings and specifications (included in the RFP referenced in 1.A. above), with any modifications (if issued), attached hereto as “Exhibit F”;

I. Additional Payment/Retainage Requirements, attached hereto as “Exhibit G”;

J. Key Personnel, attached hereto as “Exhibit H”;

K. Contract Administration provisions (if issued), attached hereto as “Exhibit I”;

L. General Conditions (if issued), attached hereto as “Exhibit J”;

M. Supplementary Conditions (if issued), attached hereto as “Exhibit K”;
N. Notice of Award, attached hereto as “Exhibit L”;

O. Barrow County Code of Ethics (codified in the official Code of Barrow County);

P. The following, which may be delivered or issued after the Effective Date of the Agreement and are not attached hereto: All Change Orders (defined in Section 6 below), other written amendments, and other documents amending, modifying, or supplementing the Contract Documents if properly adopted in writing and executed by the Parties.

Section 2. Project Description

A. Project. A general description of the Project is as follows: RFB2019-17 CARL-BETHLEHEM ROAD 24-INCH WATER TRANSMISSION MAIN RELOCATION, which is described generally constructing a new 24” diameter ductile iron pipe water main to replace approximately 1,400 of existing water main along future GDOT road construction for the West Winder Bypass, including 200 LF, 3de6” diameter casing, isolation valves, air release valves, and miscellaneous appurtenances. (the “Project”). See the Plans, Drawings and/or Specifications attached at Exhibit F for additional information.

Section 3. The Work

A. The Work. The Work to be completed under this Agreement (the “Work”) includes, but shall not be limited to, the work described in the Specifications and Instructions, Bid Form, and Plans, included in the RFB2019-17 and elsewhere in the Contract Documents for the Project, a true and correct copy of which has been provided to Contractor with original maintained on file in the Purchasing Division of the Finance Department. The Work includes all material, labor, insurance, tools, equipment, machinery, water, heat, utilities, transportation, facilities, services and any other miscellaneous items and work reasonably inferable from the Contract Documents. The term “reasonably inferable” takes into consideration the understanding of the Parties that some details necessary for proper execution and completion of the Work may not be shown on the drawings or included in the specifications or Scope of Work, but they are a requirement of the Work if they are a usual and customary component of the Work or are otherwise necessary for proper and complete installation and operation of the Work. Contractor shall complete the Work in strict accordance with the Contract Documents. In the event of any discrepancy among the terms of the various Contract Documents, the provision most beneficial to the County, as determined by the County in its sole discretion, shall govern.
B. Notice to Proceed. The County will issue a Notice to Proceed, which Notice to Proceed shall state the dates for beginning Work (“Commencement Date”) and the Expected Date of Final Completion (defined in Section 4(A) below). Unless otherwise approved, the Contractor shall perform its obligations under this Agreement as expeditiously as is consistent with reasonable skill and care and the orderly progress of the Work.

C. Plans; Drawings and Specifications. The plans, drawings and specifications, a true and correct copy of which has been provided to Contractor with original maintained on file in the County Purchasing Department, are hereby acknowledged by the Parties and incorporated herein by reference.

D. Shop Drawings, Product Data, and Samples. Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents, but must be in conformity therewith. The purpose of their submittal is to demonstrate, for those portions of the Work for which submittals are required by the Contract Documents, the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents.

   (i) “Shop Drawings” are drawings, diagrams, schedules and other data specifically prepared for the Work by the Contractor or a subcontractor, sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

   (ii) “Product Data” are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

   (iii) “Samples” are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

The Contractor shall review for compliance with the Contract Documents and shall approve and submit to the Contract Administrator Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the County or of separate contractors. By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. Submittals which are not marked as reviewed for compliance with the Contract
Documents and approved by the Contractor may be returned by the Contract Administrator without action. The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved in writing by the Contract Administrator, provided that submittals that are not required by the Contract Documents may be returned without action.

The Work shall be completed in accordance with approved submittals, provided that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Contract Administrator's approval of Shop Drawings, Product Data, Samples or similar submittals, unless the Contractor has specifically informed the Contract Administrator in writing of such deviation at the time of submittal and (1) the Contract Administrator has given written approval to the specific deviation as a minor change in the Work, or (2) a written Change Order has been issued and approved to authorize the deviation. The Contract Administrator’s approval of the Shop Drawings, Product Data, Samples or similar submittals shall not relieve the Contractor of responsibility for errors or omissions therein.

The Contractor shall, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, direct the Contract Administrator’s attention to any additional revisions included other than those requested by the Contract Administrator on previous submittals. In the absence of such written notice drawing the Contract Administrator’s attention to such additional revisions, the Contract Administrator’s approval of a resubmission shall not apply to such additional revisions.

The Contractor shall maintain at the Project site(s) one record copy of the Contract Documents in good order and marked currently to record field changes and selections made during construction and one record copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These documents shall be available to the County and Contract Administrator and shall be delivered to the Contract Administrator or County upon completion of the Work.

Section 4. **Contract Term; Liquidated Damages; Expedited Completion; Partial Occupancy or Use**

A. **Contract Term.** The term of this Agreement (“Term”) shall commence on the Effective Date and continue until the earlier of the Expected Date of Final Completion or the proper termination and non-renewal of this Agreement (provided that certain obligations, including but not limited to Warranty obligations, will survive termination/expiration of this Agreement).
warrants and represents that it will perform its Work in a prompt and timely manner, which shall not impose delays on the progress of the Work. The Contractor shall commence Work pursuant to this Agreement within five (5) business days of the Commencement Date provided by the County and the Parties intend that all Work shall be completed on or before sixty (60) days following the commencement date specified in the Notice to Proceed. Every effort will be made by Contractor to shorten this period. If the Term of this Agreement continues beyond the fiscal year in which this Agreement is executed, the Parties agree that this Agreement, as required by O.C.G.A. § 36-60-13, shall terminate absolutely and without further obligation on the part of the County on June 30 of each year of the Term, and further, that this Agreement shall automatically renew on July 1 of each subsequent year absent the County’s provision of written notice of non-renewal to Contractor at least five (5) calendar days prior to the end of the then current fiscal year. Title to any supplies, materials, equipment, or other personal property shall remain in Contractor until fully paid for by the County.

B. Time is of the Essence; Liquidated Damages. Contractor specifically acknowledges that TIME IS OF THE ESSENCE of this Agreement and that County will suffer financial loss if the Work is not completed in accordance with the deadlines specified in Section 4(A) above and within the Contract Documents. The County and Contractor also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by the County if the Work is not completed within the specified times. Accordingly, instead of requiring any such proof, the County and Contractor agree that, as liquidated damages for delay (but not as a penalty), the Contractor shall pay to the County One hundred and fifty dollars and 00/100 Dollars ($150.00) for each and every calendar day that expires after a deadline provided in the Contract Documents.

C. Expediting Completion. The Contractor is accountable for completing the Work within the time period provided in the Contract Documents. If, in the judgment of the County, the Work is behind schedule and the rate of placement of work is inadequate to regain scheduled progress to ensure timely completion of the entire Work or a separable portion thereof, the Contractor, when so informed by the County, shall immediately take action to increase the rate of work placement by:

(1) An increase in working forces;
(2) An increase in equipment or tools;
(3) An increase in hours of work or number of shifts;
(4) Expediting delivery of materials; and/or
(5) Other action proposed if acceptable to County.

Within five (5) calendar days after such notice from County that the Work is behind schedule, the Contractor shall notify the County in writing of the specific measures taken and/or planned to increase the rate of progress. The Contractor
shall include an estimate as to the date of scheduled progress recovery. Should the County deem the plan of action inadequate, the Contractor shall take additional steps to make adjustments as necessary to its plan of action until it meets with the County’s approval and such approval is provided in writing by the County.

D. Partial Occupancy or Use. The County may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement between the County and Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the County and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. Immediately prior to such partial occupancy or use, the County, Contractor and Contract Administrator shall jointly inspect the area to be occupied, or portion of the Work to be used, in order to determine and record the condition of the Work. Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

Section 5. Contractor’s Compensation; Time and Method of Payment

A. Maximum Contract Price. The total amount paid under this Agreement as compensation for Work performed and reimbursement for costs incurred shall not, in any case, exceed $____________.___ (the “Maximum Contract Price”), except as outlined in Section 6 below. The compensation for Work performed shall be based upon the amount specified in Exhibit A, and Contractor represents that the Maximum Contract Price is sufficient to perform all of the Work set forth in and contemplated by this Agreement.

B. Additional Payment Requirements. Additional payment requirements are included as “Exhibit G”, attached hereto and incorporated herein by reference.

C. Material Deviations. Any material deviations in tests or inspections performed, or times or locations required to complete such tests or inspections, and like deviations from the Work described in this Agreement shall be clearly communicated to the County before charges are incurred and shall be handled through written Change Orders, as described in Section 6 below. Whenever the Contract Administrator considers it necessary or advisable, it shall have authority
to require inspection or testing of the Work. However, neither this authority of the Contract Administrator nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Contract Administrator to the Contractor, subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

D. Taxes. The County is a governmental tax-exempt entity and shall not be responsible for paying any taxes on any materials or services provided for herein. At Contractor’s request, County shall provide evidence of its tax-exempt status. To the extent, if any, that the County furnishes tangible personal property to Contractor for incorporation into the Project, Contractor shall be responsible for paying the amount of tax owed for such tangible personal property.

Section 6. Change Orders

A. Change Order Defined. A “Change Order” means a written modification of the Contract Documents, signed by representatives of the County and the Contractor with appropriate authorization.

B. Right to Order Changes. The County reserves the right to order changes in the Work to be performed under this Agreement by altering, adding to, or deducting from the Work. All such changes shall be incorporated in written Change Orders and executed by the Contractor and the County. Such Change Orders shall specify the changes ordered and any necessary adjustment of compensation and completion time. If the Parties cannot reach an agreement on the terms for performing the changed work within a reasonable time to avoid delay or other unfavorable impacts as determined by the County in its sole discretion, the County shall have the right to determine reasonable terms, and the Contractor shall proceed with the changed work.

C. Change Order Requirement. Any work added to the scope of this Agreement by a Change Order shall be executed under all the applicable conditions of this Agreement. No claim for additional compensation or extension of time shall be recognized, unless contained in a written Change Order duly executed on behalf of the County and the Contractor.

D. Authority to Execute Change Order. The County Manager has authority to execute, without further action of the Barrow County Board of Commissioners, any number of Change Orders so long as their total effect does not materially alter the terms of this Agreement or materially increase the Maximum Contract Price, as set forth in Section 5(A) above. Any such Change Orders materially altering the terms of this Agreement, or any Change Order increasing the price by more than Twenty-Five Thousand Dollars ($25,000.00), must be approved by resolution of
E. **Minor Changes in the Work.** The Contract Administrator will have the authority to order minor changes in the Work not involving adjustment in the Maximum Contract Price or extension of the Term and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order signed by the Contract Administrator. The Contractor shall carry out such written orders promptly. If the minor changes subsequently may affect adjustments in the Maximum Contract Price or the Term, the changes shall then be converted to a written Change Order by the requesting Party.

Section 7. **Covenants of Contractor**

A. **Ethics Code; Conflict of Interest.** Contractor agrees that it shall not engage in any activity or conduct that would result in a violation of the Barrow County Code of Ethics or any other similar law or regulation. Contractor certifies that to the best of his knowledge no circumstances exist which will cause a conflict of interest in performing the Work. Should Contractor become aware of any circumstances that may cause a conflict of interest during the Term of this Agreement, Contractor shall immediately notify the County. If the County determines that a conflict of interest exists, the County may require that Contractor take action to remedy the conflict of interest or terminate the Agreement without liability. The County shall have the right to recover any fees paid for services rendered by Contractor when such services were performed while a conflict of interest existed, if Contractor had knowledge of the conflict of interest and did not notify the County within five (5) business days of becoming aware of the existence of the conflict of interest.

B. **Meetings.** The Contractor is required to meet with the County’s personnel, or designated representatives, to resolve technical or contractual problems that may occur during the Term of this Agreement at no additional cost to the County. Meetings will occur as problems arise and will be coordinated by the County or the Contract Administrator. The Contractor will be given a minimum of three (3) full business days’ notice of meeting date, time, and location. Face-to-face meetings are desired. However, at the Contractor’s option and expense, a conference call meeting may be substituted. Consistent failure to participate in problem resolution meetings, two consecutive missed or rescheduled meetings, or failure to make a good faith effort to resolve problems, may result in termination of the contract for cause.

C. **Expertise of Contractor.** Contractor accepts the relationship of trust and confidence established between it and the County, recognizing that the County’s intention and purpose in entering into this Agreement is to engage an entity with the requisite capacity, experience, and professional skill and judgment to provide the Work in pursuit of the timely and competent completion of the Work undertaken by Contractor under this Agreement. The Contractor agrees to use its
best efforts, skill, judgment, and abilities to perform its obligations and to further the interests of County and the Project in accordance with County’s requirements and procedures, and Contractor shall employ only persons duly qualified in the appropriate area of expertise to perform the Work described in this Agreement.

D. **Proper Execution by Contractor.** Contractor agrees that it will perform its services in accordance with the usual and customary standards of the Contractor’s profession or business and in compliance with all federal, state, and local laws, regulations, codes, ordinances, or orders applicable to the Project, including, but not limited to, O.C.G.A. § 50-5-63, any applicable records retention requirements, and Georgia’s Open Records Act (O.C.G.A. § 50-18-70, et seq.). Any additional work or costs incurred as a result of error and/or omission by Contractor as a result of not complying with the Contract Documents or not meeting the applicable standard of care or quality, including but not limited to those of repeated procedures and compensation for the Contract Administrator’s services or expenses, will be provided at Contractor’s expense and at no additional cost to the County. This provision shall survive termination of this Agreement.

It is the Contractor’s responsibility to be reasonably aware of all applicable laws, statutes, ordinances, building codes, and rules and regulations. If the Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the Contract Administrator and the County in writing of any portions of the Contract Documents that are at variance with the applicable laws, statutes, ordinances, building codes, and rules and regulations.

The Contractor’s duties shall not be diminished by any approval by the County or Contract Administrator of Work completed or produced; nor shall any approval by the County or Contract Administrator of Work completed or produced release the Contractor from any liability therefor, it being understood that the County is ultimately relying upon the Contractor’s skill and knowledge in performing the Work required under the Contract Documents.

Organization of the specifications into divisions, sections and articles, and arrangement of drawings shall not control the Contractor in dividing the Work among subcontractors or in establishing the extent of Work to be performed by any trade.

E. **Familiarity with the Work.**

(i) **Contractor Familiarity with Work.** Contractor represents that it has familiarized itself with the nature and extent of the Contract Documents, the Work, work site(s), locality, and all local conditions, laws and regulations that in any manner may affect cost, progress, performance, or furnishing of the Work. Since the Contract Documents are
complementary, before starting each portion of the Work, the Contractor shall carefully study and compare the various Contract Documents, site conditions, authorities, tests, reports and studies relative to that portion of the Work, as well as the information furnished by the County, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the Project site(s) affecting it. Contractor represents and agrees that it has correlated the results of all such observations, examinations, investigations, explorations, tests, reports, and studies with the terms and conditions of the Contract Documents. These obligations are for the purpose of facilitating construction by the Contractor and are not for the purpose of discovering errors, omissions, inconsistencies, or ambiguities in the Contract Documents; however, any errors, inconsistencies, omissions, or ambiguities discovered by the Contractor shall be reported promptly to the Contract Administrator and County in writing. Contractor represents that it has given the County written notice of all errors, omissions, inconsistencies, or ambiguities that the Contractor has discovered in the Contract Documents so far, and the written resolution thereof by the County is acceptable to the Contractor. Further, Contractor acknowledges that its obligation to give notice of all such errors, omissions, inconsistencies, or ambiguities shall be continuing during the Term of this Agreement. Any failure on the part of the Contractor to notify the Contract Administrator and County in writing of any errors, omissions, inconsistencies, or ambiguities in the Contract Documents that Contractor discovered or reasonably should have discovered shall result in a waiver and full release by the Contractor of any future arguments or defenses based on such errors, omissions, inconsistencies, or ambiguities against the County. Further, if the Contractor fails to perform its obligations pursuant to this paragraph, the Contractor shall pay such costs and damages to the County as would have been avoided if the Contractor had performed such obligations.

(ii) **Inspection of Prior Work.** If part of the Contractor’s Work depends for proper execution or results upon construction or operations by a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Contract Administrator apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the County’s or separate contractor’s completed or partially completed construction is fit and proper to receive the Contractor’s Work, except as to defects not then reasonably discoverable, and Contractor shall be responsible for all costs and damages resulting from its failure to report reasonably discoverable defects.
(iii) **Contractor Requests for Information.** If, with undue frequency (as determined by the County in its sole discretion), the Contractor requests information that is obtainable through reasonable examination and comparison of the Contract Documents, site conditions, and previous correspondence, interpretations or clarifications, the Contractor shall be liable to the County for reasonable charges from the Contract Administrator for the additional services required to review, research and respond to such requests for information.

F. **Supervision, Inspection and Construction Procedures.** The Contractor shall supervise and direct the Work, using the Contractor’s best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Agreement, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety therefor and, except as stated below, shall be fully and solely responsible for the jobsite safety for such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the County and Contract Administrator and shall not proceed with that portion of the Work without further written instructions from the County or Contract Administrator as approved in writing by the County.

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of this Agreement. The Contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury or loss to: (a) employees and other persons who may be affected, (b) the Work and materials and equipment to be incorporated therein, whether in storage on or off the Project site(s), under care, custody or control of the Contractor or Contractor’s subcontractors or sub-subcontractors, and (c) other property at the Project site(s) or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly
qualified personnel. If reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the Project site(s) by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the County and Contract Administrator in writing.

G. Tests and Inspections. Tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, or ordinances, rules, regulations or orders of public authorities having jurisdiction shall be made promptly at an appropriate time to avoid unreasonable delay in the Work. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the County, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Contract Administrator timely notice of when and where tests and inspections are to be made so that the Contract Administrator may be present for such procedures. Required permits or certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and delivered to the Contract Administrator within ten (10) calendar days of issuance.

H. Budgetary Limitations. Contractor agrees and acknowledges that budgetary limitations are not a justification for breach of sound principals of Contractor’s profession and industry. Contractor shall take no calculated risk in the performance of the Work. Specifically, Contractor agrees that, in the event it cannot perform the Work within the budgetary limitations established without disregarding sound principals of Contractor’s profession and industry, Contractor will give written notice immediately to the County.

I. County’s Reliance on the Work. The Contractor acknowledges and agrees that the County does not undertake to approve or pass upon matters of expertise of the Contractor and that therefore, the County bears no responsibility for Contractor’s Work performed under this Agreement. The Contractor acknowledges and agrees that the acceptance of Work by the County is limited to the function of determining whether there has been compliance with what is required to be produced under this Agreement. The County will not, and need not, inquire into adequacy, fitness, suitability or correctness of Contractor’s performance. Contractor further agrees that no approval of designs, plans, or specifications by any person, body, or agency shall relieve Contractor of the responsibility for adequacy, fitness, suitability, and correctness of Contractor’s Work under professional and industry standards, or for performing services under this Agreement in accordance with sound and accepted professional and industry principles.
J. Contractor’s Reliance on Submissions by the County. Contractor must have timely information and input from the County in order to perform the Work required under this Agreement. Contractor is entitled to rely upon information provided by the County, but Contractor shall be required to provide immediate written notice to the County if Contractor knows or reasonably should know that any information provided by the County is erroneous, inconsistent, or otherwise problematic.

K. Uncovering and Correction of Work. If a portion of the Work is covered contrary to the Contract Administrator’s request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Contract Administrator, be uncovered for examination by the Contract Administrator and be replaced at the Contractor’s expense without change in the Agreement Term.

If a portion of the Work has been covered which the Contract Administrator has not specifically requested to examine prior to its being covered or which the Contract Documents did not require to remain uncovered until examined, the Contract Administrator may request to see such Work, and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the County’s expense, which expense shall be agreed upon in writing prior to being incurred. If such Work is not in accordance with the Contract Documents, correction shall be at the Contractor’s expense, unless the condition was caused by the County, in which event the County shall be responsible for payment of such costs including reasonable charges, if any, by the Contract Administrator for additional service, which expense shall be agreed upon in writing prior to being incurred.

If the County prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the County may do so instead of requiring its removal and correction, in which case the Maximum Contract Price will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

L. Clean Up. Contractor shall keep the Project site(s) and surrounding area free from accumulation of waste materials or rubbish caused by operations under this Agreement. At completion of the Work, the Contractor shall remove from and about the Project waste materials, rubbish, the Contractor’s tools, construction equipment, machinery and surplus materials. If the Contractor fails to clean up as provided in the Contract Documents, the County may do so, and the cost thereof shall be charged to the Contractor.
M.  **Contractor’s Representative.** _______________ shall be authorized to act on Contractor's behalf with respect to the Work as Contractor’s designated representative.

N.  **Independent Contractor.** Contractor hereby covenants and declares that it is engaged in an independent business and agrees to perform the Work as an independent contractor and not as the agent or employee of the County. Nothing contained in this Agreement shall be construed to make the Contractor or any of its employees, servants or subcontractors an employee, servant or agent of the County for any purpose. The Contractor agrees to be solely responsible for its own matters relating to the time and place the Work is performed and the method used to perform such Work; the instrumentalities, tools, supplies, and/or materials necessary to complete the Work; hiring of subcontractors, agents, or employees to complete the Work; and the payment of employees, including benefits and compliance with Social Security, withholding, and all other regulations governing such matters. The Contractor agrees to be solely responsible for its own acts and those of its subordinates, employees, and subcontractors during the life of this Agreement. There shall be no contractual relationship between any subcontractor or supplier and the County by virtue of this Agreement with the Contractor. Any provisions of this Agreement that may appear to give the County the right to direct Contractor as to the details of the services to be performed by Contractor or to exercise a measure of control over such services will be deemed to mean that Contractor shall follow the directions of the County with regard to the results of such services only. It is further understood that this Agreement is not exclusive, and the County may hire additional entities to perform Work related to this Agreement. Inasmuch as the County and the Contractor are independent of each other, neither has the authority to bind the other to any third person or otherwise to act in any way as the representative of the other, unless otherwise expressly agreed to in writing signed by both Parties hereto. The Contractor agrees not to represent itself as the County’s agent for any purpose to any party or to allow any employee of the Contractor to do so, unless specifically authorized, in advance and in writing, to do so, and then only for the limited purpose stated in such authorization. The Contractor shall assume full liability for any contracts or agreements the Contractor enters into on behalf of the County without the express knowledge and prior written consent of the County.

O.  ** Responsibility of Contractor and Indemnification of County.** The Contractor covenants and agrees to take and assume all responsibility for the Work rendered in connection with this Agreement. The Contractor shall bear all losses and damages directly or indirectly resulting to it and/or the County on account of the performance or character of the Work rendered pursuant to this Agreement. To the fullest extent permitted by law, Contractor shall defend, indemnify, and hold
harmless the County and the County’s elected and appointed officials, officers, boards, commissions, employees, representatives, consultants, servants, agents, attorneys and volunteers (individually an “Indemnified Party” and collectively “Indemnified Parties”) from and against any and all claims, suits, actions, judgments, injuries, damages, losses, costs, expenses and liability of any kind whatsoever, including, but not limited to, attorney’s fees and costs of defense (“Liabilities”), which may arise from or be the result of an alleged willful, negligent, or tortious act or omission arising out of the Work, performance of contracted services, or operations by the Contractor, any subcontractor, anyone directly or indirectly employed by the Contractor or subcontractor, or anyone for whose acts the Contractor or subcontractor may be liable, regardless of whether or not the act or omission is caused in part by a party indemnified hereunder. This indemnity obligation does not include Liabilities caused by or resulting from the sole negligence of an Indemnified Party. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this provision.

In any and all claims against an Indemnified Party, by any employee of the Contractor, its subcontractor, anyone directly or indirectly employed by the Contractor or subcontractor, or anyone for whose acts the Contractor or subcontractor may be liable, the indemnification obligation set forth in this provision 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’ or workmen’s compensation acts, disability benefit acts, or other employee benefit acts. This obligation to indemnify, defend, and hold harmless the Indemnified Party(ies) shall survive expiration or termination of this Agreement, provided that the claims are based upon or arise out of actions or omissions that occurred during the performance of this Agreement.

P. Insurance.

(1) Requirements: The Contractor shall have and maintain in full force and effect for the duration of this Agreement, insurance insuring against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Work by the Contractor, its agents, representatives, employees or subcontractors. All policies shall be subject to approval by the County as to form and content. These requirements are subject to amendment or waiver if so approved in writing by the County Manager.
(2) Minimum Limits of Insurance: Contractor shall maintain the following insurance policies with coverage and limits no less than:

(a) Commercial General Liability: $1,000,000 (one million dollars) combined single limit per occurrence comprehensive/extended/enhanced Commercial General Liability policy with coverage including bodily and personal injury, sickness, disease or death, injury to or destruction of property, including loss of use resulting therefrom, damage to premises/operations, products/completed operations, independent consultants and contractual liability (specifically covering the indemnity), broad-from property damage, and underground, explosion and collapse hazard. This coverage may be achieved by using an excess or umbrella policy. The policy or policies must be on “an occurrence” basis (“claims made” coverage is not acceptable). If a general aggregate limit applies, the general aggregate limit shall apply separately to this project/location, and the general aggregate limit shall be twice the required occurrence limit.

(b) Commercial Automobile Liability (owned, non-owned, hired): $1,000,000 (one million dollars) combined single limit per occurrence $2,000,000 (two million dollars) aggregate for comprehensive Commercial Automobile liability coverage (owned, non-owned, hired) including bodily and personal injury, sickness, disease or death, injury to or destruction of property, including loss of use resulting therefrom.

(c) Workers’ Compensation and Employers’ Liability: Workers’ Compensation policy with limits as required by the State of Georgia and Employers’ Liability limits of $1,000,000 (one million dollars) per occurrence or disease. (If Contractor is a sole proprietor, who is otherwise not entitled to coverage under Georgia’s Workers’ Compensation Act, Contractor must secure Workers’ Compensation coverage approved by both the State Board of Workers’ Compensation and the Commissioner of Insurance. The amount of such coverage shall be the same as what is otherwise required of employers entitled to coverage under the Georgia Workers’ Compensation Act. Further, the Contractor shall provide a certificate of insurance indicating that such coverage has been secured and that no individual has been excluded from coverage.)

If higher limits are maintained by Contractor than shown above, the County shall be entitled to coverage for any additional insurance proceeds in excess of the specified minimum limits maintained by the Contractor.
(3) **Deductibles and Self-Insured Retentions:** Any deductibles or self-insured retentions must be declared to and approved by the County in writing so that the County may ensure the financial solvency of the Contractor; self-insured retentions should be included on the certificate of insurance.

(4) **Other Insurance Provisions:** Each policy shall contain, or be endorsed to contain, the following provisions respectively:

(a) **General Liability, Automobile Liability and Umbrella Liability Coverage.**

   (i) **Additional Insured Requirement.** The County and County’s elected and appointed officials, officers, boards, commissioners, employees, representatives, consultants, servants, agents and volunteers (individually “Insured Party” and collectively “Insured Parties”) shall be named as additional insureds as respects: liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor; premises owned, leased, or used by the Contractor; automobiles owned, leased, hired, or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Insured Parties. Nothing contained in this section shall be construed to require the Contractor to provide liability insurance coverage to any Insured Party for claims asserted against such Insured Party for its sole negligence.

   (ii) **Primary Insurance Requirement.** The Contractor’s insurance coverage shall be primary noncontributing insurance as respects to any other insurance or self-insurance available to the Insured Parties. Any insurance or self-insurance maintained by the Insured Parties shall be in excess of the Contractor’s insurance and shall not contribute with it.

   (iii) **Reporting Requirement.** Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the Insured Parties.

   (iv) **Separate Coverage.** Coverage shall state that the Contractor’s insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to limits of insurance provided.
(v) **Defense Costs/Cross Liability.** Coverage shall be provided on a “pay on behalf” basis, with defense costs payable in addition to policy limits. There shall be no cross liability exclusion.

(vi) **Subrogation.** The insurer shall agree to waive all rights of subrogation against the Insured Parties for losses arising from Work performed by the Contractor for the County.

(b) **Workers’ Compensation Coverage:** The insurer providing Workers’ Compensation Coverage will agree to waive all rights of subrogation against the Insured Parties for losses arising from Work performed by the Contractor for the County.

(c) **All Coverages:**

(i) **Notice Requirement.** Each insurance policy required by this Agreement shall be endorsed to state that coverage shall not be reduced, suspended, voided, or canceled except after thirty (30) calendar days’ prior written notice (or 10 calendar days if due to non-payment) has been given to the County. In addition, Contractor shall provide written notice to County at least thirty (30) days prior to any reduction, suspension, voiding, or cancellation of coverage. The County reserves the right to accept alternate notice terms and provisions, provided they meet the minimum requirements under Georgia law.

(ii) **Starting and Ending Dates.** Policies shall have concurrent starting and ending dates.

(iii) **Incorporation of Indemnification Obligations.** Policies shall include a Project-specific endorsement incorporating the indemnification obligations assumed by the Contractor under the terms of this Agreement, including but not limited to Section 7(O) of this Agreement.

(5) **Acceptability of Insurers:** The insurance to be maintained by Contractor must be issued by a company licensed or approved by the Insurance Commissioner to transact business in the State of Georgia. Such insurance shall be placed with insurer(s) with an A.M. Best Policyholder’s rating of no less than “A-” and with a financial rate of Class VII or greater. The Contractor shall be responsible for any delay resulting from the failure of its insurer to provide proof of coverage in the proscribed form.
(6) **Verification of Coverage:** Contractor shall furnish to the County for County approval certificates of insurance and endorsements to the policies evidencing all coverage required by this Agreement prior to the start of work. Without limiting the general scope of this requirement, Contractor is specifically required to provide an endorsement naming the County as an additional insured when required. The certificates of insurance and endorsements for each insurance policy are to be on a form utilized by Contractor’s insurer in its normal course of business and are to be signed by a person authorized by that insurer to bind coverage on its behalf, unless alternate sufficient evidence of their validity and incorporation into the policy is provided. The County reserves the right to require complete, certified copies of all required insurance policies at any time. The Contractor shall provide proof that any expiring coverage has been renewed or replaced prior to the expiration of the coverage.

(7) **Subcontractors:** Contractor shall either (1) ensure that its insurance policies (as described herein) cover all subcontractors and the Work performed by such subcontractors or (2) ensure that any subcontractor secures separate policies covering that subcontractor and its Work. All coverage for subcontractors shall be subject to all of the requirements stated in this Agreement, including, but not limited to, naming the Insured Parties as additional insureds.

(8) **Claims-Made Policies:** Contractor shall extend any claims-made insurance policy for at least six (6) years after termination or final payment under the Agreement, whichever is later, and have an effective date which is on or prior to the Effective Date.

(9) **Progress Payments:** The making of progress payments to the Contractor shall not be construed as relieving the Contractor or its subcontractor or insurance carriers from providing the coverage required in this Agreement.

Q. **Bonds.** The Contractor shall provide Performance and Payment Bonds on the forms attached hereto as “Exhibits B.1 and B.2,” each in the penal sum of 100% of the Maximum Contract Price stated in Section 5 above, and with a surety licensed to do business in Georgia and listed on the Treasury Department’s most current list (Circular 570 as amended). Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under this Agreement, the Contractor shall promptly furnish a copy of the bonds or shall permit a copy to be made.
R. **Assignment of Agreement.** The Contractor covenants and agrees not to assign or transfer any interest in, or delegate any duties of this Agreement, without the prior express written consent of the County. As to any approved subcontractors, the Contractor shall be solely responsible for reimbursing them, and the County shall have no obligation to them.

S. **Employment of Unauthorized Aliens Prohibited – E-Verify Affidavit.** Pursuant to O.C.G.A. § 13-10-91, the County shall not enter into a contract for the physical performance of services unless:

1. the Contractor shall provide evidence on County-provided forms, attached hereto as “Exhibits E.1 and E.2” (affidavits regarding compliance with the E-Verify program to be sworn under oath under criminal penalty of false swearing pursuant to O.C.G.A. § 16-10-71), that it and its subcontractors have registered with, are authorized to use and use 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, and that they will continue to use the federal work authorization program throughout the contract period, or

2. the Contractor provides evidence that it is not required to provide an affidavit because it is an *individual* licensed pursuant to Title 26 or Title 43 or by the State Bar of Georgia and is in good standing.

The Contractor hereby verifies that it has, prior to executing this Agreement, executed a notarized affidavit, the form of which is provided in “Exhibit E.1”, and submitted such affidavit to County or provided the County with evidence that it is an individual not required to provide such an affidavit because it is licensed and in good standing as noted in sub-subsection (2) above. Further, Contractor hereby agrees to comply with the requirements of the federal Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603, O.C.G.A. § 13-10-91 and Georgia Department of Labor Rule 300-10-1-.02.

In the event the Contractor employs or contracts with any subcontractor(s) in connection with the covered contract, the Contractor agrees to secure from such subcontractor(s) attestation of the subcontractor’s compliance with O.C.G.A. § 13-10-91 and Rule 300-10-1-.02 by the subcontractor’s execution of the subcontractor affidavit, the form of which is attached hereto as “Exhibit E.2”, which subcontractor affidavit shall become part of the contractor/subcontractor agreement, or evidence that the subcontractor is not required to provide such an affidavit because it is licensed and in good standing as noted in sub-subsection (2) above. If a subcontractor affidavit is obtained, Contractor agrees to provide a completed copy to the County within five (5) business days of receipt from any subcontractor.
Where Contractor is required to provide an affidavit pursuant to O.C.G.A. § 13-10-91, the County Manager or his/her designee shall be authorized to conduct an inspection of the Contractor’s and Contractor’s subcontractors’ verification process at any time to determine that the verification was correct and complete. The Contractor and Contractor’s subcontractors shall retain all documents and records of their respective verification process for a period of five (5) years following completion of the contract. Further, where Contractor is required to provide an affidavit pursuant to O.C.G.A. § 13-10-91, the County Manager or his/her designee shall further be authorized to conduct periodic inspections to ensure that no County Contractor or Contractor’s subcontractors employ unauthorized aliens on County contracts. By entering into a contract with the County, the Contractor and Contractor’s subcontractors agree to cooperate with any such investigation by making their records and personnel available upon reasonable notice for inspection and questioning. Where a Contractor or Contractor’s subcontractors are found to have employed an unauthorized alien, the County Manager or his/her designee may report same to the Department of Homeland Security. The Contractor’s failure to cooperate with the investigation may be sanctioned by termination of the contract, and the Contractor shall be liable for all damages and delays occasioned by the County thereby.

Contractor agrees that the employee-number category designated below is applicable to the Contractor. [Information only required if a contractor affidavit is required pursuant to O.C.G.A. § 13-10-91.]

- 500 or more employees.
- 100 or more employees.
- Fewer than 100 employees.

Contractor hereby agrees that, in the event Contractor employs or contracts with any subcontractor(s) in connection with this Agreement and where the subcontractor is required to provide an affidavit pursuant to O.C.G.A. § 13-10-91, the Contractor will secure from the subcontractor(s) such subcontractor(s’) indication of the above employee-number category that is applicable to the subcontractor.

The above requirements shall be in addition to the requirements of State and federal law and shall be construed to be in conformity with those laws.
T. Records, Reports and Audits.

(1) Records:

(a) Books, records, documents, account ledgers, data bases, and similar materials relating to the Work performed for the County under this Agreement (“Records”) shall be established and maintained by the Contractor in accordance with applicable law and requirements prescribed by the County with respect to all matters covered by this Agreement. Except as otherwise authorized or required, such Records shall be maintained for at least three (3) years from the date that final payment is made to Contractor by County under this Agreement. Furthermore, Records that are the subject of audit findings shall be retained for three (3) years or until such audit findings have been resolved, whichever is later.

(b) All costs claimed or anticipated to be incurred in the performance of this Agreement shall be supported by properly executed payrolls, time records, invoices, contracts, or vouchers, or other official documentation evidencing in proper detail the nature and propriety of the charges. All checks, payrolls, invoices, contracts, vouchers, orders, or other accounting documents pertaining in whole or in part to this Agreement shall be clearly identified and readily accessible.

(2) Reports and Information: Upon request, the Contractor shall furnish to the County any and all Records in the form requested by the County. All Records stored on a computer database must be of a format compatible with the County’s computer systems and software.

(3) Audits and Inspections: At any time during normal business hours and as often as the County may deem necessary, Contractor shall make available to the County or County’s representative(s) for examination all Records. The Contractor will permit the County or County’s representative(s) to audit, examine, and make excerpts or transcripts from such Records. Contractor shall provide proper facilities for County or County’s representative(s) to access and inspect the Records, or, at the request of the County, shall make the Records available for inspection at the County’s office. Further, Contractor shall permit the County or County’s representative(s) to observe and inspect any or all of Contractor’s facilities and activities during normal hours of business for the purpose of evaluating Contractor’s compliance with the terms of this Agreement. In such instances, the County or County’s representative(s) shall not interfere with or disrupt such activities.
U. **Confidentiality.** Contractor acknowledges that it may receive confidential information of the County and that it will protect the confidentiality of any such confidential information and will require any of its subcontractors, contractors, and/or staff to likewise protect such confidential information. The Contractor agrees that confidential information it receives or such reports, information, opinions, or conclusions that Contractor creates under this Agreement shall not be made available to, or discussed with, any individual or organization, including the news media, without prior written approval of the County. Contractor shall exercise reasonable precautions to prevent the unauthorized disclosure and use of County information whether specifically deemed confidential or not.

Contractor acknowledges that the County’s disclosure of documentation is governed by Georgia’s Open Records Act, and Contractor further acknowledges that, if Contractor submits records containing trade secret information and if Contractor wishes to keep such records confidential, Contractor must submit and attach to such records an affidavit affirmatively declaring that specific information in the records constitutes trade secrets pursuant to Article 27 of Chapter 1 of Title 10, and the Parties shall follow the requirements of O.C.G.A. § 50-18-72(a)(34) related thereto.

V. **Licenses, Certifications and Permits.** The Contractor covenants and declares that it has obtained all diplomas, certificates, licenses, permits, or the like required of the Contractor by any and all national, state, regional, county or local boards, agencies, commissions, committees or other regulatory bodies in order to perform the Work contracted for under this Agreement; provided that some permits or licenses related to the Project may be obtained as part of the Work and shall be obtained as required. The Contractor shall secure and pay for the building permit and other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work, which are customarily secured after execution of the Agreement and which are legally required. Contractor shall furnish copies of such permits, licenses, etc. to the County within ten (10) days after issuance.

W. **Key Personnel.** All of the individuals identified in “Exhibit H”, attached hereto, are necessary for the successful completion of the Work due to their unique expertise and depth and breadth of experience. There shall be no change in Contractor’s Project Manager or members of the Project team, as listed in “Exhibit H”, without written approval of the County. Contractor recognizes that the composition of this team was instrumental in the County’s decision to award the Work to Contractor and that compelling reasons for substituting these individuals must be demonstrated for the County’s consent to be granted. Any substitutes shall be persons of comparable or superior expertise and experience. Failure to comply with the provisions of this paragraph shall constitute a material breach of
Contractor’s obligations under this Agreement and shall be grounds for termination.

X. **Authority to Contract.** The Contractor covenants and declares that it has obtained all necessary approvals of its board of directors, stockholders, general partners, limited partners, or similar authorities to simultaneously execute and bind Contractor to the terms of this Agreement, if applicable.

Y. **Ownership of Work.** All reports, designs, drawings, plans, specifications, schedules, work product, and other materials, including those in electronic form, prepared or in the process of being prepared for the Work to be performed by the Contractor (“Materials”) shall be the property of the County, and the County shall be entitled to full access and copies of all Materials in the form prescribed by the County. Any Materials remaining in the hands of the Contractor or subcontractor upon completion or termination of the Work shall be delivered immediately to the County whether or not the Project or Work is commenced or completed, provided, however, that Contractor may retain a copy of any deliverables for its records. The Contractor assumes all risk of loss, damage or destruction of or to Materials. If any Materials are lost, damaged, or destroyed before final delivery to the County, the Contractor shall replace them at its own expense. Any and all copyrightable subject matter in all Materials is hereby assigned to the County, and the Contractor agrees to execute any additional documents that may be necessary to evidence such assignment.

Z. **Nondiscrimination.** In accordance with Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and all other provisions of Federal law, the Contractor agrees that, during performance of this Agreement, Contractor, for itself, its assignees and successors in interest, will not discriminate against any employee or applicant for employment, any subcontractor, or any supplier because of race, color, creed, national origin, gender, age or disability. In addition, Contractor agrees to comply with all applicable implementing regulations and shall include the provisions of this paragraph in every subcontract for services contemplated under this Agreement.

**Section 8. Covenants of the County**

A. **Right of Entry.** County shall provide for right of entry for Contractor and Contractor’s equipment as required for Contractor to complete the Work; provided that Contractor shall not unreasonably encumber the Project site(s) with materials or equipment.
Section 9. Final Project Documents; Warranty

A. Final Project Documents. Prior to final payment, Contractor shall deliver to County a written assignment of all warranties, guaranties, certificates, permits, and other documents, including without limitation, all contractors’ and manufacturers’ warranties. At such time, Contractor shall also deliver to the County copies of all as-built drawings, operations, and maintenance manuals, and any other pertinent documents relating to the construction and operation of the Work that is not otherwise in the possession of the County.

B. Warranty. The Contractor warrants to the County and the Contract Administrator that materials and equipment furnished under the Agreement will be of good quality and new, unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, is considered defective. This warranty excludes remedy for damage or defect caused by abuse by the County or modifications to the Work not executed by the Contractor or an employee/subcontractor/sub-subcontractor thereof.

Except as may be otherwise specified or agreed, the Contractor shall repair or replace all defects in materials, equipment, or workmanship appearing within ______ year(s) (the “Warranty Period”) from the date of Final Completion (as defined in “Exhibit G”, attached hereto and incorporated herein by reference) at no additional cost to the County. Further, Contractor shall provide all maintenance services, including parts and labor, for ______ year(s) (the “Maintenance Period”) from the date of Final Completion at no additional cost to the County. An inspection shall be conducted by the County or its representative(s) near the completion of the respective Warranty Period/Maintenance Period to identify any issues that must be resolved by the Contractor. After the expiration of the Maintenance Period, County shall be responsible for repairing issues resulting from normal wear and tear and shall be responsible for general maintenance of the equipment; however, expiration of any Warranty Period or Maintenance Period shall not affect the Contractor’s continued liability under an implied warranty of merchantability and fitness. All warranties implied by law, including fitness for a particular purpose and suitability, are hereby preserved and shall apply in full force and effect beyond any Warranty Period or Maintenance Period. County may purchase additional maintenance.
services from the Contractor upon a written bid for such services being executed by authorized representatives of both Parties, and upon execution, such bid for additional services shall be incorporated herein by this reference.

Section 10. Termination

A. For Convenience. The County may terminate this Agreement for convenience at any time upon providing written notice thereof to Contractor at least seven (7) calendar days in advance of the termination date.

B. For Cause. The Contractor shall have no right to terminate this Agreement prior to completion of the Work, except in the event of County’s failure to pay the Contractor within thirty (30) calendar days of Contractor providing the County with notice of a delinquent payment and an opportunity to cure. The County may terminate this Agreement for cause as provided in Section 11 of this Agreement. The County shall give Contractor at least seven (7) calendar days’ written notice of its intent to terminate the Agreement for cause and the reasons therefor, and if Contractor, or its Surety, fails to cure the default within that period, the termination shall take place without further notice. The County shall then make alternative arrangements for completion of the Project.

C. Statutory Termination. In compliance with O.C.G.A. § 36-60-13, this Agreement shall be deemed terminated as provided in Section 4(A) of this Agreement. Further, this Agreement shall terminate immediately and absolutely at such time as appropriated or otherwise unobligated funds are no longer available to satisfy the obligation of the County.

D. Payment. Provided that no damages are due to the County for Contractor’s failure to perform in accordance with this Agreement, and except as otherwise provided herein, the County shall, upon termination for convenience or statutory termination, pay Contractor for Work performed prior to the date of termination in accordance with Section 5 herein. The County shall have no further liability to Contractor for such termination. At its sole discretion, the County may pay Contractor for additional value received as a result of Contractor’s efforts, but in no case shall said payment exceed any remaining unpaid portion of the Maximum Contract Price.

If this Agreement is terminated for cause, the County will make no further payment to the Contractor or its Surety until the Project is completed and all costs of completing the Project are paid. If the unpaid balance of the amount due the Contractor, according to this Agreement, exceeds the cost of finishing the Project, County shall provide payment to the Contractor (or its Surety) for services rendered and expenses incurred prior to the termination date, provided that such payment shall not exceed the unpaid balance of the amount otherwise payable.
under this Agreement minus the cost of completing the Project. If the costs of completing the Project exceed the unpaid balance, the Contractor or its Surety shall pay the difference to the County.

E. **Assumption of Contracts.** The County reserves the right in termination for cause to take assignment of all contracts between the Contractor and its subcontractors, vendors, and suppliers. The County will promptly notify the Contractor of the contracts the County elects to assume. Upon receipt of such notice, the Contractor shall promptly take all steps necessary to effect such assignment.

F. **Conversion to Termination for Convenience.** If the County terminates this Agreement for cause and it is later determined that the County did not have grounds to do so, the termination will be converted to and treated as a termination for convenience under the terms of Section 10(A) above.

G. **Requirements Upon Termination.** Upon termination, the Contractor shall: (1) promptly discontinue all services, cancel as many outstanding obligations as possible if requested to do so by the County, and not incur any new obligations, unless the County directs otherwise; and (2) promptly deliver to the County all data, drawings, reports, summaries, and such other information and materials as may have been generated or used by the Contractor in performing this Agreement, whether completed or in process, in the form specified by the County.

H. **Reservation of Rights and Remedies.** The rights and remedies of the County and the Contractor provided in this Section are in addition to any other rights and remedies provided under this Agreement or at law or in equity.

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**Section 11. County’s Rights; Contractor Default**

A. **County Rights Related to the Work.**

(i) **County’s Right to Stop the Work.** If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents, as required by the Contract Administrator, or persistently fails to carry out Work in accordance with the Contract Documents, the County may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the County to stop the Work shall not give rise to a duty on the part of the County to exercise this right for the benefit of the Contractor or any other person or entity. Such a stoppage of Work shall not extend the Expected Date of Final Completion of the Work.
(ii) **County’s Right to Carry Out the Work.** If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven (7) calendar day period after receipt of written notice from the County to commence and/or continue correction of such default or neglect with diligence and promptness, the County may, without prejudice to other remedies the County may have, correct such deficiencies. In such case, an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including County’s expenses and compensation for the Architect/Engineer’s and/or Contract Administrator’s additional services (if any) made necessary by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the County.

B. **Contractor Default.** For the purposes of this Agreement, Contractor shall be in default if any of the following occur during the Term of this Agreement: (a) a failure to fulfill in a timely and proper manner Contractor’s obligations under this Agreement; (b) Contractor violates any of the material provisions, agreements, representations or covenants of this Agreement or any applicable city, state, or federal laws, which do not fall within the force majeure provisions of this Agreement; (c) the Contractor becomes insolvent or unable to pay its debts as they mature, or makes an assignment for the benefit of creditors, or files a bankruptcy petition under the United States Bankruptcy Code; or (d) Contractor is the subject of a judgment or order for payment of money, which judgment or order exceeds $100,000 and is no longer subject to appeal or, in the opinion of the County, would be fruitless to appeal and where (i) such judgment or order shall continue un-discharged or unpaid for a period of thirty (30) calendar days, (ii) an insurer acceptable to the County has not acknowledged that such judgment or order is fully covered by a relevant policy of insurance, or (iii) the County is otherwise reasonably satisfied that such judgment or order is not likely to be satisfied or complied with within sixty (60) calendar days of its issuance.

In the event of Contractor’s default under this Agreement, the County shall send written notice to the Contractor setting forth the specific instances of the default and providing the Contractor with at least seven (7) calendar days to cure or otherwise remedy the default to the reasonable satisfaction of the County. If the default is not remedied during the stated cure period, then the County may, at its election: (a) in writing terminate the Agreement in whole or in part; (b) cure such default itself and charge the Contractor for the costs of curing the default against any sums due or which become due to the Contractor under this Agreement; and/or (c) pursue any other remedy then available, at law or in equity, to the County for such default.
Section 12. **Construction Administration**

If a Contract Administrator other than the County has been hired in relation to the Project, the Contract Administrator’s administration of the construction of the Project shall be as described in “Exhibit I”, attached hereto. The Contractor agrees to the construction administration provisions contained in “Exhibit I.”

Section 13. **Miscellaneous**

A. **Complete Agreement.** This Agreement, including all of the Contract Documents, constitutes the complete agreement between the Parties and supersedes any and all other agreements, either oral or in writing, between the Parties with respect to the subject matter of this Agreement. No other agreement, statement, or promise relating to the subject matter of this Agreement not contained in this Agreement or the Contract Documents shall be valid or binding. This Agreement may be modified or amended only by a written document signed by representatives of both Parties with appropriate authorization.

B. **Governing Law.** This Agreement shall be governed by and construed in accordance with the laws of the State of Georgia without regard to choice of law principles. If any action at law or in equity is brought to enforce or interpret the provisions of this Agreement, the rules, regulations, statutes and laws of the State of Georgia will control. Any action or suit related to this Agreement shall be brought in the Superior Court of Barrow County, Georgia or the U.S. District Court for the Northern District of Georgia – Gainesville Division, and Contractor submits to the jurisdiction and venue of such court.

C. **Counterparts.** This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original, but all of which together shall constitute one and the same instrument.

D. **Invalidity of Provisions; Severability.** Should any article(s) or section(s) of this Agreement, or any part thereof, later be deemed illegal, invalid or unenforceable by a court of competent jurisdiction, the offending portion of the Agreement should be severed, and the remainder of this Agreement shall remain in full force and effect to the extent possible as if this Agreement had been executed with the invalid portion hereof eliminated, it being the intention of the Parties that they would have executed the remaining portion of this Agreement without including any such part, parts, or portions that may for any reason be hereafter declared invalid.
E. **Business License.** Prior to commencement of the Work to be provided hereunder, Contractor shall apply to the County for a business license, pay the applicable business license fee, and maintain said business license during the Term of this Agreement, unless Contractor provides evidence that no such license is required.

F. **Notices.**

1. **Communications Relating to Day-to-Day Activities.**

   All communications relating to the day-to-day activities of the Work shall be exchanged between _________________ for the County and _________________ for the Contractor.

2. **Official Notices.**

   All other notices, requests, demands, writings, or correspondence, as required by this Agreement, shall be in writing and shall be deemed received, and shall be effective, when (1) personally delivered, or (2) on the third calendar day after the postmark date when mailed by certified mail, postage prepaid, return receipt requested, or (3) upon actual delivery when sent via national overnight commercial carrier to the Party at the addresses given below, or at a substitute address previously furnished to the other Party by written notice in accordance herewith:

   **NOTICE TO COUNTY** shall be sent to:

   Barrow County  
   County Manager  
   Barrow County Historic Courthouse  
   30 N. Broad Street  
   Winder, GA 30680

   **NOTICE TO CONTRACTOR** shall be sent to:

   __________________
   __________________
   __________________

G. **Waiver of Agreement.** No failure by the County to enforce any right or power granted under this Agreement, or to insist upon strict compliance by Contractor with this Agreement, and no custom or practice of the County at variance with the terms and conditions of this Agreement shall constitute a general waiver of any future breach or default or affect the County’s right to demand exact and strict compliance by Contractor with the terms and conditions of this Agreement.
Further, no express waiver shall affect any term or condition other than the one specified in such waiver, and that one only for the time and manner specifically stated.

H. **Survival.** All sections of this Agreement which by their nature should survive termination will survive termination, including, without limitation, confidentiality obligations, warranties, and insurance maintenance requirements.

I. **Sovereign Immunity.** Nothing contained in this Agreement shall be construed to be a waiver of the County’s sovereign immunity or any individual’s qualified good faith or official immunities.

J. **No Personal Liability.** Nothing herein shall be construed as creating any individual or personal liability on the part of any of County’s elected or appointed officials, officers, boards, commissions, employees, representatives, consultants, servants, agents, attorneys or volunteers. No such individual shall be personally liable to the Contractor or any successor in interest in the event of any default or breach by the County or for any amount which may become due to the Contractor or successor or on any obligation under the terms of this Agreement. Likewise, Contractor’s performance of services under this Agreement shall not subject Contractor’s individual employees, officers, or directors to any personal liability, except where Contractor is a sole proprietor. The Parties agree that their sole and exclusive remedy, claim, demand, or suit shall be directed and/or asserted only against Contractor or the County, respectively, and not against any elected or appointed official, officers, boards, commissions, employees, representatives, consultants, servants, agents, attorneys and volunteers.

K. **Force Majeure.** Neither the County nor Contractor shall be liable for their respective non-negligent or non-willful failure to perform or shall be deemed in default with respect to the failure to perform (or cure a failure to perform) any of their respective duties or obligations under this Agreement or for any delay in such performance due to: (i) any cause beyond their respective reasonable control; (ii) any act of God; (iii) any change in applicable governmental rules or regulations rendering the performance of any portion of this Agreement legally impossible; (iv) earthquake, fire, explosion, or flood; (v) strike or labor dispute, excluding strikes or labor disputes by employees and/or agents of Contractor; (vi) delay or failure to act by any governmental or military authority; or (vii) any war, hostility, embargo, sabotage, civil disturbance, riot, insurrection, or invasion. In such event, the time for performance shall be extended by an amount of time equal to the period of delay caused by such acts, and all other obligations shall remain intact.

L. **Headings.** All headings herein are intended for convenience and ease of reference purposes only and in no way define, limit, or describe the scope or intent thereof, or of this Agreement, or in any way affect this Agreement.
M. **No Third-Party Rights.** This Agreement shall be exclusively for the benefit of the Parties and shall not provide any third parties with any remedy, claim, liability, reimbursement, cause of action or other right.

N. **Successors and Assigns.** Subject to the provision of this Agreement regarding assignment, each Party binds itself, its partners, successors, assigns, and legal representatives to the other Party hereto, its partners, successors, assigns, and legal representatives with respect to all covenants, agreements, and obligations contained in the Contract Documents.

O. **Agreement Construction and Interpretation.** Contractor represents that it has reviewed and become familiar with this Agreement. The Parties hereto agree that, if an ambiguity or question of intent or interpretation arises, this Agreement is to be construed as if the Parties had drafted it jointly, as opposed to being construed against a Party because it was responsible for drafting one or more provisions of the Agreement. In the interest of brevity, the Contract Documents may omit modifying words such as “all” and “any” and articles such as “the” and “an,” but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

P. **Material Condition.** Each term of this Agreement is material, and Contractor’s breach of any term of this Agreement shall be considered a material breach of the entire Agreement and shall be grounds for termination or exercise of any other remedies available to the County at law or in equity.

Q. **Use of Singular and Plural.** Words or terms used as nouns in the Agreement shall be inclusive of their singular and plural forms, unless the context of their usage clearly requires contrary meaning.

[SIGNATURES ON FOLLOWING PAGE]
IN WITNESS WHEREOF, the County and the Contractor have executed this Agreement effective as of the Effective Date first above written.

CONTRACTOR: _______________________________

By: ________________________________________

Print Name: _________________________________

Its: [CORPORATE SEAL] (required if corporation)

Attest/Witness:

____________________________________________

Print Name: ___________________________________

Its:          ______________________________________

((Assistant) Corporate Secretary if corporation)

BARROW COUNTY, GEORGIA

By: ___________________________________

_____________________________, Chairman

[COUNTY SEAL]

Attest:

____________________________________

Print Name:__________________________

Its: County Clerk
“EXHIBIT A”

BID DOCUMENTS FROM CONTRACTOR
“EXHIBITS B.1 AND B.2”

PAYMENT AND PERFORMANCE BONDS
PERFORMANCE BOND
BARROW COUNTY

KNOW ALL MEN BY THESE PRESENTS THAT ______________________ (as CONTRACTOR, hereinafter referred to as the “Principal”), and _____________________ (as SURETY COMPANY, hereinafter referred to as the “CONTRACTOR’S SURETY”), are held and firmly bound unto Barrow County, Georgia (as OWNER, hereinafter referred to as the “County”), for the use and benefit of the County, in the sum of ____________________________________________ Dollars ($________.__), lawful money of the United States of America, for the payment of which the Principal and the Contractor’s Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered, or is about to enter, into a certain written agreement with the County for the construction of a project known as RFB2019-17 CARL-BETHLEHEM ROAD 24-INCH WATER TRANSMISSION MAIN RELOCATION (hereinafter referred to as “the PROJECT”), which agreement is incorporated herein by reference in its entirety (hereinafter referred to as the “CONTRACT”).

NOW THEREFORE, the conditions of this obligation are as follows:

1. That if the Principal shall fully and completely perform each and all of the terms, provisions and requirements of the Contract, including and during the period of any warranties or guarantees required thereunder, and all modifications, amendments, changes, deletions, additions, and alterations thereto that may hereafter be made, and if the Principal and the Contractor’s Surety shall indemnify and hold harmless the County
from any and all losses, liability and damages, claims, judgments, liens, costs and fees of
every description, including but not limited to, any damages for delay, which the County
may incur, sustain or suffer by reason of the failure or default on the part of the Principal
in the performance of any and all of the terms, provisions, and requirements of the
Contract, including all modifications, amendments, changes, deletions, additions, and
alterations thereto, and any warranties or guarantees required thereunder, then this
obligation shall be void; otherwise to remain in full force and effect;

2. In the event of a failure of performance of the Contract by the Principal, which shall
include, but not be limited to, any breach or default of the Contract:

a. The Contractor’s Surety shall commence performance of its obligations and
undertakings under this Bond no later than thirty (30) calendar days after written
notice from the County to the Contractor’s Surety; and

b. The means, method or procedure by which the Contractor’s Surety undertakes to
perform its obligations under this Bond shall be subject to the advance written
approval of the County.

The Contractor’s Surety hereby waives notice of any and all modifications, omissions,
additions, changes, and advance payments or deferred payments in or about the Contract, and
agrees that the obligations undertaken by this Bond shall not be impaired in any manner by
reason of any such modifications, omissions, additions, changes, and advance payments or
deferred payments.

The Parties further expressly agree that any action on this Bond may be brought within
the time allowed by Georgia law for suit on contracts under seal.
IN WITNESS WHEREOF, the Principal and Contractor’s Surety have hereunto affixed their corporate seals and caused this obligation to be signed by their duly authorized officers or attorneys-in-fact, as set forth below.

CONTRACTOR (“Principal”):

________________________________________
By: __________________________ (signature)

__________________________ (print)
Title: ___________________________ (SEAL)

Attest:  
_____________ (signature)  
_____________ (print)
Title: ______________
Date: ______________

CONTRACTOR’S SURETY:

_______________________________________
By: __________________________ (signature)

__________________________ (print)
Title: __________________________ (SEAL)

Date: __________________________

Attest:
_____________ (signature)  
_____________ (print)
Title: ______________
Date: ______________

(ATTACH SURETY’S POWER OF ATTORNEY)
PAYMENT BOND

BARROW COUNTY

KNOW ALL MEN BY THESE PRESENTS THAT ___________________________ (as CONTRACTOR, hereinafter referred to as the “Principal”), and ______________________ (as SURETY COMPANY, hereinafter referred to as the “CONTRACTOR’S SURETY”), are held and firmly bound unto Barrow County, Georgia (as OWNER, hereinafter referred to as the “County”), for the use and benefit of any “Claimant,” as hereinafter defined, in the sum of ________________________________________________ Dollars ($_______.__), lawful money of the United States of America, for the payment of which the Principal and the Contractor’s Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered, or is about to enter, into a certain written agreement with the County for the construction of a project known as RFB2019-17 CARL-BETHLEHEM ROAD 24-INCH WATER TRANSMISSION MAIN RELOCATION (hereinafter referred to as “the PROJECT”), which agreement is incorporated herein by reference in its entirety (hereinafter referred to as the “CONTRACT”).

NOW THEREFORE, the condition of this obligation is such that if the Principal shall promptly make payment to any Claimant, as hereinafter defined, for all labor, services, and materials used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise to remain in full force and effect.
A “Claimant” shall be defined herein as any Subcontractor, person, Party, partnership, corporation, or other entity furnishing labor, services, or materials used or reasonably required for use in the performance of the Contract, without regard to whether such labor, services, or materials were sold, leased, or rented, and without regard to whether such Claimant is or is not in privity of the Contract with the Principal or any Subcontractor performing Work on the Project.

In the event of any claim made by the Claimant against the County, or the filing of a Lien against the property of the County affected by the Contract, the Contractor’s Surety shall either settle or resolve the Claim and shall remove any such Lien by bond or otherwise as provided in the Contract.

The Parties further expressly agree that any action on this Bond may be brought within the time allowed by Georgia law for suit on contracts under seal.
IN WITNESS WHEREOF, the Principal and Contractor’s Surety have hereunto affixed their corporate seals and caused this obligation to be signed by their duly authorized officers, as set forth below.

CONTRACTOR:

________________________________________
By: __________________________ (signature)
    __________________________ (printed)
Title: __________________________ (SEAL)
Date: __________________________

Attest:
________________________ (signature)
________________________ (printed)
Title: _________________
Date: _________________

CONTRACTOR’S SURETY:

________________________________________
By: __________________________ (signature)
    __________________________ (printed)
Title: __________________________ (SEAL)
Date: __________________________

Attest:
________________________ (signature)
________________________ (printed)
Title: _________________
Date: _________________

(ATTACH SURETY’S POWER OF ATTORNEY)
STATE OF ____________________
COUNTY OF ____________________

__________________________________________, being first duly sworn, deposes and says that:

(1) He is ___________________________(Owner, Partner, Officer, Representative, or Agent) of ___________________________ (the “Bidder”) that has submitted the attached Bid;

(2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

(3) Such Bid is genuine and is not a collusive of sham Bid;

(4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, included in this affidavit, 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 of any other Bidder or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against Barrow County or any person interested in the proposed Contract; and,

(5) 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.

(6) Bidder has not directly or indirectly violated any law, ordinance or regulation related to the Bid.

_________________________________________  SUBSCRIBED AND SWORN BEFORE ME ON THIS THE _______ DAY OF ___________,
                                                                                                         20__.

___________________________________________________________________
Notary Public

[NOTARY SEAL]

My Commission Expires: __________________________
STATE OF __________________
COUNTY OF ________________

TO BARROW COUNTY, GEORGIA

I, _______________________________, hereby certify that all suppliers of materials, equipment and service, subcontractors, mechanics, and laborers employed by ______________________ or any of its subcontractors in connection with the construction of ______________________ for Barrow County, Georgia have been paid and satisfied in full as of ______________, 20____, and that there are no outstanding obligations or claims of any kind for the payment of which Barrow County, Georgia on the above named project might be liable, or subject to, in any lawful proceeding at law or in equity.

______________________________
Signature

______________________________
Title

Personally appeared before me this ____ day of ________, 20____. _______________________, who under oath deposes and says that he is ________________________________ of the firm of ________________________________, that he has read the above statement, and that to the best of his knowledge and belief same is an exact true statement.

______________________________
Notary Public

[NOTARY SEAL]

My Commission Expires
“EXHIBIT E.1”

CONTRACTOR AFFIDAVIT AND AGREEMENT

STATE OF ________________
COUNTY OF ________________

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 Barrow County 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

Barrow County, Georgia
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
[NOTARY SEAL]

My Commission Expires:
STATE OF ___________________
COUNTY OF _______________

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 _______________________ (name of contractor) on behalf of Barrow County 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 (5) 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 (5) 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

_________________________________
Barrow County, Georgia
Name of Public Employer

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

Executed on ______ ____, 201__ 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
______________, 201__.

_________________________________
NOTARY PUBLIC

[NOTARY SEAL]

My Commission Expires:

_________________________________
“EXHIBIT F”

PLANS, DRAWINGS AND SPECIFICATIONS

Plans, drawings and specifications (a true and correct copy of which has been provided to Contractor as included in the RFP maintained on file with the County Purchasing Department), with any modifications (if issued), attached hereto as “Exhibit F”.
“EXHIBIT G”

ADDITIONAL PAYMENT TERMS

A. Defined Terms. Terms used in this Agreement shall have their ordinary meaning, unless otherwise defined below or elsewhere in the Contract Documents.

(i) “Substantial Completion” means when the Work or designated portion thereof is complete in accordance with the Contract Documents so that any remaining Work includes only (1) Minor Items that can be completed or corrected within the following thirty (30) calendar days, (2) Permitted Incomplete Work that will be completed by the date agreed upon by the Parties, and (3) any Warranty Work. Substantial Completion shall require complete operation of all applicable building systems including, but not limited to, mechanical, electrical, plumbing, fire protection, fire alarm, telecom, data, security, elevators, life safety, and accessibility (if any).

(ii) “Minor Item” means a portion or element of the Work that can be totally complete within thirty (30) calendar days.

(iii) “Permitted Incomplete Work” means Work that is incomplete through no fault of the Contractor, as determined by the County in its sole discretion.

(iv) “Final Completion” means when the Work has been completed in accordance with terms and conditions of the Contract Documents.

B. Payment for Work Completed and Costs Incurred. County agrees to pay the Contractor for the Work performed and costs incurred by Contractor upon certification by the Contract Administrator and the County that the Work was actually performed and costs actually incurred in accordance with this Agreement. Payment shall be based on the value of the Work completed, as provided in the Contract Documents, plus the value of materials and equipment suitably stored, insured, and protected at the construction site, and, only if approved in writing by the County (which approval shall be given at the sole discretion of the County), such materials and equipment suitably stored, insured, and protected off site at a location approved by the County in writing, less retainage (as described below). Compensation for Work performed and reimbursement for costs incurred shall be paid to the Contractor upon receipt and approval by the County of invoices setting forth in detail the Work performed and costs incurred, along with all supporting documents required by the Contract Documents or requested by the County to process the invoice. Invoices shall be submitted on a monthly basis, and such invoices shall reflect costs incurred versus costs budgeted. Each invoice shall be accompanied by an Interim Waiver and Release upon Payment (or a Waiver and Release upon final payment in the case of the invoice for final payment) procured by the Contractor from all subcontractors in accordance with O.C.G.A. § 44-14-366.
The County shall pay the Contractor within thirty (30) calendar days after approval of the invoice by County staff, less any retainage as described in Section D below. No payments will be made for unauthorized work. Payment will be sent to the designated address by U. S. Mail only; payment will not be hand-delivered, though the Contractor may arrange to pick up payments directly from the County or may make written requests for the County to deliver payments to the Contractor by Federal Express delivery at the Contractor’s expense.

C. Evaluation of Payment Requests. The Contract Administrator will evaluate the Contractor’s applications for payment and will either issue to the County a Certificate for Payment (with a copy of the Contractor’s application for payment) for such amount as the Contract Administrator determines is properly due, or notify the Contractor and County in writing of the Contract Administrator’s reasons for withholding certification in whole or in part. The Contract Administrator may reject Work that does not conform to the Contract Documents and may withhold a Certificate of Payment in whole or in part, to the extent reasonably necessary to protect the County. When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

Even following a Certificate of Payment, the County shall have the right to refuse payment of any invoice or part thereof that is not properly supported, or where requests for payment for Work or costs are in excess of the actual Work performed or costs incurred, or where the Work product provided is unacceptable or not in conformity with the Contract Documents, as determined by the County in its sole discretion. The County shall pay each such invoice or portion thereof as approved, provided that neither the approval or payment of any such invoice, nor partial or entire use or occupancy of the Project by the County, shall be considered to be evidence of performance by the Contractor to the point indicated by such invoice, or of receipt or acceptance by the County of Work covered by such invoice, where such work is not in accordance with the Contract Documents.

D. Final Payment and Retainage. The County and Contractor shall comply with the provisions of O.C.G.A. § 13-10-80. The Contractor through each invoice may request payment of no more than ninety percent (90%) of that portion of the Work completed during the term covered by such invoice until fifty percent (50%) of the Maximum Contract Price, as may be adjusted, is due and the manner of completion of the Work and its progress are reasonably satisfactory to the County. Payment for the remaining ten percent (10%) of Work completed and covered by such invoices shall be retained by the County until Substantial Completion. Once fifty percent (50%) of the Maximum Contract Price, as may be adjusted, is due and the manner of completion of the Work and its progress are reasonably satisfactory to the County, no additional retainage shall be withheld, except as provided below. All amounts retained by the County shall be held as a lump sum until Substantial Completion of the Work, regardless of earlier completion of individual component(s) of the Work; provided, however, that, at the discretion of the
If, after discontinuing the retention, the County determines that the Work is unsatisfactory or has fallen behind schedule, retention may be resumed at the previous level. If retention is resumed by the County, the Contractor and subcontractors shall be entitled to resume withholding retainage accordingly. At Substantial Completion of the Work and as the Contract Administrator determines the Work to be reasonably satisfactory, the County shall, within thirty (30) days after the invoice and other appropriate documentation as may be required by the Contract Documents are provided to the County, pay the retainage to the Contractor. If at that time there are any remaining incomplete Minor Items or Permitted Incomplete Work, an amount equal to 200 percent of the value of each Minor Item or Permitted Incomplete Work, as determined by the Contract Administrator in its sole discretion, shall be withheld until such item, items or work are completed. The reduced retainage shall be shared by the Contractor and subcontractors as their interests may appear.

The Contractor shall, within ten (10) days from its receipt of retainage from the County, pass through payments to subcontractors and shall reduce each subcontractor’s retainage in the same manner as the Contractor’s retainage is reduced by the County; provided, however, that the value of each subcontractor’s work complete and in place equals fifty percent (50%) of his or her subcontract value, including approved Change Orders and other additions to the subcontract value; provided, further, that the work of the subcontractor is proceeding satisfactorily and the subcontractor has provided or provides such satisfactory reasonable assurances of continued performance and financial responsibility to complete his or her work including any warranty work as the Contractor in his or her reasonable discretion may require, including, but not limited to, a payment and performance bond. The subcontractor shall, within ten (10) days from the subcontractor’s receipt of retainage from the Contractor, pass through payments to lower tier subcontractors and shall reduce each lower tier subcontractor’s retainage in the same manner as the subcontractor’s retainage is reduced by the Contractor; provided, however, that the value of each lower tier subcontractor’s work complete and in place equals fifty percent (50%) of his or her subcontract value, including approved Change Orders and other additions to the subcontract value; provided, further, that the work of the lower tier subcontractor is proceeding satisfactorily and the lower tier subcontractor has provided or provides such satisfactory reasonable assurances of continued performance and financial responsibility to complete his or her work including any warranty work as the subcontractor in his or her reasonable discretion may require, including, but not limited to, a payment and performance bond.

Final payment of any retained amounts to the Contractor shall be made after certification by the Contract Administrator that the Work has been satisfactorily completed and is accepted in accordance with the Agreement and Contract Documents.
Neither final payment nor any remaining retainage shall become due until the Contractor submits to the Contract Administrator (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the County or County property might be responsible or encumbered (less amounts withheld by County) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance, required by the Contract Documents to remain in force after final payment, is currently in effect and will not be canceled or allowed to expire until at least thirty (30) calendar days prior written notice has been given to the County; (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) a release or waiver of liens, claims, security interests, and encumbrances by all subcontractors and material suppliers, and (6), if required by the County, other data establishing payment or satisfaction of obligations, such as receipts, to the extent and in such form as may be designated by the County. If a subcontractor or material supplier refuses to furnish a release or waiver as required by the County, the Contractor may furnish a bond satisfactory to the County to indemnify the County against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the County all money that the County may be compelled to pay in discharging such lien, including all costs and reasonable attorneys’ fees.

Acceptance of final payment by the Contractor, a subcontractor or material supplier shall constitute a waiver of claims by that payee, except those claims previously made in writing and identified by that payee as unsettled at the time of final application for payment.


**KEY PERSONNEL**

The following individuals are designated as Key Personnel under this Agreement and, as such, are necessary for the successful prosecution of the Work:

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<th>Position</th>
</tr>
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<td></td>
<td>__________, Project Manager</td>
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“EXHIBIT I”

CONTRACT ADMINISTRATION PROVISIONS

(if issued)
Please refer to the Project Manual, Specifications and Scope of Work attached hereto or otherwise incorporated herein.
“EXHIBIT K”

SUPPLEMENTARY CONDITIONS

(Not Applicable to this Agreement)
“EXHIBIT L”

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ARTICLE 1--DEFINITIONS
Wherever used in these General Conditions or in the other Contract Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

Addenda - Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the bidding documents or the Contract Documents.

Agreement (Also known as Contract) - The written agreement between OWNER and CONTRACTOR covering the WORK to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

Application for Payment - The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

Bid - The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the WORK to be performed.

Bonds - Bid, performance and payment bonds and other instruments of security.

Change Order - A document recommended by ENGINEER, which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion or revision in the WORK, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.

Contract Documents - The Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR'S Bid (including documentation accompanying the Bid and any post-Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all amendments, modifications and supplements issued pursuant to paragraphs 3.4 and 3.5 on or after the Effective Date of the Agreement.

Contract Price - The moneys payable by OWNER to CONTRACTOR under the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.9.1 in the case of Unit Price WORK).

Contract Time - The number of days (computed as provided in paragraph 17.2) or the date stated in the Agreement for the completion of the WORK.

CONTRACTOR - The person, firm or corporation with whom OWNER has entered into the Agreement.

Defective - An adjective which when modifying the word WORK refers to WORK that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER'S recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.8 or 14.10).

Drawings - The drawings which show the character and scope of the WORK to be performed and which have been prepared or approved by ENGINEER and are referred to in the Contract Documents.

Effective Date of the Agreement - The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
ENGINEER - The person, firm or corporation named as such in the Agreement.

Field Order - A written order issued by ENGINEER which orders minor changes in the WORK in accordance with paragraph 9.5 but which does not involve a change in the Contract Price or the Contract Time.

* General Requirements - Sections of Division I of the Specifications.

Laws and Regulations: Laws or Regulations - Laws, rules, regulations, ordinances, codes and/or orders.

Notice of Award - The written notice by OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

Notice to Proceed - A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR'S obligations under the Contract Documents.

OWNER - The public body or authority, corporation, association, firm or person with whom CONTRACTOR has entered into the Agreement and for whom the WORK is to be provided.

Partial Utilization - Placing a portion of the WORK in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion for all the WORK.

Project - The total construction of which the WORK to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

Resident Project Representative - The authorized representative of ENGINEER who is assigned to the site or any part thereof.

Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of the WORK and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by CONTRACTOR to illustrate material or equipment for some portion of the WORK.

Specifications - Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the WORK and certain administrative details applicable thereto.

Subcontractor - An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the WORK at the site.

Substantial Completion - The WORK (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER as evidenced by ENGINEER’S definitive certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the WORK (or specified part) can be utilized for the purposes for which it is intended; or if there be no such certificate issued, when final payment is due in accordance with paragraph 14.13. The terms "substantially complete" and "substantially completed" as applied to any WORK refer to Substantial Completion thereof. Supplementary Conditions - The part of the Contract Documents which amends or supplements these General Conditions.

Supplier - A manufacturer, fabricator, supplier, distributor, materialman or vendor.
Underground Facilities - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

Unit Price WORK - WORK to be paid for on the basis of unit prices.

WORK - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. WORK is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

WORK Directive Change - A written directive to CONTRACTOR, issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER, ordering an addition, deletion or revision in the WORK, or responding to differing or unforeseen physical conditions under which the WORK is to be performed as provided in paragraph 4.2 or 4.3 or to emergencies under paragraph 6.22. A WORK Directive Change may not change the Contract Price or the Contract Time, but is evidence that the parties expect that the change directed or documented by a WORK Directive Change will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Time as provided in paragraph 10.2.

Written Amendment - A written amendment of the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the non-engineering or nontechnical rather than strictly work-related aspects of the Contract Documents.

ARTICLE 2 - PRELIMINARY MATTERS

Delivery of Bonds:

2.1 CONTRACTOR shall deliver to OWNER required Bonds in accordance with paragraph 5.1.

Copies of Documents:

2.2 ENGINEER shall furnish to CONTRACTOR up to six copies (unless otherwise specified in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the WORK. Additional copies will be furnished, upon request, at the cost of reproduction.

Commencement of Contract Time; Notice to Proceed:

2.3 The Contract Time will commence to run on the date indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within thirty days after the Effective Date of the Agreement. In no event will the Contract Time commence to run later than the thirtieth day after the Effective Date of the Agreement.

Starting the Project:

2.4 CONTRACTOR shall start to perform the WORK on the date when the Contract Time commences to run, but no WORK shall be done at the site prior to the date on which the Contract Time commences to run.

Before Starting Construction:

2.5 Before undertaking each part of the WORK, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before preceding with any WORK affected thereby; however,
CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

2.6 Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for review:

2.6.1 an estimated progress schedule indicating the starting and completion dates of the various stages of the WORK;

2.6.2 a preliminary schedule of Shop Drawing submissions; and

2.6.3 a preliminary schedule of values for all of the WORK which will include quantities and prices of items aggregating the Contract Price and will subdivide the WORK into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of WORK which will be confirmed in writing by CONTRACTOR at the time of submission.

2.7 Before any WORK at the site is started, CONTRACTOR shall deliver to OWNER, with a copy to ENGINEER, certificates (and other evidence of insurance requested by OWNER) which CONTRACTOR is required to purchase and maintain in accordance with paragraphs 5.1 and 5.2, and OWNER shall deliver to CONTRACTOR certificates (and other evidence of insurance requested by CONTRACTOR) which OWNER is required to purchase and maintain in accordance with paragraphs 5.4 and 5.5.

Preconstruction Conference:

2.8 Within twenty days after the Effective Date of the Agreement, but before CONTRACTOR starts the WORK at the site, a conference attended by CONTRACTOR, ENGINEER and others as appropriate will be held to discuss the schedules referred to in paragraph 2.6, to discuss procedures for handling Shop Drawings and other submittals and for processing Applications for Payment, and to establish a working understanding among the parties as to the WORK.

Finalizing Schedules:

2.9 At least ten days before submission of the first Application for Payment, CONTRACTOR, ENGINEER and others as appropriate will finalize the schedules submitted in accordance with paragraph 2.6. The finalized progress schedule will be acceptable to ENGINEER as providing an orderly progression of the WORK to completion within the Contract Time, but such acceptance will neither impose on ENGINEER responsibility for the progress or scheduling of the WORK nor relieve CONTRACTOR from full responsibility therefor. The finalized schedule of Shop Drawing submissions will be acceptable to ENGINEER as providing a workable arrangement for processing the submissions. The finalized schedule of values will be acceptable to ENGINEER as to form and substance.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

Intent:

3.1 The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the WORK. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

3.2 It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any WORK, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied
whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe WORK, materials or equipment, such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or Laws or Regulations in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or ENGINEER, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to ENGINEER, or any of ENGINEER’S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.15 or 9.16. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in paragraph 9.4.

3.3 If, during the performance of the WORK, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to ENGINEER in writing at once and before proceeding with the WORK affected thereby shall obtain a written interpretation or clarification from ENGINEER; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

**Amending and Supplementing Contract Documents:**

3.4 The Contract Documents may be amended to provide for additions, deletions and revisions in the WORK or to modify the terms and conditions thereof in one or more of the following ways:

3.4.1 a formal Written Amendment,

3.4.2 a Change Order (pursuant to paragraph 10.4), or

3.4.3 a WORK Directive Change (pursuant to paragraph 10.1). As indicated in paragraph 11.2 and 12.1, Contract Price and Contract Time may only be changed by a Change Order or a Written Amendment.

3.5 In addition, the requirements of the Contract Documents may be supplemented, and minor variations and deviations in the WORK may be authorized, in one or more of the following ways:

3.5.1 a Field Order (pursuant to paragraph 9.5),

3.5.2 ENGINEER’S review of a Shop Drawings or sample (pursuant to paragraphs 6.26 and 6.27), or

3.5.3 ENGINEER’S written interpretation or clarification (pursuant to paragraph 9.4).

**Reuse of Documents:**

3.6 Neither CONTRACTOR nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the WORK under a direct or indirect contract with OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER; and they shall not reuse any of them on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER.
ARTICLE 4 - AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

Availability of Lands:

4.1 OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the WORK is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR believes that any delay in OWNER’S furnishing these lands, rights-of-way or easements entitles CONTRACTOR to an extension of the Contract Time, CONTRACTOR may make a claim therefore as provided in Article 12. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

Physical Conditions:

4.2.1 Explorations and Reports: Reference is made to the Supplementary Conditions for identification of those reports of explorations and tests of subsurface conditions at the site that have been utilized by ENGINEER in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such reports, but not upon nontechnical data, interpretations or opinions contained therein or for the completeness thereof for CONTRACTOR’S purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to subsurface conditions at the site.

4.2.2 Existing Structures: Reference is made to the Supplementary Conditions for identification of those drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities referred to in paragraph 4.3) which are at or contiguous to the site that have been utilized by ENGINEER in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such drawings, but not for the completeness thereof for CONTRACTOR’S purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to physical conditions in or relating to such structures.

4.2.3 Report of Differing Conditions:

If CONTRACTOR believes that:

4.2.3.1 any technical data on which CONTRACTOR is entitled to rely as provided in paragraphs 4.2.1 and 4.2.2 is inaccurate, or

4.2.3.2 any physical condition uncovered or revealed at the site differs materially from that indicated, reflected or referred to in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before performing any WORK in connection therewith (except in an emergency as permitted by paragraph 6.22), notify OWNER and ENGINEER in writing about the inaccuracy or difference.

4.2.4 ENGINEER’S Review: ENGINEER will promptly review the pertinent conditions, determine the necessity of obtaining additional explorations or tests with respect thereto and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER’S finding and conclusions.

4.2.5 Possible Document Change: If ENGINEER concludes that there is a material error in the Contract Documents or that because of newly discovered conditions a change in the Contract Documents is required, a WORK Directive Change or a Change Order will be issued as provided in Article 10 to reflect and document the consequences of the inaccuracy or difference.
4.2.6 Possible Price and Time Adjustments: In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, will be allowable to the extent that these are attributable to any such inaccuracy or difference. If OWNER and CONTRACTOR are unable to agree as to the amount or length thereof, a claim may be made therefor as provided in Articles 11 and 12.

**Physical Conditions - Underground Facilities:**

4.3.1 Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based on information and data furnished to OWNER or ENGINEER by the OWNERS of such Underground Facilities or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

4.3.1.1 OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and,

4.3.1.2 CONTRACTOR shall have full responsibility for reviewing and checking all such information and data, for locating all Underground Facilities shown or indicated in the Contract Documents, for coordination of the WORK with the OWNERS of such Underground Facilities during construction, for the safety and protection thereof as provided in paragraph 6.20 and repairing any damage thereto resulting from the WORK, the cost of all of which will be considered as having been included in the Contract Price.

4.3.2 Not Shown or Indicated: If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of, CONTRACTOR shall, promptly after becoming aware thereof and before performing any WORK affected thereby (except in an emergency as permitted by paragraph 6.22), identify the OWNER of such Underground Facility and give written notice thereof to that OWNER and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract Documents will be amended or supplemented to the extent necessary. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility as provided in paragraph 6.20. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any Underground Facility that was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of. If the parties are unable to agree as to the amount or length thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

**Reference Points:**

4.4 OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER’S judgment are necessary to enable CONTRACTOR to proceed with the WORK. CONTRACTOR shall be responsible for laying out the WORK (unless otherwise specified in the General Requirements), shall protect and reserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel.
ARTICLE 5 - BONDS AND INSURANCE

Performance and Other Bonds:

5.1 CONTRACTOR shall furnish performance and payments Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR’S obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as otherwise provided by Law or Regulation or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds shall be in the form as specified in the Advertisement For Bids and be executed by such sureties as are named in the current of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of the authority to act.

5.2 If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.3, CONTRACTOR shall within five days thereafter substitute another Bond and Surety, both of which must be acceptable to OWNER.

CONTRACTOR’S Liability Insurance:

5.3 See “Insurance” Section of the Construction Agreement.

Contractual Liability Insurance:

5.4 See “Insurance” Section of the Construction Agreement.

OWNER’S Liability Insurance:

5.5 See “Insurance” Section of the Construction Agreement.

Property Insurance:

Section 5.6 is Deleted

Waiver of Rights:

5.7. See Construction Agreement.

Receipt and Application of Proceeds:

Section 5.8 is Deleted.

Acceptance of Insurance:

5.10 If OWNER has any objection to the coverage afforded by or other provisions of the insurance required to be purchased and maintained by CONTRACTOR in accordance with paragraphs 5.1 and 5.2 on the basis of its not complying with the Contract Documents, OWNER shall notify CONTRACTOR in writing thereof within ten days of the date of delivery of such certificates to OWNER in accordance with paragraph 2.7. If CONTRACTOR has any objection to the coverage afforded by or other provisions of the policies of insurance required to be purchased and maintained by OWNER on the basis of their not complying with the Contract Documents, CONTRACTOR shall notify OWNER in writing thereof within ten days of the date of delivery of such certificates to CONTRACTOR in accordance with paragraph 2.7. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided by each as the other may reasonably request. Failure by OWNER or CONTRACTOR to give any such notice of objection within the time provided shall constitute acceptance of such insurance purchased by the other as complying with the Contract Documents.
Partial Utilization - Property Insurance:

5.11 If OWNER finds it necessary to occupy or use a portion or portions of the WORK prior to Substantial Completion of all the WORK, such use or occupancy may be accomplished in accordance with paragraph 14.10; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected the changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

Supervision and Superintendence:

6.1 CONTRACTOR shall supervise and direct the WORK competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the WORK in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence or procedure of construction which is indicated in and required by the Contract Documents. CONTRACTOR shall be responsible to see that the finished WORK complies accurately with the Contract Documents.

6.2 CONTRACTOR shall keep on the WORK at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR’S representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

Labor, Materials and Equipment:

6.3 CONTRACTOR shall provide competent, suitable qualified personnel to survey and lay out the WORK and perform construction as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site.

6.4 Unless otherwise specified in the General Requirements, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the WORK.

6.5 All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective to assign to ENGINEER, or any of ENGINEER’S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.15 to 9.16.

Adjusting Progress Schedule:

6.6 CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.9) adjustments in the progress schedule to
reflect the impact thereon of new developments; these will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

Substitutes or "Or-Equal" Items:

6.7.1 Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other Suppliers may be accepted by ENGINEER if sufficient information is submitted by CONTRACTOR to allow ENGINEER to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by ENGINEER will include the following as supplemented in the General Requirements. Requests for review of substitute items of material and equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall make written application to ENGINEER for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will state that the evaluation and acceptance of the proposed substitute will not prejudice CONTRACTOR’S achievement of Substantial Completion on time, whether or not acceptance of the substitute for use in the WORK will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for WORK on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the WORK is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other CONTRACTORs affected by the resulting change, all of which shall be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish at CONTRACTOR’S expense additional data about the proposed substitute.

6.7.2 If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to ENGINEER, if CONTRACTOR submits sufficient information to allow ENGINEER to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in paragraph 6.7.1 as applied by ENGINEER and as may be supplemented in the General Requirements.

6.7.3 ENGINEER will be allowed a reasonable time within which to evaluate each proposed substitute. ENGINEER will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without ENGINEER’S prior written acceptance which will be evidenced by either a Change Order or a reviewed Shop Drawing. OWNER may require CONTRACTOR to furnish at CONTRACTOR’S expense a special performance guarantee or other surety with respect to any substitute. ENGINEER will record time required by ENGINEER and ENGINEER’S consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not ENGINEER accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER’S
Concerning Subcontractors, Suppliers and Others:

6.8.1 CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization (including those acceptable to OWNER and ENGINEER as indicated in paragraph 6.8.2), whether initially or as a substitute, against whom OWNER or ENGINEER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the WORK against whom CONTRACTOR has reasonable objection.

6.8.2 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers or other persons or organizations (including those who are to furnish the principal items of materials and equipment) to be submitted to OWNER in advance of the specified date prior to the Effective Date of the Agreement for acceptance by OWNER and ENGINEER and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER’S or ENGINEER’S acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the bidding documents or the Contract Documents) of any such Subcontractor, Supplier or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case CONTRACTOR shall submit an acceptable substitute, the Contract Price will be increased by the difference in the cost occasioned by such substitution and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER or ENGINEER of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of OWNER or ENGINEER to reject defective WORK.

6.9 CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the WORK under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR’S own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

6.10 The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the WORK among Subcontractors or Suppliers or delineating the WORK to be performed by any specific trade.

6.11 All WORK performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER and contains waiver provisions as required by paragraph 5.8. CONTRACTOR shall pay each Subcontractor a just share of any insurance moneys received by CONTRACTOR on account of losses under policies issued pursuant to paragraph 5.4 and 5.5.

Patent Fees and Royalties:

6.12 CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the WORK or the incorporation in the WORK of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process,
product or device is specified in the Contract Documents for use in the performance of the WORK and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. CONTRACTOR shall indemnify and hold harmless OWNER and ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorneys' fees and court and arbitration costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the WORK or resulting from the incorporation in the WORK of any invention, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

**Permits:**

6.13 Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the WORK, which are applicable at the time of opening of Bids, or if there are no Bids on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility OWNERS for connections to the WORK, and OWNER shall pay all charges of such utility OWNERS for capital costs related thereto.

**Laws and Regulations:**

6.14.1 CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the WORK. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR’s compliance with any Laws or Regulations.

6.14.2 If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations. CONTRACTOR shall give ENGINEER prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 3.4. If CONTRACTOR performs any WORK knowing or having reason to know that it is contrary to such Laws or Regulations, and without such notice to ENGINEER, CONTRACTOR shall bear all costs arising therefrom; however, it shall not be CONTRACTOR’S primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

**Taxes:**

6.15 CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the WORK.

**Uses of Premises:**

6.16 CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Project site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the OWNER or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the WORK. Should any claim be made against OWNER or ENGINEER by any such OWNER or occupant because of the performance of the WORK, CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or at law.
CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER and ENGINEER harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of ENGINEERS, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against OWNER or ENGINEER to the extent based on a claim arising out of CONTRACTOR’S performance of the WORK.

6.17 During the progress of the WORK, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the WORK. At the completion of the WORK CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by OWNER. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

6.18 CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the WORK or adjacent property to stresses or pressures that will endanger it.

**Record Documents:**

6.19 CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, WORK Directive Changes, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during construction. These record documents together with all approved samples and a counterpart of all reviewed Shop Drawings will be available to ENGINEER for reference. Upon completion of the WORK, these record documents, samples and Shop Drawings will be delivered to ENGINEER for OWNER.

**Safety and Protection:**

6.20 CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the WORK. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

- 6.20.1 all employees on the WORK and other persons and organizations who may be affected thereby;
- 6.20.2 all the WORK and materials and equipment to be incorporated therein, whether in storage on or off the site; and
- 6.20.3 other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation or replacement in the course of construction.

CONTRACTOR shall comply with all applicable Laws and Regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection.

CONTRACTOR shall notify OWNERS of adjacent property and of Underground Facilities and utility OWNERS when prosecution of the WORK may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in paragraph 6.20.2 or 6.20.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or
furnish any of the WORK or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR). CONTRACTOR’S duties and responsibilities for the safety and protection of the WORK shall continue until such time as all the WORK is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.13 that the WORK is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.21 CONTRACTOR shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR’S superintendent unless otherwise designated in writing by CONTRACTOR to OWNER.

**Emergencies:**

6.22 In emergencies affecting the safety or protection of persons or the WORK or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from ENGINEER or OWNER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the WORK or variations from the Contract Documents have been caused thereby. If ENGINEER determines that a change in the Contract Documents is required because of the action taken in response to an emergency, a WORK Directive Change or Change Order will be issued to document the consequences of the changes or variations.

**Shop Drawings and Samples:**

6.23 After checking and verifying all field measurements and after complying with applicable procedures specified in the General Requirements, CONTRACTOR shall submit to ENGINEER for review in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.9), or for other appropriate action if so indicated in the Supplementary Conditions, three copies plus the number of copies required by the CONTRACTOR (unless otherwise specified in the General Requirements) of all Shop Drawings, which will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR’S responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as ENGINEER may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable ENGINEER to review the information as required.

6.24 CONTRACTOR shall also submit to ENGINEER for review with such promptness as to cause no delay in WORK, all samples required by the Contract Documents. All samples will have been checked by and accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR’S responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended.

6.25.1 Before submission of each Shop Drawing or sample CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and review or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the WORK and the Contract Documents.
6.25.2 At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to ENGINEER for review of each such variation.

6.26 ENGINEER will review with reasonable promptness Shop Drawings and samples, but ENGINEER’S review will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by ENGINEER, and shall return the required number of corrected copies of Shop Drawings and submit as required new samples for review. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.27 ENGINEER’S review of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER’S attention to each such variation at the time of submission as required by paragraph 6.25.2 and ENGINEER has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample approval; nor will any review by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of paragraph 6.25.1.

6.28 Where a Shop Drawing or sample is required by the Specifications, any related WORK performed prior to ENGINEER’S review of the pertinent submission will be the sole expense and responsibility of CONTRACTOR.

**Continuing the WORK:**

6.29 CONTRACTOR shall carry on the WORK and adhere to the progress schedule during all disputes or disagreements with OWNER. No WORK shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.5 or as CONTRACTOR and OWNER may otherwise agree in writing.

**Indemnification:**

6.30 See Construction Agreement.

**ARTICLE 7 - OTHER WORK**

**Related WORK at Site:**

7.1 OWNER may perform other WORK related to the Project at the site by OWNER’S own forces, have other WORK performed by utility OWNERS or let other direct contracts therefor which shall contain General Conditions similar to these. If the fact that such other WORK is to be performed was not noted in the Contract Documents, written notice thereof will be given to CONTRACTOR prior to starting any such other WORK; and, if CONTRACTOR believes that such performance will involve additional expense to CONTRACTOR or requires additional time and the parties are unable to agree as to the extent thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.
7.2 **CONTRACTOR** shall afford each utility OWNER and other CONTRACTOR who is a party to such a direct contract (or OWNER, if OWNER is performing the additional WORK with OWNER’S employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such WORK, and shall properly connect and coordinate the WORK with theirs. CONTRACTOR shall do all cutting, fitting and patching of the WORK that may be required to make its several parts come together properly and integrate with such other WORK. CONTRACTOR shall not endanger any WORK of others by cutting, excavating or otherwise altering their WORK and will only cut or alter their WORK with the written consent of ENGINEER and the others whose WORK will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility OWNERS and other CONTRACTORS to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility OWNERS and other CONTRACTORS.

7.3 If any part of the CONTRACTOR’S WORK depends for proper execution or results upon the WORK of any such other CONTRACTOR or utility OWNER (or OWNER), CONTRACTOR shall inspect and promptly report to ENGINEER in writing any delays, defects or deficiencies in such WORK that render it unavailable or unsuitable for such proper execution and results. CONTRACTOR’S failure so to report will constitute an acceptance of the other WORK as fit and proper for integration with CONTRACTOR’S WORK except for latent or nonapparent defects and deficiencies in the other WORK.

**Coordination:**

7.4 If OWNER contracts with others for the performance of other WORK on the Project at the site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime CONTRACTORS will be identified in the Supplementary Conditions, and the specific matters to be covered by such authority and responsibility will be itemized, and the extent of such authority and responsibilities will be provided, in the Supplementary Conditions. Unless otherwise provided in the Supplementary Conditions, neither OWNER nor ENGINEER shall have any authority or responsibility in respect of such coordination.

**ARTICLE 8 - OWNER’S RESPONSIBILITIES**

8.1 OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.2 In case of termination of the employment of ENGINEER, OWNER shall appoint an ENGINEER against whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER. Any dispute in connection with such appointment shall be subject to arbitration.

8.3 OWNER shall furnish the data required of OWNER under the Contract Documents promptly and shall make payments to CONTRACTOR promptly after they are due as provided in paragraphs 14.4 and 14.13.

8.4 OWNER’S duties in respect of providing lands and easements and providing Engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER’S identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and in existing structures which have been utilized by ENGINEER in preparing the Drawings and Specifications.

8.5 OWNER’S responsibilities in respect of purchasing and maintaining liability and property insurance are set forth in paragraphs 5.3 through 5.6.
8.6 OWNER is obligated to execute Change Orders as indicated in paragraph 10.4.

8.7 OWNER’S responsibility in respect of certain inspections, tests and approvals is set forth in paragraph 13.4.

8.8 In connection with OWNER’S right to stop WORK or suspend WORK, see paragraphs 13.10 and 15.1. Paragraph 15.2 deals with OWNER’S right to terminate services of CONTRACTOR under certain circumstances.

ARTICLE 9 - ENGINEER’S STATUS DURING CONSTRUCTION

OWNER’S Representative:

9.1 ENGINEER will be OWNER’S representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER’S representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER and ENGINEER.

Visits to Site:

9.2 ENGINEER will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed WORK and to determine, in general, if the WORK is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the WORK. ENGINEER’S efforts will be directed toward providing for OWNER a greater degree of confidence that the completed WORK will conform to the Contract Documents. On the basis of such visits and on-site observations as an experienced and qualified design professional, ENGINEER will keep OWNER informed of the progress of the WORK and will endeavor to guard OWNER against defects and deficiencies in the WORK.

Project Representation:

9.3 If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in observing the performance of the WORK. The duties, responsibilities and limitations of authority of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions. If OWNER designates another agent to represent OWNER at the site who is not ENGINEER’S agent or employee, the duties, responsibilities and limitations of authority of such other person will be as provided in the Supplementary Conditions.

Clarifications and Interpretations:

9.4 ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If CONTRACTOR believes that a written clarification or interpretation justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree to the amount or extent thereof, CONTRACTOR may make a claim therefor as provided in Article 11 or Article 12.

Authorized Variations in WORK:

9.5 ENGINEER may authorize minor variations in the WORK from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER, and also on CONTRACTOR who shall perform the WORK involved promptly. If CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may
make a claim therefor as provided in Article 11 or 12.

**Rejecting Defective WORK:**

9.6 ENGINEER will have authority to disapprove or reject WORK which ENGINEER believes to be defective, and will also have authority to require special inspection or testing of the WORK as provided in paragraph 13.9, whether or not the WORK is fabricated, installed or completed.

**Shop Drawings, Change Orders and Payments:**

9.7 In connection with ENGINEER’S responsibility for Shop Drawings and samples, see paragraph 6.23 through 6.29 inclusive.

9.8 In connection with ENGINEER’S responsibilities as to Change Orders, see Articles 10, 11 and 12.

9.9 In connection with ENGINEER’S responsibilities in respect of Application for Payment, see Article 14.

**Determinations for Unit Prices:**

9.10 ENGINEER will determine the actual quantities and classifications of Unit Price WORK performed by CONTRACTOR. ENGINEER will review with CONTRACTOR ENGINEER’S preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER’S written decisions thereon will be final and binding upon OWNER and CONTRACTOR, unless, within ten days after the date of any such decision, either OWNER or CONTRACTOR delivers to the other party to the Agreement and to ENGINEER written notice of intention to appeal from such a decision.

**Decisions on Disputes:**

9.11 ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the WORK thereunder. Claims, disputes and other matters relating to the acceptability of the WORK or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the WORK and claims under Articles 11 and 12 in respect of changes in the Contract Price or Contract Time will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph, which ENGINEER will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter will be delivered by the claimant to ENGINEER and the other party to the Agreement promptly (but in no event later than thirty days) after the occurrence of the event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within sixty days after such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim.

9.12 When functioning as interpreter and judge under paragraphs 9.10 and 9.11, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to paragraphs 9.10 and 9.11 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.16) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such claim, dispute or other matter.

**Limitations on ENGINEER’S Responsibilities:**

9.13 Neither ENGINEER’S authority to act under this Article 9 or elsewhere in the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such
authority shall give rise to any duty or responsibility of ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the WORK, or to any surety for any of them.

9.14 Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the WORK, it is intended that such requirement, direction, review or judgment will be solely to evaluate the WORK for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the WORK or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.15 or 9.16.

9.15 ENGINEER will not be responsible for CONTRACTOR’S means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR’S failure to perform or furnish the WORK in accordance with the Contract Documents.

9.16 ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the WORK.

ARTICLE 10 - CHANGES IN THE WORK

10.1 Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the WORK; these will be authorized by a Written Amendment, a Change Order, or a WORK Directive Change. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the WORK involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

10.2 If OWNER and CONTRACTOR are unable to agree as to the extent, if any, of an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a WORK Directive Change, a claim may be made therefor as provided in Article 11 or Article 12.

10.3 CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any WORK performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraphs 3.4 and 3.5, except in the case of an emergency as provided in paragraph 6.22 and except in the case of uncovering WORK as provided in paragraph 13.9.

10.4 OWNER and CONTRACTOR shall execute appropriate Change Orders (or Written Amendments) covering:

10.4.1 changes in the WORK which are ordered by OWNER pursuant to paragraph 10.1, are required because of acceptance of defective WORK under paragraph 13.13 or correcting defective WORK under paragraph 13.14, or are agreed to by the parties;

10.4.2 changes in the Contract Price or Contract Time which are agreed to by the parties; and

10.4.3 changes in the Contract Price or Contract time which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 9.11; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the
provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the WORK and adhere to the progress schedule as provided in paragraph 6.29.

10.5 If notice of any change affecting the general scope of the WORK or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR’S responsibility, and the amount of each applicable Bond will be adjusted accordingly.

**ARTICLE 11 - CHANGE OF CONTRACT PRICE**

11.1 The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the WORK. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

11.2 The Contract Price may only be changed by a Change Order or by a Written Amendment. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by claimant's written statement that the amount claimed covers all known amounts (direct, indirect and consequential) to which the claimant is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Price shall be determined by ENGINEER in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise agree on the amount involved.

No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this paragraph 11.2.

11.3 The value of any WORK covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

11.3.1 Where the WORK involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.9.1 through 11.9.3 inclusive).

11.3.2 By mutual acceptance of a lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 11.6.2.1).

11.3.3 On the basis of the Cost of the WORK (determined as provided in paragraphs 11.4 and 11.5) plus a CONTRACTOR’S Fee for overhead and profit (determined as provided in paragraphs 11.6 and 11.7).

**Cost of the WORK:**

11.4 The term Cost of the WORK means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the WORK. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1 Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the WORK under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Payroll costs for employees not employed full time on the WORK shall be apportioned on the basis of their time spent on the WORK. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which
shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing WORK after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above.

11.4.2 Cost of all materials and equipment furnished and incorporated in the WORK, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

11.4.3 Payments made by CONTRACTOR to the Subcontractors for WORK performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of ENGINEER, which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the WORK Plus a Fee, the Subcontractor's Cost of the WORK shall be determined in the same manner as CONTRACTOR'S Cost of the WORK. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.4.4 Costs of special consultants (including but not limited to ENGINEERs, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the WORK.

11.4.5 Supplemental costs including the following:

11.4.5.1 The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR'S employees incurred in discharge of duties connected with the WORK.

11.4.5.2 Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the Workers, which are consumed in the performance of the WORK, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

11.4.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof-all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the WORK.

11.4.5.4 Sales, consumer, use or similar taxes related to the WORK, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

11.4.5.5 Deposits lost for cause other than negligence of CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

11.4.5.6 Losses and damages (and related expenses), not compensated by insurance or otherwise, to the WORK or otherwise sustained by CONTRACTOR in connection with the performance and furnishing of the WORK (except losses and damages within the deductible amounts of property insurance established by
OWNER in accordance with paragraph 5.7), provided they have resulted from causes other than the negligence of CONTRACTOR, and Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the WORK for the purpose of determining CONTRACTOR’S Fee. If, however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid for services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7 The cost of utilities, fuel and sanitary facilities at the site.

11.4.5.8 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the WORK.

11.4.5.9 Cost of premiums for additional Bonds and insurance required because of changes in the WORK and premiums for property insurance coverage within the limits of the deductible amounts established by OWNER in accordance with paragraph 5.7.

11.5 The term Cost of the WORK shall not include any of the following:

- all of which are to be considered administrative costs covered by the CONTRACTOR’S Fee.

11.5.2 Expenses of CONTRACTOR’S principal and branch offices other than CONTRACTOR’S office at the site.

11.5.3 Any part of CONTRACTOR’S capital expenses, including interest on CONTRACTOR’S capital employed for the WORK and charges against CONTRACTOR for delinquent payments.

11.5.4 Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 11.4.5.9 above).

11.5.5 Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective WORK, disposal of materials or equipment wrongly supplied and making good any damage to property.

11.5.6 Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

**CONTRACTOR’S Fee:**

11.6 The CONTRACTOR’S Fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

11.6.1 a mutually acceptable fixed fee; or if none can be agreed upon.

11.6.2 a fee based on the following percentages of the various portions of the Cost of the WORK:
11.6.2.1 for costs incurred under paragraphs 11.4.1 and 11.4.2, the CONTRACTOR’S Fee shall be fifteen percent;

11.6.2.2 for costs incurred under paragraph 11.4.3, the CONTRACTOR’S Fee shall be five percent; and if a subcontract is on the basis of Cost of the WORK Plus a Fee, the maximum allowable to CONTRACTOR on account of overhead and profit of all Subcontractors shall be fifteen percent;

11.6.2.3 no fee shall be payable on the basis of costs itemized under paragraphs 11.4.4, 11.4.5 and 11.5;

11.6.2.4 the amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in CONTRACTOR’S Fee by an amount equal to ten percent of the net decrease; and

11.6.2.5 when both additions and credits are involved in any one change, the adjustment in CONTRACTOR’S Fee shall be computed on the basis of the net change in accordance with paragraphs 11.6.2.1 through 11.6.2.4, inclusive.

11.7 Whenever the cost of any WORK is to be determined pursuant to paragraph 11.4 or 11.5, CONTRACTOR will submit in form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

Cash Allowances:

11.8 It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the WORK so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to ENGINEER. CONTRACTOR agrees that:

11.8.1 The allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

11.8.2 CONTRACTOR’S costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid.

Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of WORK covered by allowances, and the Contract Price shall be correspondingly adjusted.

Unit Price WORK:

11.9.1 Where the Contract Documents provide that all or part of the WORK is to be Unit Price WORK, initially the Contract Price will be deemed to include for all Unit Price WORK an amount equal to the sum of the established unit prices for each separately identified item of Unit Price WORK times the estimated quantity of each item as indicated in the Proposal. The estimated quantities of items of Unit Price WORK are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price WORK performed by CONTRACTOR will be made by ENGINEER in accordance with Paragraph 9.10.

11.9.2 Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR’S overhead and profit for each separately identified item.
11.9.3 Where the quantity of any item of Unit Price WORK performed by CONTRACTOR differs by more than twenty-five percent from the estimated quantity of such item indicated in the Proposal and there is no corresponding adjustment with respect to any other item of WORK and if CONTRACTOR believes that CONTRACTOR has incurred additional expense as a result thereof, CONTRACTOR may make a claim for an increase in the Contract Price in accordance with Article 11 if the parties are unable to agree as to the amount of any such increase.

ARTICLE 12 - CHANGE OF CONTRACT TIME

Section 12.1 Deleted

Section 12.2 Deleted

12.3 All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 12 shall not exclude recovery for damages (including but not limited to fees and charges of ENGINEERS, architects, attorneys and other professionals and court and arbitration costs) for delay by either party.

ARTICLE 13 - WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

Warranty and Guarantee:

13.1 CONTRACTOR warrants and guarantees to OWNER and ENGINEER that all WORK will be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects shall be given to CONTRACTOR. All defective WORK, whether or not in place, may be rejected, corrected or accepted as provided in this Article 13.

Access to WORK:

13.2 ENGINEER and ENGINEER’S representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional

interests will have access to the WORK at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide proper and safe conditions for such access.

Tests and Inspections:

13.3 CONTRACTOR shall give ENGINEER timely notice of readiness of the WORK for all required inspections, tests or approvals.

13.4 If Laws or Regulations of any public body having jurisdiction require any WORK (or part thereof) to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefor, pay all costs in connection therewith and furnish ENGINEER the required certificates of inspection, testing or approval. CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with OWNER’S or ENGINEER’S acceptance of a Supplier of materials or equipment submitted for approval prior to CONTRACTOR’S purchase thereof for incorporation in the WORK. The cost of all inspections, tests and approvals in addition to the above which are required by the Contract Documents shall be paid by OWNER (unless otherwise specified).

13.5 All inspections, tests or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR (or by ENGINEER if so specified).

13.6 If any WORK (including the WORK of others) that is to be inspected, tested or approved is covered without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation. Such uncovering shall be at CONTRACTOR’S expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR’S intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.
13.7 Neither observations by ENGINEER nor inspections, tests or approvals by others shall relieve CONTRACTOR from CONTRACTOR’S obligations to perform the WORK in accordance with the Contract Documents.

**Uncovering WORK:**

13.8 If any WORK is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER’S observation and replaced at CONTRACTOR’S expense.

13.9 If ENGINEER considers it necessary or advisable that covered WORK be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER’S request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the WORK in question, furnishing all necessary labor, material and equipment. If it is found that such WORK is defective, CONTRACTOR shall bear all direct, indirect and consequential costs of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, (including but not limited to fees and charges of ENGINEERS, architects, attorneys and other professionals), and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, may make a claim therefor as provided in Article 11. If, however, such WORK is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

**OWNER May Stop the WORK:**

13.10 If the WORK is defective, or CONTRACTOR fails to supply sufficiently skilled Workers or suitable materials or equipment, or fails to furnish or perform the WORK in such a way that the completed WORK will conform to the Contract Documents, the OWNER may order CONTRACTOR to stop the WORK, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the WORK shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any other party.

**Correction or Removal of Defective WORK:**

13.11 If required by ENGINEER, CONTRACTOR shall promptly, as directed, either correct all defective WORK, whether or not fabricated, installed or completed, or, if the WORK has been rejected by ENGINEER, remove it from the site and replace it with non-defective WORK. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of ENGINEERS, architects, attorneys and other professionals) made necessary thereby.

**One Year Correction Period:**

13.12 If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific Provision of the Contract Documents, any WORK is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER’S written instructions, either correct such defective WORK, or if it has been rejected by OWNER, remove it from the site and replace it with non-defective WORK. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective WORK corrected or the rejected WORK removed and replaced, and all direct, indirect and consequential costs of such removal and replacement (including but not limited to fees and
charges of ENGINEERs, architects, attorneys and other professionals) will be paid by CONTRACTOR. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all WORK, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

**Acceptance of Defective WORK:**

13.13 If, instead of requiring correction or removal and replacement of defective WORK, OWNER (and, prior to ENGINEER’S recommendation of final payment, also ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall bear all direct, indirect and consequential costs attributable to OWNER’S evaluation of and determination to accept such defective WORK (such costs to be approved by ENGINEER as to reasonableness and to include but not be limited to fees and charges of ENGINEERS, architects, attorneys and other professionals). If any such acceptance occurs prior to ENGINEER’S recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the WORK; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefor as provided in Article 11. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

**OWNER May correct Defective WORK:**

13.14 If CONTRACTOR fails within a reasonable time after written notice of ENGINEER to proceed and to correct defective WORK or to remove and replace rejected WORK as required by ENGINEER in accordance with paragraph 13.11, or if CONTRACTOR fails to perform the WORK in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days’ written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the WORK, and suspend CONTRACTOR’S services related thereto, take possession of CONTRACTOR’S tools, appliances, construction equipment and machinery at the site and incorporate in the WORK all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER’S representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of OWNER in exercising such rights and remedies under this paragraph will be charged against CONTRACTOR in an amount approved as to reasonableness by ENGINEER, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the WORK; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefor as provided in Article 11. Such direct, indirect and consequential costs will include but not be limited to fees and charges of ENGINEERs, architects, attorneys and other professionals, all court and arbitration costs and all costs of repair and replacement of WORK of others destroyed or damaged by correction, removal or replacement of CONTRACTOR’S defective WORK. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the WORK attributable to the exercise by OWNER of OWNER’S rights and remedies hereunder.
ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

Schedule of Values:

14.1 The schedule of values established as provided in paragraph 2.9 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price WORK will be based on the number of units completed.

Application for Progress Payment:

14.2 CONTRACTOR shall submit a monthly signed invoice to the ENGINEER for his review and subsequent payment by the County. Invoices shall be received no later than the 15th day of the month following the month that WORK was performed. Invoices shall indicate the value of WORK completed through the previous month and the amount of previous payments. The invoice amount shall be the total value completed through the previous month, less retainage, less the total amount previously paid. CONTRACTOR shall provide proof that all subcontractors and material suppliers have been paid.

The County shall make payment within thirty (30) days after receipt of the original signed invoice from the ENGINEER providing the above conditions are met. Invoices received after the 15th day of the month following the month WORK was performed, will be paid within forty-five (45) days after receipt of the original signed invoice from the ENGINEER provided that the above conditions are met. CONTRACTOR’S final invoice must be received by the County no later than thirty (30) days after the project completion date specified in the Agreement.

Payments will be sent to the designated address by U. S. Mail only; payments will not be hand delivered.

CONTRACTOR’S Warranty of Title:

14.3 CONTRACTOR warrants and guarantees that title to all WORK, materials and equipment covered by an Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

Review of Applications for Progress Payment:

14.4 ENGINEER will, within five days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER, or return the Application to CONTRACTOR indicating in writing ENGINEER’S reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application. Ten days after presentation of the Application for Payment with ENGINEER’S recommendation, the amount recommended will (subject to the provisions of the last sentence of paragraph 14.7) become due and when due will be paid by OWNER to CONTRACTOR.

14.5 ENGINEER’S recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER’S on-site observations of the WORK in progress as an experienced and qualified design professional and on ENGINEER’S review of the Application for Payment and the accompanying data and schedules that the WORK has progressed to the point indicated; that, to the best of ENGINEER’S knowledge, information and belief, the quality of the WORK is in accordance with the Contract Documents (subject to an evaluation of the WORK as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price WORK under paragraph 9.10, and to any other qualifications stated in the recommendation); and that CONTRACTOR is entitled to payment of the amount
recommended. However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the WORK beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents or that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or OWNER to withhold payment to CONTRACTOR.

14.6 ENGINEER’S recommendation of final payment will constitute an additional representation by ENGINEER to OWNER that the conditions precedent to CONTRACTOR’S being entitled to final payment as set forth in paragraph 14.13 have been fulfilled.

14.7 ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER’S opinion, it would be incorrect to make such representations to OWNER. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in ENGINEER’S opinion to protect OWNER from loss because:

14.7.1 the WORK is defective, or completed WORK has been damaged requiring correction or replacement,

14.7.2 the Contract Price has been reduced by Written Amendment or Change Order.

14.7.3 OWNER has been required to correct defective WORK or complete WORK in accordance with paragraph 13.14, or

14.7.4 of ENGINEER’S actual knowledge of the occurrence of any of the events enumerated in paragraphs 15.2.1 through 15.2.9 inclusive.

OWNER may refuse to make payment of the full amount recommended by ENGINEER because claims have been made against OWNER on account of CONTRACTOR’S performance or furnishing of the WORK or Liens have been filed in connection with the WORK or there are other items entitling OWNER to a set-off against the amount recommended, but OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action.

**Substantial Completion:**

14.8 When CONTRACTOR considers the entire WORK ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire WORK is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Within a reasonable time thereafter, OWNER, CONTRACTOR and ENGINEER shall make an inspection of the WORK to determine the status of completion. If ENGINEER does not consider the WORK substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the WORK substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the WORK is not substantially complete, ENGINEER will within fourteen days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER’S objections, ENGINEER considers the WORK substantially complete, ENGINEER will within said fourteen days execute and deliver to OWNER and CONTRACTOR a definitive certificate of
Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, heat, utilities, insurance and warranties. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER prior to ENGINEER’S issuing the definitive certificate of Substantial Completion, ENGINEER’S aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

14.9 OWNER shall have the right to exclude CONTRACTOR from the WORK after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

Partial Utilization:

14.10 Use by OWNER of any finished part of the WORK, which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER and CONTRACTOR agree constitutes a separately functioning and usable part of the WORK that can be used by OWNER without significant interference with CONTRACTOR’S performance of the remainder of the WORK, may be accomplished prior to Substantial Completion of all the WORK subject to the following:

14.10.1 OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the WORK which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER and ENGINEER that said part of the WORK is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the WORK. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the WORK ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the WORK. Within a reasonable time after either such request, OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the WORK to determine its status of completion. If ENGINEER does not consider that part of the WORK to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the WORK to be substantially complete, the provisions of paragraph 14.8 and 14.9 will apply with respect to certification of Substantial Completion of that part of the WORK and the division of responsibility in respect thereof and access thereto.

14.10.2 OWNER may at any time request CONTRACTOR in writing to permit OWNER to take over operation of any such part of the WORK although it is not substantially complete. A copy of such request will be sent to ENGINEER and within a reasonable time thereafter OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the WORK to determine its status of completion and will prepare a list of the items remaining to be completed or corrected thereon before final payment. If CONTRACTOR does not object in writing to OWNER and ENGINEER that such part of the WORK is not ready for separate operation by OWNER, ENGINEER will finalize the list of items to be completed or corrected and will deliver such list to OWNER and CONTRACTOR together with a written recommendation as to the division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, utilities, insurance, warranties and guarantees for that part of the WORK which will become binding upon OWNER and CONTRACTOR at the time when OWNER takes over such operation (unless they shall have
otherwise agreed in writing and so informed ENGINEER). During such operation and prior to Substantial Completion of such part of the WORK, OWNER shall allow CONTRACTOR reasonable access to complete or correct items on said list and to complete other related WORK.

14.10.3 No occupancy or separate operation of part of the WORK will be accomplished prior to compliance with the requirements of paragraph 5.8 in respect of property insurance.

Final Inspection:

14.11 Upon written notice from CONTRACTOR that the entire WORK or an agreed portion thereof is complete, ENGINEER will make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the WORK is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

Final Application for Payment:

14.12 After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents (as provided in paragraph 6.19) and other documents - all as required by the Contract Documents, and after ENGINEER has indicated that the WORK is acceptable (subject to the provisions of paragraph 14.16), CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the WORK. In lieu thereof and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the WORK for which OWNER or OWNER'S property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment. If any Subcontractor or Supplier fails to furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

Final Payment and Acceptance:

14.13 If, on the basis of ENGINEER’S observation of the WORK during construction and final inspection, and ENGINEER’S review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents, ENGINEER is satisfied that the WORK has been completed and CONTRACTOR’S other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER’S recommendation of payment and present the Application to OWNER for payment. Thereupon ENGINEER will give written notice to OWNER and CONTRACTOR that the WORK is acceptable subject to the provisions of paragraph 14.16. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application. Thirty days after presentation to OWNER of the Application and accompanying documentation, in appropriate form and substance, and with ENGINEER’S recommendation and notice of acceptability, the amount recommended by ENGINEER will become due and will be paid by OWNER to CONTRACTOR.

14.14 If, through no fault of CONTRACTOR, final completion of the WORK is significantly delayed and if ENGINEER so confirms, OWNER shall, upon
receipt of CONTRACTOR’S final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the WORK fully completed and accepted. If the remaining balance to be held by OWNER for WORK not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.1, the written consent of the surety to the payment of the balance due for that portion of the WORK fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

**CONTRACTOR’S Continuing Obligation:**

14.15 CONTRACTOR’S obligation to perform and complete the WORK in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by ENGINEER, nor the issuance of a certificate of Substantial Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the WORK or any part thereof by OWNER, nor any pact of acceptance by OWNER nor any failure to do so, nor any review of a Shop Drawing or sample submission, nor the issuance of a notice of acceptability by ENGINEER pursuant to paragraph 14.13, nor any correction of defective WORK by OWNER will constitute an acceptance of WORK not in accordance with the Contract Documents or a release of CONTRACTOR’S obligation to perform the WORK in accordance with the Contract Documents (except as provided in paragraph 14.16).

**Waiver of Claims:**

14.16 The making and acceptance of final payment will constitute:

14.16.1 a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from defective WORK appearing after final inspection pursuant to paragraph 14.11 or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by OWNER of any rights in respect of CONTRACTOR’S continuing obligations under the Contract Documents; and

14.16.2 a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

**ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION**

**OWNER May Suspend WORK:**

15.1 OWNER may, at any time and without cause, suspend the WORK or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which WORK will be resumed. CONTRACTOR shall resume the WORK on the date so fixed. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if CONTRACTOR makes an approved claim therefor as provided in Articles 11 and 12.

**OWNER May Terminate:**

15.2 See Construction Agreement, Section 10 “Termination”.

**ARTICLE 16 - ARBITRATION**

Section 16.1 is Deleted

Section 16.2 is Deleted

Section 16.3 is Deleted
Section 16.4 is Deleted

Section 16.5 is Deleted

**ARTICLE 17 - MISCELLANEOUS**

**Giving Notice:**

17.1 Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered as stipulated in Section 11E of the Construction Agreement.

**Computation of Time:**

17.2.1 When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.2.2 A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.

**General:**

17.3 Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 17.3 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

17.4 The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.30, 13.1, 13.13, 13.14, 14.3 and 15.2 and all of the rights and remedies available to OWNER and ENGINEER thereunder, are in addition, to and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of the Agreement.
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SECTION VII  
SUPPLEMENTARY GENERAL CONDITIONS

1. **THE GENERAL CONDITIONS:** The General Conditions shall apply to all work in the Contract Documents, except as otherwise specified in the Supplementary General Conditions. Requirements of the Supplementary General Conditions supersede those of the General Conditions.

2. **COMMENCEMENT AND COMPLETION OF WORK:** The Contractor shall commence the Work on the date indicated in the Notice to Proceed and shall diligently prosecute said Work so as to complete the entire project and place it in use within 60 calendar days. Beneficial occupancy shall be obtained in 60 calendar days.

3. **SCOPE OF THE WORK:** The Work includes the furnishing of all necessary machinery, equipment, tools, labor and other construction means, and all materials (except where otherwise noted) required to perform the Work and Specifications and including the placing of the Work into satisfactory operation.

4. **LOCATION:** The work under this Contract will be located in Barrow County, Georgia as shown on the Drawings.

5. **EXTENSION OF TIME AND FAILURE TO COMPLETE ON TIME:** Any and all extensions of time shall be in accordance with the General Conditions, except as otherwise hereinafter provided.

   Failure to complete the Project on or before the stipulated completion date will result in the assessment of liquidated damages in the amount of $1,000.00 per calendar day.

6. **CONSTRUCTION DRAWINGS:** The Work shall conform to the following construction drawings:

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7. **REPORTS AND DRAWINGS USED BY THE ENGINEER:** In the preparation of Drawings and Specifications, ENGINEER has relied upon:


8. **SANITARY CONVENIENCES:** The CONTRACTOR shall provide adequate sanitary conveniences for use of those employed on the work and their use shall be strictly enforced. Such conveniences shall be made available when the first employees arrive on the site and shall be removed after the departure of the last employees from the job.

9. **ENVIRONMENTAL IMPACT:** The CONTRACTOR shall conduct all operations so as to minimize, to the greatest extent possible, adverse environmental impact.

   a. **Noise:** All equipment and machinery shall be provided with exhaust mufflers maintained in good working order so as to reduce operating noise to minimum levels.

   b. **Dust/Smoke:** All equipment movements shall be accompanied by a minimum of dust. Traveled surfaces and earthwork shall be maintained in a moist condition to avoid the generation of dust or the airborne movement of particulate matter under all prevailing atmospheric conditions.

   Burning operations will be conducted only with written permission of the OWNER and/or appropriate regulatory agency. The CONTRACTOR shall be responsible for obtaining all permits and comply with all codes, ordinances and regulations pertaining to the burning.

   c. **Traffic:** Trucks shall be routed over roads which will result in the least effect on traffic and nuisance to the public. All material shall be loaded in a manner which will preclude the loss of any portion of the load in transit, including covering, if necessary.

   d. **Sedimentation:** All points of concentrated runoff from rainfall shall be visually monitored to determine that no eroded material from the construction site is being deposited offsite. Measures shall be taken to promptly eliminate such a deposition if occurring, including the installation of detention basins.

10. **CONSTRUCTION STAKEOUT:** The OWNER will provide benchmarks and baselines for horizontal and vertical control at the site of the work.

11. **UTILITIES:** Utilities such as sewer, water and electric lines encountered in the work shall be protected from injury and maintained in service until moved or replaced as required under this Contract or by others as the case may be, or abandoned as may be necessary for the proper construction and use of the new work.
12. **ADJUSTMENT OF DISCREPANCIES:** In all cases of discrepancies between the various dimensions and details shown on drawings, or between the drawings and these specifications, the more expensive construction shall be estimated before construction is started, the matter shall be submitted to the ENGINEER for clarification. Without such a decision, discrepancies shall be adjusted by the CONTRACTOR at his own risk and in settlement of any complications arising from such adjustment, the CONTRACTOR shall bear all of the extra expense involved.

13. **EQUIPMENT ADJUSTMENT AND CALIBRATION:** All mechanical and electrical equipment, including related control systems, shall be subjected to preliminary operation and testing by the Contractor before the individual facilities and systems are put into operation. Tests shall be made to determine whether the equipment has been properly assembled, aligned, adjusted, wired and connected. Any changes, adjustments, or replacement of equipment which are due to errors or omissions on the part of the CONTRACTOR or which may be otherwise necessary to comply with the requirements of this Contract, shall be done without additional cost to the OWNER. Upon completion of the checking and adjustment, the CONTRACTOR shall demonstrate that each separate piece of equipment in each system of related items of mechanical equipment and the related instrumentation and control equipment operate in accordance with the requirements of the Contract Documents. Where no specific performance requirements are stated, the test shall show that the equipment operates in accordance with normal application practice of the equipment. The demonstration test shall show that the equipment operates smoothly and without excessive noise or vibration, that the equipment is responsive to manual and automatic controls, that control and protective devices are properly set, that the equipment will run continuously when continuous operation is intended, and that the equipment will run on a controlled or intermittent basis when this operation is intended. The demonstration test for each piece of equipment shall include check out from each remote control point. All alarm systems and safety lockout systems shall also be demonstrated for proper function along with all process instrumentation and controls.

The demonstration test shall be arranged by the CONTRACTOR who shall notify the ENGINEER not less than 3 days in advance of the date of the test. The CONTRACTOR shall provide personnel from the various trades involved to operate and demonstrate the equipment.

14. **SYSTEM START-UP:** The CONTRACTOR shall place the various items of equipment into operation, and shall notify the ENGINEER at least 3 days in advance of the date of start-up.

Shut down of the existing 24” water main shall be scheduled a minimum 72 hours prior with OWNER. Written plan for flushing, testing, disinfection, and final connections shall be submitted by the contractor and approved by the OWNER prior to construction. Maximum shutdown time for the existing 24” water main shall be 24 hours. Schedule for such start-up of the new 24” water main will be coordinated with OWNER and occur during the duration of the Contract Time and prior to final completion and acceptance of the overall project.

15. **INSTRUCTION OF OWNER’S EMPLOYEES:** The CONTRACTOR shall provide competent personnel who fully understand the operation of the equipment to instruct the OWNER’S employees in the operation and maintenance of each item and system. Such instruction shall take place prior to acceptance of the installation by the OWNER at such a time or times that are acceptable to the OWNER. The CONTRACTOR shall include the cost of this training in the bid price for this Contract. Training shall be of the on-the-job type, and shall cover all areas of operation and equipment maintenance.
Scheduling of instruction of the OWNER’S employees will be mutually agreed upon between the OWNER, CONTRACTOR and the ENGINEER.

16. **OPERATING INSTRUCTION MANUALS:** The CONTRACTOR shall prepare and submit 6 copies of a complete set of operating instructions for the overall project and covering all equipment and systems furnished. Operating instructions shall be prepared specifically for each system installed and shall consider the specific equipment and controls included. Operating instructions shall be complete for each separate system, and shall detail start and stop procedures and shall explain all safety devices and detail procedures and precautions for restarting after failure or safety lockout situations.

17. **MAINTENANCE INSTRUCTION MANUALS:** The CONTRACTOR shall prepare and submit 6 copies of a complete set of maintenance instruction manuals for the overall project and covering all equipment furnished. Manuals shall include complete parts listed for all equipment and recommended spare parts. Manuals shall be prepared specifically for the particular equipment furnished and shall consider the specific operation of this equipment in the particular process system involved. Complete lubrication requirements shall be listed, including recommended lubricant and lubricating intervals or schedule.

18. **MAINTENANCE DURING CONSTRUCTION:** The CONTRACTOR shall maintain the Work from the beginning of construction operations until final acceptance. This maintenance shall constitute continuous and effective work prosecuted day by day with adequate equipment and forces to the end that the site and structures thereon are kept in satisfactory condition at all times, including satisfactory signing or marking as appropriate and control of traffic where required by use of traffic control devices as required by the State in which this project is located.

Upon completion of the Work, the CONTRACTOR shall remove all construction signs and barriers before final acceptance.

While undergoing improvements, the roads shall be kept open to all traffic by the CONTRACTOR. The CONTRACTOR shall keep the portion of the site being used by public traffic, whether it be through or local traffic, in such condition that traffic will be adequately accommodated. The CONTRACTOR shall bear all cost of signs and markings as required and other maintenance work during construction and before the Work is accepted and of constructing and maintaining such approaches, crossings, intersections, and other features as may be necessary without direct compensation.

19. **BARRICADES, DANGER, WARNING & DETOUR SIGNS:** The CONTRACTOR shall provide, erect, and maintain all necessary barricades, suitable and sufficient lights, danger signals, signs and other traffic control devices, and shall take all necessary precautions for the protection of the work and safety of the public. Highways and streets closed to traffic shall be protected by effective barricades, and obstructions shall be lighted during hours of darkness. Suitable warning signs shall be provided to properly control and direct traffic.

The CONTRACTOR shall furnish, install, and maintain all necessary barricades, warning signs, and other protection devices in accordance with the State requirements in which the project is located. Temporary signs may be reused, provided they are in good condition and legible. All protective
devices shall be kept in a good, legible condition while in use.

As soon as construction advances to the extent that temporary barricades, and signs are no longer needed to inform the traveling public, such signs shall be promptly removed.

The cost of furnishing, erecting, maintaining, and removing protective devices will not be paid for as a separate Bid Item. Where the CONTRACTOR is required to perform any of these functions, the cost thereof shall be included in the overallbid submitted. Ownership of the temporary warning devices shall remain with the CONTRACTOR.

20. **HIGH VOLTAGE ACT**: The CONTRACTOR acknowledges the requirement of the State High Voltage Act by execution of this Contract.

21. **ACCESS FOR INSPECTION**: Access for inspection shall be provided for representatives of the Georgia Department of Natural Resources.

22. **INSURANCE**: See Section K of the Agreement for Insurance Requirements.

23. Paragraphs 5.6 and 5.7 of the General Conditions and references thereto shall be non-applicable to this contract.

24. **Subcontracts**: The Contractor shall not contract with any person or entity declared ineligible under Federal laws or regulations from participating in Federally assisted construction projects or to whom the Owner or the Engineer has made reasonable objection. The Contractor shall not be required to contract with anyone to whom he has a reasonable objection. The Contractor shall submit a list of his subcontractors within seven (7) days after Notice of Award.

25. **Safety and Protection**: Attention is invited to the regulations issued by the Secretary of Labor pursuant to Section 107 of the contract Work Hours and Safety Standards Act (40 U.S.C. 333) entitled "Safety and Health Regulations for Construction" (29 CFR Part 1926). The contractor shall be required to comply with those regulations to the extent that any resulting Contract involves construction.

26. **RETAI NAGE OF CONTRACTOR'S PAYMENT**: The retainage shall be an amount equal to 10% of Contractor's partial pay estimate until 50% of the work has been completed. At 50% completion, further partial payments shall be made in full to the CONTRACTOR and no additional amounts may be retained unless the ENGINEER certifies that the job is not proceeding satisfactorily, but amounts previously retained shall not be paid to the CONTRACTOR. At 50% completion or any time thereafter when the progress of the WORK is not satisfactory, additional amounts may be retained but in no event shall the total retainage be more than 20% of the value of the work completed. Upon substantial completion of the work, any amount retained may be paid to the CONTRACTOR. When the WORK has been substantially completed except for WORK which cannot be completed because of weather conditions, lack of materials or other reasons which in the judgement of the OWNER are valid reasons for non-completion, the OWNER may make additional payments, retaining at all times an amount sufficient to cover the estimated cost of the WORK still to be completed. Partial pay estimates may include stored materials. Contractor must submit invoices and all materials must be located at the site of the work. Retainage will not be held on stored materials.
27. Siltation and soil erosion must be minimized during construction and shall be in accordance with the Rules & Regulations of the State of Georgia.

28. Restore disturbed areas to original or better conditions.

29. **USE OF CHEMICALS:** All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide disinfectant, polymer, reactant or other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in conformance with the instructions provided by the chemical manufacturer.

30. **COORDINATION BETWEEN CONTRACTORS:** The General Contractor for this project shall be responsible for coordinating related work items with the subcontractors.

END OF SECTION
SECTION VIII
ATTACHMENTS

- Water Systems Standards – Barrow County Water and Sewerage Authority
  June 2002, Revised September 2011
- Additional Technical Specifications
- Construction Plans (Project # WA023)
- Ethics Ordinance
Barrow County Water & Sewerage Authority

WATER SYSTEM STANDARDS

June 2002
Revised: September 2011
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SECTION 1
GENERAL REQUIREMENTS
Policies and Procedures

1.01 PURPOSE

The Barrow County Board of Commissioners recognizes that water is a natural resource of limited supply.

The purpose of these Policies and Procedures is to establish requirements and guidelines for planning, design and construction of all water improvements constructed in Barrow County. The procedures apply to all water development and construction projects, both public and private, within the jurisdiction of Barrow County.

1.02 DEFINITIONS

A. Contractor: A contractor possessing valid Georgia Utility Contractor’s License.

B. County: Board of Commissioners, Barrow County, Georgia or its authorized representative.

C. BCWSA: Barrow County Water and Sewerage Authority or its authorized representative.

D. Water System: The Barrow County water supply system, including water storage tanks, pumps, piping, hydrants, valves, lines, mains, meters and all other appurtenances.

E. Owner or Developer: Any person, firm, corporation, association, partnership or agent thereof who undertakes or proposes to construct or extend water or wastewater facilities to serve a residential subdivision, industrial park, apartment complex, condominium, and commercial or industrial institutional establishment.

F. EPD: Environmental Protection Division of the State of Georgia Department of Natural Resources.

G. ERU: Equivalent Residential Unit. A housing unit that meets the needs of a single-family residential unit. For example, a 10-unit apartment building would house 10 ERU’s.

H. Water Standards: Latest revision of the Water Standards adopted and published by BCWSA.
1.03 VARIANCES

Based on unique circumstances, BCWSA may grant a variance to the Policies and Procedures.

1.04 PRE-DESIGN CONFERENCE

It is recommended that each Developer or Owner initiate a pre-design conference with BCWSA.

1.05 PROCEDURES

Developers shall plan for and carry out construction of water facilities in accordance with the following procedures.

1. The Developer shall provide a letter of intent stating the desire to obtain water from the Water System and payment of the appropriate fee. Included with the letter, the developer shall provide three (3) copies of the property plat, which shows the number of lots proposed within the subdivision.

2. BCWSA will review all plans, conduct a field pressure and flow test, and analyze the collected data regarding the site. Based upon the review, BCWSA will either approve or make comment upon said plans regarding the available pressure and flows for the subdivision.

3. Upon determination of sufficient pressure and flows for the proposed subdivision, BCWSA will issue written approval to the planning department on behalf of the development.

4. The Developer or Project Engineer shall obtain all required permits and approvals; including but not limited to Land Disturbance Permits, EPD approval, stream buffer variances, and/or U.S Army Corps of Engineers permits. A copy of all required permits and approvals shall be provided to BCWSA prior to plan approval.

5. Upon acquiring all appropriate permits and approvals, the Developer shall provide three (3) copies of the water construction plans to BCWSA for review.

6. BCWSA will review the water construction plans and either approve or make comments. Water construction plans will be returned to the Developer for corrections or with approval. One approved copy of the water construction plans will remain in the BCWSA’s office.
With written approval, the Developer must begin construction within one year.

7. BCWSA must pre-approve all materials and vendor products prior to construction. All shop drawings will be reviewed by BCWSA.

8. The Developer shall notify BCWSA two (2) business days before beginning construction.

9. The Developer must obtain a regular daily inspection from BCWSA of all work in progress.

10. Record drawings or “As-Builts” shall be provided before written final acceptance is provided. No potable water transported through the water lines may be sold to any customer or customers until such time as the approval of the “As-Built” drawings.

11. BCWSA will make final inspection for acceptance of the new water system. Final acceptance will be made when the utilities are properly installed and all inspections and tests are successfully completed.

12. The Contractor shall provide BCWSA with one fire hydrant wrench and the appropriate number of valve keys, as specified in these standards, upon final acceptance by BCWSA.

13. A letter of acceptance will be issued after a satisfactory final inspection has been conducted and title to all water system has been conveyed to “Barrow County Water and Sewerage Authority.” The Developer shall provide a written warranty, which has a minimum one-year period starting the date that the final plat is recorded.

1.06 CONNECTION TO EXISTING SYSTEM

New connections to the existing BCWSA utility system are subject to all county standards, specifications, codes, and ordinances as they pertain to water systems and/or facilities.

1.07 EXISTING SUBDIVISION REGULATIONS

The requirements of these Policies and Procedures for water systems shall be in addition to the requirements of the Barrow County Subdivision Regulations.
1.08 CONVEYANCE OF EXTENSION TO UTILITY SYSTEM

A. The Developer shall submit to the BCWSA, engineering plans and specifications for the proposed extension prepared by the Developer's engineer, which must be approved in writing by the BCWSA prior to any construction work being performed.

B. The Developer shall construct and convey to the BCWSA, free and clear of all encumbrances and at no cost to the BCWSA, all water system improvements.

C. Following conveyance by the Developer, the extension and any additions, repairs and replacements thereto shall at all times remain the sole, complete and exclusive property of and under the control of the BCWSA. The Developer shall have no right or claim in or to the Developer's extension; provided, however, that the extension shall be used for providing service to the development.

1.09 FEES

A. Connection Fee: Connection fees shall be charged for each establishment, structure and use added to the Water System. Prior to receiving final approval from the BCWSA, the Developer will pay the current connection fee presently charged for connections to the BCWSA water utility system as stipulated in the pertinent BCWSA code establishing rates, charges and regulations for water systems.

B. Planning, Inspection and Review Fees: The Developer shall pay a planning, inspection and review fee in order to defray actual costs to the BCWSA, including any attorneys' fees, of:

1. Conducting the review of the engineering plans and specifications;

2. Conducting the inspection of the installation of the water extension; and

3. All other administrative costs incident to either accepting the extension into the BCWSA water utility system or becoming trustee of a non-county-owned system.

C. Fees shall be paid in full prior to receiving BCWSA approval of plans and specifications.
1.10  GRANT OF EASEMENT RIGHTS

Before acceptance of water improvements, the Developer shall execute a grant or grants of easement, in recordable form to be approved by the BCWSA.

1.11  UNDERGROUND UTILITY CONTRACTOR

A. All extensions and additions to the BCWSA water utility system shall be performed by a Georgia Licensed Utility Contractor. The Utility Contractor shall provide to BCWSA copies of all current Georgia Licenses including, but not limited to, their business license, Utility Contractor License, and Utility Manager License.

B. The Utility Contractor shall maintain a liability insurance policy in the amount of at least $1,000,000.00 until the conveyance of the utility system. A copy of the insurance shall be provided to BCWSA before any work shall commence.

C. The BCWSA reserves the right to approve or disapprove the utility contractors or subcontractors.

1.12  PLANS AND SPECIFICATIONS

A. All engineering plans and specifications shall be reviewed and approved by BCWSA. Plans shall be prepared and sealed by a professional engineer currently registered in the State of Georgia.

B. As a minimum, for these types of facilities, Water Lines, Pump Stations, Booster Pump Stations, Elevated Water Storage Tanks, include the indicated information:

1. Water services, fire hydrants, and valves.

2. Scale no smaller than 1 inch = 50 feet.

3. Location of valve vault, by-pass valve, access road, altitude valve, hydrant, well building, parking area, and fence.

1.13  INSTALLATION AND INSPECTION

All water system improvements shall be constructed in accordance with the engineering plans and specifications approved by the BCWSA. The BCWSA shall be afforded the opportunity to make inspections as installation progresses.
1.14 **TESTING**

All water components shall be tested in accordance with these Water Standards.

1.15 **APPROVAL BY GOVERNMENTAL AGENCIES**

The BCWSA’s obligations are contingent upon the Developer obtaining all necessary approvals for the water system from all concerned governmental agencies. Developer assumes the risk of loss as a result of the denial or withdrawal of the approval of any concerned governmental agency, or caused by an act of any governmental agency which affects the ability of the BCWSA to provide water service to Developer not within the sole control of the BCWSA and which, by exercise of due diligence, the BCWSA is unable to overcome.

1.16 **FINAL ACCEPTANCE BY COUNTY**

Final acceptance of water system improvements by BCWSA shall occur in writing at such time as Developer has met all of the terms and conditions of these Policies and Procedures.

1.17 **WARRANTY AND MAINTENANCE BONDS**

A. The Developer shall be responsible for, and make any repairs or replacement required as the result of, any breakage, vandalism or other damage caused to the improvements until final acceptance by BCWSA. After the final acceptance, the Developer shall indemnify and hold BCWSA harmless from the cost of any repairs for any breakage or other damage to the improvements from time of completion of the improvements until completion of all buildings and houses, roads, paving, drainage, and other construction on Developer's property. If, within 10 days of the receipt of BCWSA notice of such breakage or other damage, the Developer fails to make timely repairs and corrections, BCWSA shall have the option to make such repairs or replacements at Developer's cost.

B. Developer shall warrant water system improvements and hold BCWSA harmless against all costs, expenses and losses, including, without limitation, incidental and consequential damages, resulting from any defects in the Developer's extension, including, without limitation, defects in material and workmanship, which are discovered or arise within a period of one year following the date of the final acceptance. Developer shall provide a Maintenance Bond in form and substance acceptable to the BCWSA, in the amount of ten percent (10%) of the total cost of improvements.
1.18 TRUST INDENTURE

A. To assure continuity of maintenance and operation of a non-BCWSA owned community water systems, the Developer shall file a trust indenture or other legal contract or agreement with the Georgia State Department of Natural Resources (DNR), Environmental Protection Division (EPD) for their review and approval. For new or proposed systems, the legal document shall be submitted with the plans and specifications in accordance with DNR Rules and Regulations for Water Quality Control, Rule 391-3-6. The BCWSA's participation in and supporting of any non-BCWSA owned utility system as trustee, is conditioned on:

1. The proposed water system being planned and designed is in accordance with these county standards and specifications.

2. A trust deed or other legal contract being prepared by the Developer(s) in form and content acceptable to the BCWSA.

3. All costs associated with preparation of plans and specifications (including reviews by the County or its designated representative) and the trust deed or legal contract, being borne by the Developer.

1.19 MODIFICATION OF DEVELOPMENT PLANS

Should the Developer modify his development plans which would require greater water flows, or additional water facilities than the service demands designed and approved under the engineering plans and specifications, the Developer shall enter into a new agreement with BCWSA providing for the construction of such additional water facilities meeting all BCWSA and governmental design requirements and shall pay all additional contributions and fees as may be required.

1.20 NOTICE OF CONNECTION TO COUNTY UTILITY SYSTEM

A. Developer shall notify BCWSA of any connections to the water system prior to said connection. If Developer fails to provide timely notice, the Developer will uncover and expose the connection for inspection.

B. Large Water Meter Connections: All persons desiring a two (2") or larger tap must make application at Water Authority Office at least seven (7) working days prior to the date the tap is to be made. The contractor shall furnish the following information when making application:

1. Approved plan for the project.
2. Copy of Street or Highway Permit, if applicable.

3. Meter size and detector application, if for apartment, shopping center, etc.

4. Billing address and purchase order, if required.

5. Plan & Profile of meter installation, if two (2") or larger

C. Water Main Connections for line extensions:

1. All Taps must be approved by the Barrow County Water and Sewerage Authority.

2. Water Authority shall be notified four (4) working days prior to date of the tap on main line.

3. The Contractor will locate the main line valves on both sides of the tap on the main line.

4. Water system personnel shall supervise the service taps and associated work by private contractors.

5. All taps shall be made on wet lines.

6. All taps to be made with saddles or tapping sleeves.

7. Service taps on new mains shall be made wet.

1.21 INTERRUPTION OF FACILITY OPERATIONS

A. The Developer shall provide the BCWSA with written notice at least **five (5)** days prior to any proposed interruption in facility operations required by 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 equipment and operations to be affected; and all other information the BCWSA may require. The Developer shall provide all equipment, piping, auxiliary power or other means necessary to sustain facility operations or function for the planned interruptions.

B. The BCWSA must approve all proposed interruptions in facility operations. Such approval will be provided by the BCWSA to the Developer in writing.
C. During construction of the Developer's project, the Developer shall conduct
operations in a manner and sequence, which will provide for the continued
transportation of water in the Water System. Facility interruptions shall be
limited to the connection of the Developer's project to the Water System.

1.22 APPLICATION FOR SERVICE

The Developer, his successors, or the occupant(s) of the developer's
property, shall make written application to BCWSA for the opening of an
account(s) for service. At the time of making application for service, the
applicant shall pay all correction fees as detailed in these Water Standards
and service charges as set forth in the current county code(s) establishing
rates, charges and regulations.

1.23 RECORD DRAWINGS

A. Record Drawings shall be submitted in one of the following formats:

1. Reproducible mylars
2. Electronic format acceptable to BCWSA.

B. Record Drawings shall be reproducible, shall have a title block indicating
that the drawings are Record Drawings, the name of the company preparing
the Record Drawings, and the date the Record Drawings were prepared.

C. Legibly mark drawings to record actual construction, including:

1. All new construction, in addition to the following
   a. Changes of dimension and detail.
   b. Changes made by field order or by change order.
   c. Details not on original Drawings.

2. Underground Utilities
   a. Horizontal and vertical locations of all exposed and underground
      utilities and appurtenances, both new facilities constructed and
      those utilities encountered, referenced to permanent surface
      improvements. This shall include, but not be limited to all sewer
      lateral locations, manholes, fittings, piping arrangements, water
      valves, hydrants, and electrical conduits within the completed
      facilities.
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. Precision: Unless noted otherwise, Record Drawings shall provide horizontal dimensions, distances and coordinates to the nearest 0.1-foot.

E. The cover of the Record Drawings shall include the following information:

1. Name, business address, telephone number, and license number of the Contractor.

2. Name of manufacturer and supplier of pipe, valves, hydrants and other products provided on the project.

3. Acceptance date by BCWSA.

END OF SUBSECTION
1.01  GENERAL

The Developer shall be responsible for the design of an adequate water distribution system and/or treatment facilities where necessary. The methods of design and construction shall be in accordance with all county codes, accepted engineering practices, and this Section. The Developer is responsible for the coordination of connection to a privately owned system. Public systems shall be located entirely within County-owned property, rights-of-way or dedicated easements.

1.02  DESIGN WATER DEMAND

A. Average Residential, Single-Family and Multi-Family: In the absence of data to the contrary, the following shall be used:

1. 110 gallons per capita per day (gpcd);
2. 385 gallons per day (GPD) per connection; and
3. Fire flow shall equal or exceed 500 gpm for residential and 1,000 gpm for commercial and industrial areas, at a minimum residual pressure of 20 psi, or as required by the Fire Marshal.

B. All Others: Actual flow or estimate for each individual case as approved by BCWSA.

C. Design Peak Water Demand

<table>
<thead>
<tr>
<th>Flow Condition</th>
<th>Gallons-per-minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Day</td>
<td>1.8 x (no. of connection) x 0.3</td>
</tr>
<tr>
<td>Peak Hour</td>
<td>3.25 x (no. of connections) x 0.3</td>
</tr>
</tbody>
</table>

D. Design all water mains to provide a maximum of 2 feet of head loss per thousand feet of line.

E. System looping:

1. Water plans will be reviewed for potential looping within the system to provide reliable service and adequate fire protection for the sub-division as detailed in AWWA Manual M31.
2. In the event a line is not looped and where valves and plugs are installed for future expansion, measures shall be taken to prevent stagnant water from developing in the water main.

1.03 SIZES OF WATER MAINS

A. Mains shall be 8-inch minimum nominal diameter pipe. A 6-inch nominal diameter pipe may be used on short cul-de-sac streets where approved by BCWSA.

B. House service connection shall be ¾-inch pipe, minimum.

1.04 LOCATION

A. Water Mains: within right-of-way of street or easement.

B. Booster Pump Stations: on separate parcel 30 x 30 minimum.

C. Easements: Minimum 20-feet width for water main. Easements will be allowed only when there is no other way to service development.

D. Elevated Water Storage Tanks: Located outside of street or easement right-of-way on a parcel of land no smaller than 1 acre.

E. Pipeline Depth:

   1. Water Mains shall be designed to meet the following depth requirements:

      a. Minimum four feet of cover.

      b. Top of pipe shall be two feet below any creek, stream or ditch when such is crossed.

F. Fire hydrants shall generally be located at intervals not to exceed 500 feet or as determined by BCWSA. Fire hydrants shall be located within five feet of the nearest property corner, unless otherwise approved.

G. Valves shall be installed at each intersection or connection point, and in no case shall spacing exceed 2,000 linear feet. In addition, valves shall be spaced no greater than 1,000 linear feet within a residential subdivision.
H. Proximity to Sewer Lines:

1. There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenances, which would permit the passage of any sewage or polluted water into the potable supply. No water pipes shall pass through or contact any part of a sewer manhole.

2. Water mains shall maintain a minimum of 10 feet edge-to-edge separation from sewer lines, whether gravity or pressure. In cases where the main cannot be installed within the prescribed easement or right-of-way and maintain 10 feet separation, BCWSA may reduce this distance provided that the water main be placed in a separate trench or undisturbed earth shelf. A minimum of 18-inches of vertical separation between the bottom of the water main and the top of the sewer is required.

3. When neither of these two separation criteria is possible, the water main shall be installed below the sewer with a minimum vertical separation of 18-inches. The water main, when installed below the sewer, shall be encased either in a watertight casing pipe or in concrete with a minimum 6-inch concrete depth to the first joint in each direction. The encasement shall extend 10 feet on both sides of the crossing. Where water mains cross the sewer, the pipe joint adjacent to the pipe crossing the sewer shall be cut to provide maximum separation of the pipe joints from the sewer.

1.05 SERVICE CONNECTIONS

A. All service connections shall be 3/4-inch minimum size with a separate service connection to each lot located at property corners, or as directed by BCWSA.

B. Developer shall install an appropriate backflow prevention device as approved by BCWSA and the Georgia Plumbing Code on all service connections including fire suppression systems.

C. A service connection marker shall be placed at all service connections. The marker shall be a white, 2-inch diameter, PVC pipe with the top 6-inches painted blue. The service connection markers shall stand approximately 4-feet above grade. These markers may not be removed until after final grading is complete and sod is installed. The water meter lid shall not be covered at any time with sod, dirt, or any other landscaping material. The water meter lid shall be left visible at all times.
D. All water meter boxes shall be even with ground surface and any correction fees shall be paid before the Certificate of Occupancy will be issued.

1.06 MATERIALS AND CONSTRUCTION

A. Residential Subdivisions: All water mains 10-inches and larger in diameter shall be constructed of ductile iron pipe. Water mains 8-inches and smaller in diameter may be constructed of ductile iron or C-900 PVC pipe.

B. All water mains in commercial areas, on private easements, or along major county roadways shall be constructed of ductile iron.

C. In locations where the water main may be exposed to non-routine installation conditions, the main shall be constructed using ductile iron pipe. These conditions include, but are not limited to:

1. Where depth of cover is less than four feet or greater than fourteen feet;
2. Where water main is installed under pavement;
3. Where water main crosses over a storm drain pipe;
4. Where water main crosses under a creek or stream;
5. Where water main crosses over or under a sewer main;
6. Along State and County road rights-of-way;
7. Other locations deemed necessary by the BCWSA.

D. Appropriate corrosion control measures shall be designed when using ductile iron pipe.

END OF SUBSECTION
Schedule of Correction Fees

1.01 GENERAL

After conveyance and final acceptance of the local water system to BCWSA, on-site construction activities may require the correction of various water system appurtenances. The costs associated with these corrections shall be the responsibility of the builder/contractor of each lot. BCWSA shall assess the following fees for each occurrence that results in the correction by BCWSA personnel. All assessed fees shall be paid prior to the issuance of the Certificate of Occupancy. It is the builder’s responsibility to coordinate construction activities to avoid or minimize the assessment of these fees.

1.02 CORRECTION FEES

BCWSA shall assess the following correction fees per each instance for the described events:

A. Adjustments or relocations
   1. Raise or lower water meter and/or meter box to grade: $200.00
   2. Raise or lower fire hydrants to manufacturer’s requirement: $500.00
   3. Raise or lower valve boxes to grade: $200.00
   4. Relocation of water meter and meter box: $450.00

B. Replacements
   1. Damaged or broken water meter: $400.00
   2. Damaged or broken meter box: $100.00
   3. Damaged or broken meter box lid: $75.00
   4. Damaged or broken R900 transmitter: $200.00
   5. Damaged, broken, or missing valve maker: $100.00
   6. Damaged, broken, or missing valve box: $75.00
   7. Turn water on or off for home inspection: $50.00

END OF SUBSECTION
Applicable Water Standards

1.01 APPLICABLE STANDARDS

It is intended that the Developer and/or Owner be responsible for the design of adequate water systems as necessary for the development being served. The methods of design and construction shall be governed by the applicable standards listed hereinafter. By reference, the standards are made a part of these specifications and standards.

1. Georgia State Department of Natural Resources (DNR), Environmental Protection Division (EPD), Rules and Regulations for Water Quality Control, Chapter 391-3-6, latest effective date.


3. Soils Survey of Barrow County, Georgia, by the United States Department of Agriculture, Soil Conservation Service, in cooperation with the University of Georgia College of Agriculture, Agriculture Experiment Stations.


7. Occupational Safety and Health Administration (OSHA) regulations, latest editions.

8. Georgia Department of Transportation (DOT) specifications and regulations, latest editions.


10. American Society of Mechanical Engineers (ASME) standards, latest editions.
11. National Electrical Manufacturer’s Association (NEMA) standards, latest editions.

12. American Concrete Institute (ACI) standards, latest editions.


15. Barrow County Unified Development Code, Latest Revision


END OF SECTION
PART 1   GENERAL

1.01   SCOPE

A. Clearing and grubbing includes, but is not limited to, removing from the Project site, trees, stumps, roots, brush, structures, abandoned utilities, trash, debris and all other materials found on or near the surface of the ground in the construction area and understood by generally accepted engineering practice not to be suitable for construction of the type contemplated. Precautionary measures that prevent damage to existing features to remain are part of the Work.

B. Clearing and grubbing operations shall be coordinated with temporary and permanent erosion and sedimentation control procedures.

1.02   QUALITY ASSURANCE

A. The Contractor shall comply with applicable codes, ordinances, rules, regulations and laws of local, municipal, state or federal authorities having jurisdiction over the Project. All required permits of a temporary nature shall be obtained for construction operations by the Contractor.

B. Open burning, if allowed, shall first be permitted by the local authority having jurisdiction. The Contractor shall notify the local fire department and abide by fire department restrictions.

1.03   JOB CONDITIONS

Location of the Work: The area to be cleared and grubbed shall be shown schematically on the Drawings and include all areas designated for construction.

PART 2   PRODUCTS

2.01   EQUIPMENT

The Contractor shall furnish equipment of the type normally used in clearing and grubbing operations including, but not limited to, tractors, trucks, loaders, root rakes and burning equipment.
PART 3  EXECUTION

3.01  SCHEDULING OF CLEARING

A. The Contractor shall clear at each construction site only that length of the right-of-way, permanent or construction easement which would be the equivalent of one month's pipe laying.

B. BCWSA may permit clearing for additional lengths of the pipeline provided that temporary erosion and sedimentation controls are in place and a satisfactory stand of temporary grass is established.

3.02  CLEARING AND GRUBBING

A. Clear and grub along the pipeline route before excavating. Remove all trees, growth, debris, stumps and other objectionable matter. Clear the construction easement or road right-of-way only if necessary.

B. Grubbing shall consist of completely removing roots, stumps, trash and other debris from all graded areas so that topsoil is free of roots and debris. Topsoil is to be left sufficiently clean so that further picking and raking will not be required.

C. All stumps, roots, foundations and planking embedded in the ground shall be removed and disposed of. Piling and butts of utility poles shall be removed to a minimum depth of two feet below the limits of excavation for structures, trenches and roadways or two feet below finish grade, whichever is lower.

D. Landscaping features shall include, but are not necessarily limited to, fences, cultivated trees, cultivated shrubbery, property corners, man-made improvements, subdivision and other signs within the right-of-way and easement. The Contractor shall take extreme care in moving landscape features and promptly re-establishing these features.

E. Surface rocks and boulders shall be grubbed from the soil and removed from the site if not suitable as rip rap.

F. Where tree limbs interfere with utility wires, or where trees to be felled are in close proximity to utility wires, the tree shall be taken down in sections to eliminate the possibility of damage to the utility.

G. All fences adjoining any excavation or embankment that, in the Contractor's opinion, may be damaged or buried, shall be carefully removed, stored and replaced by the contractor. Any fencing that, in BCWEA's opinion, is
significantly damaged shall be replaced by the contractor with new fence material.

H. The Contractor shall exercise special precautions for the protection and preservation of trees, cultivated shrubs, sod, fences, etc. situated within the limits of the construction area but not directly within excavation and/or fill limits. The Contractor shall be held liable for any damage the Contractor's operations have inflicted on such property.

I. The Contractor shall be responsible for all damages to existing improvements resulting from Contractor's operations.

3.03 DISPOSAL OF DEBRIS

The debris resulting from the clearing and grubbing operation shall be hauled to a disposal site secured by the Contractor and shall be disposed of in accordance with all requirements of federal, state, county and municipal regulations. No debris of any kind shall be deposited in any stream or body of water, or in any street or alley. No debris shall be deposited upon any private property except with written consent of the property owner. In no case shall any material or debris be left on the Project, shoveled onto abutting private properties or buried on the Project.

END OF SUBSECTION
PART 1   GENERAL

1.01  SCOPE

A. Submittals and Permits

1. The Developer shall acquire Land Disturbance Permits from the appropriate authority and shall pay any fees for said permits. The Developer shall be responsible for submitting to the appropriate authority sufficient documents such that the authority can acquire approval from the local Soil and Water Conservation District. All fines imposed for improper erosion and sedimentation control shall be paid by the Developer. See the Barrow County Soil Erosion and Sediment Control Ordinance.

2. Land disturbance activity shall not commence until the Land Disturbance Permit is issued.

3. Working drawings shall indicate controls which will ensure that storm water and drainage from the disturbed jobsite areas, which will be denuded, stripped or modified of its naturally existing or artificially established stabilization or protection against erosion, shall pass through some type of filter system before being discharged. These areas shall be kept sufficiently moist to control dust.

B. Basic Principles

1. Temporary and permanent erosion and sedimentation controls include grassing and mulching of disturbed areas and structural barriers at those locations which will ensure that erosion during construction will be maintained within acceptable limits. Acceptable limits are as established by the Georgia Erosion and Sedimentation Control Act of 1975, as amended, Section 402 of the Federal Clean Water Act, and applicable codes, ordinances, rules, regulations and laws of local and municipal authorities having jurisdiction.

2. All erosion and sedimentation control techniques and procedures shall conform to the “Manual for Erosion and Sediment Control in Georgia,” latest edition.

3. Conduct the earthwork and excavation activities in such a manner to fit the topography, soil type and condition.
4. Minimize the disturbed area and the duration of exposure to erosion elements.

5. Stabilize disturbed areas immediately.

6. Safely convey run-off from the site to an outlet such that erosion will not be increased off site.

7. Retain sediment on site that was generated on site.

8. Minimize encroachment upon watercourses.

C. Implementation

1. The erosion and sedimentation control measures shown on the Drawings are minimal requirements. The Contractor’s methods of operation may dictate additional erosion and sedimentation control measures not shown on the Drawings which shall be the Contractor’s responsibility to determine and install said measures. The Contractor’s failure to stabilize disturbed areas immediately following intermediate or final grading may dictate additional erosion and sedimentation control measures not shown on the Drawings which shall be the Contractor’s responsibility to determine and install said measures.

2. The Contractor shall notify BCWSA of any changes and/or additions to the erosion and sedimentation control plan necessary to accommodate the Contractor’s methods of operation.

3. The Contractor shall be solely responsible for control of erosion within the Project site and prevention of sedimentation of any adjacent waterways.

4. The Contractor shall install controls which will ensure that stormwater and drainage from the disturbed area of the Project site shall pass through some type of filter system before being discharged. The filter system must meet the requirements of the Georgia Erosion and Sedimentation Act of 1975 as amended.

D. Temporary Erosion and Sedimentation Control: In general, temporary erosion and sedimentation control procedures shall be directed toward:

1. Preventing soil erosion at the source.
2. Preventing silt and sediment from entering any waterway if soil erosion cannot be prevented.

3. Preventing silt and sediment from migrating downstream in the event it cannot be prevented from entering the waterway.

E. Permanent Erosion Control: Permanent erosion control measures shall be implemented to prevent sedimentation of the waterways and to prevent erosion of the Project site.

1.02 QUALITY ASSURANCE

A. General: Perform all work under this Section in accordance with all pertinent rules and regulations including, but not necessarily limited to, those stated herein and these Specifications.

B. Conflicts: Where provisions of pertinent rules and regulations conflict with these Specifications, the more stringent provisions shall govern.

PART 2 PRODUCTS

2.01 TEMPORARY EROSION AND SEDIMENTATION CONTROL MATERIALS

A. Sediment Barriers

1. Silt Fence

   a. Type A silt fence shall meet the requirements of Section 171 of the Georgia Department of Transportation Standard Specifications, latest edition.

   b. Type C silt fence is a combination of Type A silt fence fabric with woven wire reinforcement. Type C silt fence woven wire reinforcement shall meet the requirements of Section 171 of the Georgia Department of Transportation Standard Specifications, latest edition.

2. Hay or Straw Bales
   a. Hay or straw bales shall be clean, seed-free cereal hay or straw, rectangular in shape, wire or nylon bound, and contain five cubic feet or more of material.
   b. Stakes shall be steel re-enforcement bars, steel pickets or 2" x 2" wooden stakes.

B. Inlet Sediment Traps

1. Filter Fabric with Supporting Frame: Type C Silt Fence supported by steel posts shall be used. See Silt Fence this Part.

2. Baffle Box:
   a. Shall be constructed of 2" x 4" boards spaced a maximum of 1 inch apart or of plywood with weep holes 2 inches in diameter.
   b. Gravel: 1/2 to 3/4 inch gravel (#57 washed stone).
   c. Type C filter fabric wrapping: See Silt Fence this Part.

3. Block and Gravel Drop Inlet Protection
   a. Concrete Masonry Block.
   b. Gravel: 1/2 to 3/4 inch gravel (#57 washed stone).
   c. Hardware cloth or comparable wire mesh with 1/2 inch openings.

4. Excavated Inlet Sediment Trap
   a. A minimum depth of 1.5 feet for sediment storage should be provided.
   b. Side slopes shall not be steeper than 2:1.

5. Gravel Drop Inlet Protection
   a. Gravel: 1/2 to 3/4 inch gravel (#57 washed stone)
6. Curb Inlet Protection


b. Gravel bags constructed by wrapping DOT #57 stone with filter fabric, wire, plastic mesh, or equivalent material.

2.02 RIP RAP

A. Stone Rip Rap: Use sound, tough, durable stones resistant to the action of air and water. Slabby or shaley pieces will not be acceptable. Sizes shall be shown in the Drawings for each design requiring rip rap construction. The following classifications shall be used in the construction of slope or channels:

1. Graded rip rap - durable, dense, specifically selected and graded, quarried stone, placed to prevent erosion. Sizes shall be in accordance to National Stone Association (N.S.A.) classification (Table C-1 of Appendix C of the Manual for Erosion and Sediment Control in Georgia, latest edition) or the Department of Transportation (D.O.T.) classification system (Table C-3 of Appendix C of the Manual for Erosion and Sediment Control in Georgia, latest edition).

2. Filter Bedding Stone - stone generally less than 6 inches in size, that may be placed under graded rip rap stone in a layer or combination of layers, designed and installed in such a manner as to prevent loss of underlying soil or finer materials because of moving water. Sizes shall be in accordance to National Stone Association (N.S.A.) classification (Table C-2 of Appendix C of the Manual for Erosion and Sediment Control in Georgia, latest edition) or the Department of Transportation (D.O.T.) classification system (Table C-4 of Appendix C of the Manual for Erosion and Sediment Control in Georgia, latest edition).

3. Surge Stone - a quarry run ungraded, unscreened material which may or may not have fines.

2.03 EROSION CONTROL MATTING AND BLANKETS

A. All blanket and matting materials shall be on the Georgia Department of Transportation Qualified Products List (QPL #62 for blankets, QPL #49 for matting).
B. Temporary Erosion Control Blankets: Use in concentrated flow areas, all slopes steeper than 3:1 and with a height of ten feet or greater, and cuts and fills within stream buffers, shall be stabilized with the appropriate erosion control matting or blankets.

1. Straw blankets: Shall consist of weed-free straw from agricultural crops formed into a blanket. Blankets shall have a top side of photodegradable plastic mesh with a maximum mesh size of 5/16 x 5/16 inch sewn to the straw with biodegradable thread that is appropriate for slopes. The blanket shall have a minimum thickness of 3/8 inch and minimum dry weight of 0.5 pounds per square yard.

2. Excelsior blankets: Shall consist of curled wood excelsior (80% of fibers are six inches or longer) formed into a blanket. The blanket shall have clear markings indicating the top side of the blanket and be smolder resistant. Blankets shall have photodegradable plastic mesh having a maximum mesh size of 1 1/2 x 3 inches. The blanket shall have a minimum thickness of 1/4 of an inch and a minimum dry weight of 0.8 pounds per square yard. Slopes require excelsior matting with the top side of the blanket covered in the plastic mesh, and for waterways, both sides of the blanket require plastic mesh.

3. Coconut fiber blankets: Shall consist of 100% coconut fiber formed into a blanket. The minimum thickness of the blanket shall be 1/4 of an inch with a minimum dry weight of 0.5 pounds per square yard. Blankets shall have photodegradable plastic mesh, with a maximum mesh size of 5/8 x 5/8 inch and sewn to the fiber with a breakdown resistant synthetic yarn. Plastic mesh is required on both sides of the blanket if used in waterways. A maximum of two inches is allowable for the stitch pattern and row spacing.

4. Wood fiber blankets: Shall consist of reprocessed wood fibers that does not possess or contain any growth or germination inhibiting factors. The blanket shall have a photodegradable plastic mesh, with a maximum mesh size of 5/8 x 3/4 inch, securely bonded to the top of the mat. The blanket shall have a minimum dry weight of 0.35 pounds per square yard. A maximum of two inches is allowable for the stitch pattern and row spacing. This practice shall be applied only to slopes.

5. Jute Mesh: To be applied to slopes. Jute mesh with a 48 inch width shall show between 76 and 80 warpings and a one yard length shall show between 39 to 43 weftings. The woven mesh shall be at least 45 inches wide. Yarn shall have a unit weight of at
least 0.9 pounds per square yard, but not more than 1.5 pounds per square yard.

C. Permanent Erosion Control Blankets: Use in concentrated flow areas, all slopes steeper than 3:1 and with a height of ten feet or greater, and cuts and fills within stream buffers, shall be stabilized with the appropriate erosion control matting or blankets.

1. Permanent matting shall consist of a lofty web of mechanically or melt bonded polymer nettings, monofilaments or fibers which are entangled to form a strong and dimensionally stable matrix. Polymer welding, thermal or polymer fusion, or the placement of fibers between two high strength, bi-axially oriented nets bound securely together by parallel lock stitching with polyolefin, nylon or polyester threads are all appropriate bonding methods. Mats shall maintain their shape before, during, and after installation, under dry or water saturated conditions. Mats must be stabilized against ultraviolet degradation and shall be inert to chemicals normally encountered in a natural soil environment.

2. The mat shall conform to the following physical properties:

<table>
<thead>
<tr>
<th>Property</th>
<th>Minimum Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness</td>
<td>0.5 inch</td>
</tr>
<tr>
<td>Weight</td>
<td>0.6 PSY</td>
</tr>
<tr>
<td>Roll Width</td>
<td>38 inches</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td></td>
</tr>
<tr>
<td>Length (50% elongation)</td>
<td>15 lbs./in.</td>
</tr>
<tr>
<td>Length (ultimate)</td>
<td>20 lbs./in.</td>
</tr>
<tr>
<td>Width (50% elongation)</td>
<td>5 lbs./in.</td>
</tr>
<tr>
<td>Width (ultimate)</td>
<td>10 lbs./in.</td>
</tr>
<tr>
<td>(ASTM D 1682-6” strip)</td>
<td></td>
</tr>
<tr>
<td>Ultraviolet Stability</td>
<td>80%</td>
</tr>
<tr>
<td>(1,000 hrs. in an Atlas ARC Weatherometer, ASTM G 23, Type D in accordance with ASTM D 822)</td>
<td></td>
</tr>
</tbody>
</table>

D. Stapling and Anchoring Materials

1. Temporary Blankets: Staples shall be used to anchor temporary blankets. U-shaped wire (11 gauge or greater) staples with legs at least 6 inches in length and a crown of one inch or appropriate biodegradable staples can be used. Staples shall be of sufficient thickness for soil penetration without undue distortion.
2. Permanent Matting: Sound wood stakes, 1 inch x 3 inches stock sawn in a triangular shape, shall be used. Depending on the compaction of the soil, select stakes with a length from 12 to 18 inches. U-shaped staples shall be 11 gauge steel or greater, with legs at a minimum of 8 inches length with a 2 inch crown.

2.04 TEMPORARY MULCHING

A. Dry straw or hay: Shall be applied at a depth of 2 to 4 inches providing complete soil coverage. Material shall be clean, seed-free cereal hay or straw.

B. Wood waste (chips, sawdust or bark): Shall be applied at a depth of 2 to 3 inches. Organic material from the clearing stage of development should remain on site, be chipped, and applied as mulch.

C. Mulch Binder: Mulch on slopes exceeding 3 (horizontal) to 1 (vertical) shall be held in place by the use of a mulch binder, as approved by the Engineer. The mulch binder shall be non toxic to plant and animal life and shall be approved by the Engineer.

2.05 TEMPORARY GRASSING

A. Grassing materials shall meet the requirements of the Manual for Erosion and Sediment Control in Georgia, latest edition, Chapter 6, Section 2, “Disturbed Area Stabilization (With Temporary Seeding)”.

B. Seed rate, fertilization, lime application and other requirements shall be per manufacturer’s instructions.

C. Water shall be free of excess and harmful chemicals, organisms and substances which may be harmful to plant growth or obnoxious to traffic. Salt or brackish water shall not be used. Water shall be furnished by the Contractor.

PART 3 EXECUTION

3.01 GENERAL

A. Temporary and permanent erosion and sedimentation control measures shall prevent erosion and prevent sediment from exiting the site. If, in the opinion of the Engineer, the Contractor’s temporary erosion and sedimentation control measures are inadequate, the Contractor shall provide
additional maintenance for existing measures or additional devices to control erosion and sedimentation on the site.

B. All erosion and sedimentation control devices and structures shall be inspected by the Qualified Personnel at least once a week and within 24 hours of the end of a storm that is 0.5 inches or greater. Any device or structure found to be damaged will be repaired or replaced by the end of the day.

C. All erosion and sedimentation control measures and devices shall be constructed and maintained until adequate permanent disturbed area stabilization has been provided per local standards. Once adequate permanent stabilization has been provided and accepted by the local authority, all temporary erosion and sedimentation control structures and devices shall be removed.

3.02 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Temporary erosion and sedimentation control procedures should be initially directed toward preventing silt and sediment from entering the creeks. The preferred method is to provide an undisturbed natural buffer, extending a minimal 25 feet from the top of the bank, to filter the run-off.

B. Silt dams, silt fences, traps, barriers, check dams, appurtenances and other temporary measures and devices shall be installed as indicated on the approved plans and working drawings, shall be maintained until no longer needed, and shall then be removed. Deteriorated hay bales and dislodged filter stone shall be replaced with new materials. Detention ponds, if constructed, shall be maintained in a condition ensuring that unfiltered water will not leave the pond.

C. Where permanent grassing is not appropriate, and where the Contractor's temporary erosion and sedimentation control practices is inadequate, the County may direct the Contractor to provide temporary vegetative cover with fast growing seedings. Such temporary vegetative cover shall be provided by the Contractor in compliance with the Manual for Erosion and Sedimentation Control in Georgia, specifically in the selection of species, planting dates and application rates for seedings, fertilizer and mulching, with the exception that kudzu shall not be permitted.

D. All erosion and sedimentation control devices, including check dams, shall be inspected by the Contractor at least weekly and after each rainfall occurrence and cleaned out and repaired by the Contractor as necessary.
E. Temporary erosion and sedimentation control devices shall be installed and maintained from the initial land disturbance activity until the satisfactory completion and establishment of permanent erosion control measures. At that time, temporary devices shall be removed.

3.03 PERMANENT EROSION CONTROL

A. Permanent erosion control shall include:

1. Restoring the work site to its original contours, unless shown otherwise on the approved Drawings.

2. Permanent vegetative cover shall be performed in accordance with Article 3.04 of this Section.

3. Permanent stabilization of steep slopes and creeks shall be performed in accordance with Article 3.05 of this Section.

B. Permanent erosion control measures shall be implemented as soon as practical after the completion of pipe installation or land disturbance for each segment of the Project. In no event shall implementation be postponed when no further construction activities will impact that portion or segment of the Project.

3.04 PERMANENT GRASSING

A. General

1. All references to grassing, unless noted otherwise, shall relate to establishing permanent vegetative cover as specified herein for seeding, fertilizing, mulching, etc.

2. When final grade has been established, all bare soil, unless otherwise required by the Contract Documents, shall be seeded, fertilized and mulched in an effort to restore to a protected condition. Critical areas shall be sodded.

3. Specified permanent grassing shall be performed at the first appropriate season following establishment of final grading in each section of the site.

4. Permanent grassing shall be of a perennial species.

5. Permanent grassing shall be inspected for acceptable cover, which is a viable stand of grass that covers at least 98% of the total area with no
bare spots exceeding one square foot and the ground surface is fully stabilized against erosion.

B. Replant grass removed or damaged in residential areas using the same variety of grass and at the first appropriate season. Where sod is removed or damaged, replant such areas using sod of the same species of grass at the first appropriate season. Outside of residential or landscaped areas, grass the entire area disturbed by the work on completion of work in any area. In all areas, promptly establish successful stands of grass.

C. Grassing activities shall comply with the Manual for Erosion and Sediment Control in Georgia, specifically for the selection of species; with the exception that kudzu shall not be permitted, planting dates and application rates for seeding, fertilizer and mulching. Where permanent vegetative cover (grassing) cannot be immediately established (due to season or other circumstances) the Contractor shall provide temporary vegetative cover. The Contractor must return to the site (at the appropriate season) to install permanent vegetation in areas that have received temporary vegetative cover.

3.05 RIP RAP

A. Rip rap shall be placed where banks of streams or drainage ditches are disturbed by excavation, or at all points where natural vegetation is removed from banks of the streams or drainage ditches. Carefully compact backfill and place rip rap to prevent subsequent settlement and erosion. This requirement applies equally to construction along side a stream or drainage ditch as well as crossing a stream or drainage ditch.

B. When trenching across a creek, place rip rap a distance of 10 feet upstream and 10 feet downstream from the top of the trench excavation. Place rip rap across creek bottom, across creek banks and extend rip rap placement five feet beyond the top of each creek bank.

C. Preparation of Foundations: The ground surface upon which the rip rap is to be placed shall be brought in reasonably close conformity to the correct lines and grades before placement is commenced. Where filling of depressions is required, the new material shall be compacted with hand or mechanical tampers. Unless at creek banks or otherwise shown or specified, rip rap shall begin in a toe ditch constructed in original ground around the toe of the fill or the cut slope. The toe ditch shall be two feet deep in original ground, and the side next to the fill or cut shall have that same slope. After the rip rap is placed, the toe ditch shall be backfilled and the excess dirt spread neatly within the construction easement.
D. Placement of Filter Fabric: The surface to receive fabric shall be prepared to a relatively smooth condition free from obstructions, depressions and debris. The fabric shall be placed with the long dimension running up the slope and shall be placed to provide a minimum number of overlaps. The strips shall be placed to provide a minimum width of one foot of overlap for each joint. The filter fabric shall be anchored in place with securing pins of the type recommended by the fabric manufacturer. Pins shall be placed on or within 3-inches of the centerline of the overlap. The fabric shall be placed so that the upstream strip overlaps the downstream strip. The fabric shall be placed loosely so as to give and therefore avoid stretching and tearing during placement of the stones. The stones shall be dropped no more than three feet during construction. The fabric shall be protected at all times during construction from clogging due to clay, silts, chemicals or other contaminants.

E. Placement of Rip Rap: The rip rap shall be placed on a 6-inch layer of soil, crushed stone or sand overlaying the filter fabric. This 6-inch layer shall be placed to maximize the contact between the soil beneath the filter fabric and the filter fabric. Rip rap shall be placed with its top elevation conforming with the finished grade or the natural slope of the stream bank and stream bottom.

1. Stone Rip Rap: Stone rip rap shall be dumped into place to form a uniform surface and to the thickness specified on the Drawings. The thickness tolerance for the course shall be -6-inches and +12-inches.

3.06 CLEAN-UP

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

B. All temporary erosion control measures shall be removed after final stabilization of the site has occurred, unless otherwise noted on the Drawings or instructed by the Engineer.

END OF SUBSECTION
Bore and Jack Casings

PART 1 GENERAL

1.01 SCOPE

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.

1.02 CONTRACTOR EXPERIENCE

A. Boring and jacking casings is deemed to be specialty contractor work. If the Contractor elects to perform the work, the Contractor shall provide evidence of successful casing installations. A minimum of five continuous years of experience in steel casing construction is required of the casing installer.

B. The filling of the void between the casing wall and carrier pipe is deemed to be specialty contractor work. If the Contractor elects to perform this work, the Contractor shall provide evidence of successful performance of void filling operations.

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 thickness. Actual thickness 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.

3. The diameters of casing shown in paragraph B. below are minimum. Larger casings, with BCWSA’s approval, may be installed, for
whatever reasons the Contractor may decide, whether casing size availability, line and grade tolerances, soil conditions, etc.

4. In the event that casing is need for a crossing other than crossing a railroad or highway, the minimum casing shall correspond with the information listed on the table for crossing under highways.

B. Casing Sizes

<table>
<thead>
<tr>
<th>Pipe Diameter, inches</th>
<th>UNDER RAILROADS</th>
<th>UNDER HIGHWAYS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Casing Diameter, inches</td>
<td>Casing Wall Thickness, inches</td>
</tr>
<tr>
<td>6</td>
<td>14</td>
<td>0.250</td>
</tr>
<tr>
<td>8</td>
<td>18</td>
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<td>30</td>
<td>0.469</td>
</tr>
<tr>
<td>20</td>
<td>32</td>
<td>0.501</td>
</tr>
<tr>
<td>24</td>
<td>36</td>
<td>0.532</td>
</tr>
</tbody>
</table>

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-inch 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. Grout: Grout may be used for filling the void between the casing pipe and the carrier pipe. Cement shall conform to ASTM C 150, Type I or Type II.
Grout shall have a minimum compressive strength of 100 psi attained within 24 hours.

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 that meets industry standards.

PART 3 EXECUTION

3.01 GENERAL

A. Interpretation of soil investigation reports and data, investigating the site and determination of the site soil conditions is the sole responsibility of the Contractor. Any subsurface investigation by the Contractor must be approved by the appropriate authority having jurisdiction over the site.

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.

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 is the responsibility of the Contractor. The excavation method selected shall be compatible with expected ground conditions.
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 not to interfere with the safe operation of the roadway.

6. The Contractor shall be responsible for obtaining a blasting permit in a timely manner.

F. Railroad Crossings

1. The Contractor shall secure permission from the Railroad to schedule work so as not to interfere with the operation of the Railroad.

2. All work on the Railroad right-of-way, including necessary support of tracks, safety of operations and other standard and incidental operation procedures may be under the supervision of the appropriate authorized representative of the Railroad affected and any decisions of this representative pertaining to construction and/or operations shall be final and construction must be governed by such decisions.

3. If, in the opinion of the Railroad, it becomes necessary to provide flagging protection, watchmen or the performance of any other work in order to keep the tracks safe for traffic, the Contractor shall coordinate such work and shall reimburse the Railroad, in cash, for such services, in accordance with accounting procedures agreed on by the Contractor and affected Railroad before construction is started.
4. No blasting shall be permitted within the Railroad right-of-way.

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, 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.

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. 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 be 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. 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 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 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.

3.05 BORING AND JACKING

A. Shaft

1. Conduct boring and jacking operations from a shaft excavated at one end of the section to be bored. Place the shaft on the downstream end of the bore where conditions and accessibility are suitable.

2. The shaft 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 loading 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 shall be firm and unyielding to form an adequate foundation upon which to work. In the event the shaft bottom is not stable, excavate to such additional depth as required and place a gravel sub-base or a concrete sub-base if required due to soil conditions.

B. Jacking Rails and Frame

1. Set jacking rails to proper line and grade within the shaft. Secure rails in place to prevent settlement or movement during operations. The
2. Place backing between the heels of jacking rails and the rear of the shaft. 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 wet boring.

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. For casing pipe installations over 100 feet in length, the auger shall be removed and the alignment and grade checked at minimum intervals of 60 feet.

H. Any casing pipe damaged in jacking operations shall be repaired, or removed and replaced at 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.

O. All surplus material shall be removed from the right-of-way and the excavation finished flush with the surrounding ground.

P. Grout backfill shall be used for unused holes or abandoned pipes.

Q. Any replacement of carrier pipe in an existing casing shall be considered a new installation, subject to the applicable requirements of these Specifications.

3.06  FREE BORING

A. Where a pipeline is approved by jurisdictional authorities to be installed by boring without casing, the Contractor shall construct the crossing by the free bore method. The free bore method shall be accomplished by the dry auger boring method without jetting, sluicing, or wet boring.

B. The diameter of the free bore shall not exceed the pipe bell outside diameter or the pipe barrel outside diameter plus 1-inch, whichever is greater.

C. Free boring, where approved by jurisdictional authorities, is to be performed at the Contractor's option. The Contractor may choose to construct the crossing by the conventional bore and jack casing methodology.

D. The Contractor shall be responsible for any settlement of the roadway caused by the free bore construction activities.
E. If the Contractor elects to free bore, and an acceptable installation does not result for any reason, the Contractor shall install a casing pipe by the bore and jack method.

3.07 VENTILATION AND AIR QUALITY

Provide, operate and maintain for the duration of casing project a ventilation system to meet safety and OSHA requirements.

3.08 ROCK EXCAVATION

A. In the event that rock is encountered during the installation of the casing pipe which cannot be removed through the casing, the Contractor may complete the crossing by a method established in a change order.

B. At the Contractor’s option, the Contractor may continue to install the casing and remove the rock through the casing.

3.09 INSTALLATION OF CARRIER PIPE

A. Check the alignment and grade of the casing and prepare a plan to set the carrier pipe at proper alignment, grade and elevation, without any sags or high spots.

B. The carrier pipe shall be held in the casing pipe by one of the following methods:

1. The carrier pipe shall be held in the casing pipe by the use of hardwood blocks spaced radially around the pipe and secured together so that they remain firmly in place. The spacing of such blocks longitudinally in the casing pipe shall not be greater than 10 feet.

2. The 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 two casing spacers per nominal length of pipe. Casing spacers shall be attached to the pipe at maximum 18 to 20 foot intervals. Casing spacers shall also be provided within two feet of each end of the casing.

C. Close the ends of the casing with 4-inch brick walls.

3.10 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 not to endanger or damage either new or existing structures, private or public properties and also to avoid cave-ins or sliding in the banks.

END OF SUBSECTION
PART 1  GENERAL

1.01  SCOPE

A. The work under this Section consists of furnishing all labor, equipment and materials and performing all operations in connection with the trench excavation and backfill required to install the pipelines as specified.

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

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

D. The pipe zone area of the trench is divided into five specific areas:

1. Foundation: The area beneath the bedding, sometimes also referenced to as trench stabilization.

2. Bedding: The area above the trench bottom (or foundation) and below the bottom of the barrel of the pipe.

3. Haunching: The area above the bottom of the barrel of the pipe up to a specified height above the bottom of the barrel of the pipe.

4. Initial Backfill: The area above the haunching material and below a plane 18-inches above the top of the barrel of the pipe.

5. Final Backfill: The area above a plane 18-inches above the top of the barrel of the pipe.

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

A. Density: All references to “maximum dry density” shall mean the maximum dry density defined by the “Maximum Density-Optimum Moisture Test”, ASTM D 698. Determination of the density of foundation, bedding, haunching, or backfill materials in place shall meet with the requirements of ASTM D 1556, “Density of Soil In Place by the Sand Cone Method”, ASTM D 2937, “Density of Soil In Place by the Drive-Cylinder Method” or ASTM D 2922, “Density of Soil and Soil-Aggregate In Place by Nuclear Methods (Shallow Depth)”.  

B. Sources and Evaluation Testing: Testing of materials to certify conformance with the Specification requirements shall be performed by an independent testing laboratory. The Contractor’s testing laboratory shall perform tests upon change of source and at sufficient intervals during the work to certify conformance of all select material furnished for use on the Project.

1.03 SAFETY

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

PART 2 PRODUCTS

2.01 TRENCH FOUNDATION MATERIALS

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

2.02 BEDDING AND HAUNCHING MATERIALS

A. Bedding and haunching materials shall be crushed stone as specified below.

B. Crushed stone utilized for bedding and haunching shall meet the requirements of the Georgia Department of Transportation Specification 800.01, Group I (limestone, marble or dolomite) or Group II (quartzite, granite or gneiss). Stone size shall be between No. 57 and No. 4, inclusive.
C. Earth materials utilized for bedding and haunching shall be suitable materials selected from materials excavated from the trench. Suitable materials shall be clean and free of rock larger than 2-inches at its largest dimension, organics, cinders, stumps, limbs, frozen earth or mud, man-made wastes and other unsuitable materials. Should the material excavated from the trench be saturated, the saturated material may be used as earth material, provided it is allowed to dry properly and it is capable of meeting the specified compaction requirements. When necessary, earth bedding and haunching materials shall be moistened to facilitate compaction by tamping. If materials excavated from the trench are not suitable for use as bedding or haunching material, provide select material conforming to the requirements of this Section at no additional cost to the Owner.

2.03 INITIAL BACKFILL

A. Initial backfill material shall be crushed stone or earth materials as specified for bedding and haunching materials.

B. Earth materials utilized for initial backfill shall be suitable materials selected from materials excavated from the trench. Suitable materials shall be clean and free of rock larger than 2-inches at its largest dimension, organics, cinders, stumps, limbs, frozen earth or mud, man-made wastes and other unsuitable materials. Should the material excavated from the trench be saturated, the saturated material may be used as earth material, provided it is allowed to dry properly and it is capable of meeting the specified compaction requirements. When necessary, initial backfill materials shall be moistened to facilitate compaction by tamping. If materials excavated from the trench are not suitable for use as initial backfill material, provide select material conforming to the requirements of this Section.

2.04 FINAL BACKFILL

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

2.05 SELECT BACKFILL

Select backfill shall be materials which meet the requirements as specified for bedding, haunching, initial backfill or final backfill materials, including compaction requirements.
2.06 CONCRETE

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

PART 3 EXECUTION

3.01 TRENCH EXCAVATION

A. Topsoil and grass shall be stripped a minimum of 6-inches over the trench excavation site and stockpiled separately for replacement over the finished grading areas.

B. Trenches shall be excavated to the required lines and grades with the centerlines of the trenches on the centerlines of the pipes and to the dimensions which provide the proper support and protection of the pipe and other structures and accessories.

C. Width

1. The sides of all trenches shall be vertical to a minimum of one foot above the top of the pipe. The maximum trench width shall be equal to the sum of the outside diameter of the pipe plus two feet. The minimum trench width shall be that which allows the proper consolidation of the haunching and initial backfill material.

2. Excavate the top portion of the trench to any width within the construction easement or right-of-way which will not cause unnecessary damage to adjoining structures, roadways, pavement, utilities, trees or private property. Where necessary to accomplish this, provide sheeting and shoring.

3. Where rock is encountered in trenches, excavate to remove boulders and stones to provide a minimum of 9-inches clearance between the rock and any part of the pipe barrel or manhole.

4. Wherever the prescribed maximum trench width is exceeded, the Contractor shall use the next higher class (load factor) of bedding and haunching for the full trench width as actually cut, at no additional cost to the Owner. The minimum higher class shall be Type 4.
D. Depth

1. The trenches shall be excavated to the required depth or elevation which allow for the placement of the pipe and bedding to the thickness required for proper support.

2. Water Mains
   
a. Excavate trenches to provide a minimum of four feet cover measured from the top of the pipe to the ground surface. Within the right-of-way of highways, streets or roadways, also excavate to place the top of the pipe a minimum of four feet below the nearest pavement edge.
   
b. Increase the depth of cover, as measured from the top of pipe, where necessary to avoid interference with underground utilities and obstructions.

3. Where rock is encountered in trenches, excavate to the minimum depth which will provide clearance below the pipe barrel of 8-inches for pipe 21-inches in diameter and smaller and 12-inches for larger pipe, valves and manholes. Remove boulders and stones to provide a minimum of 6-inches clearance between the rock and any part of the pipe, manhole or accessory.

E. Excavated Materials

1. Excavated materials shall be placed adjacent to the work to be used for backfilling as required. Topsoil shall be carefully separated and lastly placed in its original location.

2. Excavated material shall be placed sufficiently back from the edge of the excavation to prevent caving of the trench wall, to permit safe access along the trench and not cause any drainage problems. Excavated material shall be placed so as not to damage existing landscape features or man-made improvements.

3.02 SHEETING, BRACING AND SHORING

A. Sheeting, bracing and shoring shall be performed in the following instances:

1. Where sloping of the trench walls does not adequately protect persons within the trench from slides or cave-ins.
2. In caving ground.

3. In wet, saturated, flowing or otherwise unstable materials. The sides of all trenches and excavations shall be adequately sheeted, braced and shored.

4. Where necessary to prevent damage to adjoining buildings, structures, roadways, pavement, utilities, trees or private properties which are required to remain.

5. Where necessary to maintain the top of the trench within the available construction easement or right-of-way.

6. Sheet shall be steel sheeting.

B. In all cases, excavation protection shall strictly conform to the requirements of the Occupational Safety and Health Act of 1970, as amended.

C. Timber: Timber for shoring, sheeting, or bracing shall be sound and free of large or loose knots and in good, serviceable condition. Size and spacing shall be in accordance with OSHA regulations.

D. Trench Shield: A trench shield or box may be used to support the trench walls. The use of a trench shield does not necessarily preclude the additional use of bracing and sheeting. When trench shields are used, care must be taken to avoid disturbing the alignment and grade of the pipe or disrupting the haunching of the pipe as the shield is moved. When the bottom of the trench shield extends below the top of the pipe, the trench shield will be raised in 6-inch increments with specified backfilling occurring simultaneously. At no time shall the trench shield be “dragged” with the bottom of the shield extending below the top of the pipe.

E. Remove bracing and sheeting in units when backfill reaches the point necessary to protect the pipe and adjacent property. Leave sheeting in place when it cannot be safely removed. Cut off any sheeting left in place at least two feet below the surface.

3.03 ROCK EXCAVATION

A. Definition of Rock: Any material which cannot be excavated with conventional excavating equipment, and is removed by drilling and blasting, and occupies an original volume of at least one-half cubic yard.

B. Blasting: Provide licensed, experienced workmen to perform blasting. Conduct blasting operations in accordance with all existing ordinances and
regulations. Protect all buildings and structures from the effects of the blast. Repair any resulting damage.

C. Removal of Rock: Dispose of rock off site that is surplus or not suitable for use as rip rap or backfill.

D. The Contractor shall notify BCWSA prior to any blasting. Additionally, the Contractor shall notify BCWSA before any charge is set.

E. Following review by BCWSA regarding the proximity of permanent buildings and structures to the blasting site, BCWSA may direct the Contractor to employ an independent, qualified specialty sub-contractor, approved by BCWSA, to monitor the blasting by use of seismograph, identify the areas where light charges must be used, conduct pre-blast and post-blast inspections of structures, including photographs or videos, and maintain a detailed written log.

3.04 DEWATERING EXCAVATIONS

A. Dewater excavation continuously to maintain a water level two feet below the bottom of the trench.

B. Control drainage in the vicinity of excavation so the ground surface is properly pitched to prevent water running into the excavation.

C. There shall be sufficient pumping equipment, in good working order, available at all times, to remove any water that accumulates in excavations. Where the pipe line crosses natural drainage channels, the work shall be conducted in such a manner that unnecessary damage or delays in the prosecution of the work will be prevented. Provision shall be made for the satisfactory disposal of surface water to prevent damage to public or private property.

D. In all cases, accumulated water in the trench shall be removed before placing bedding or haunching, laying pipe, placing concrete or backfilling.

E. Where dewatering is performed by pumping the water from a sump, crushed stone shall be used as the medium for conducting the water to the sump. Sump depth shall be at least two feet below the bottom of the trench. Pumping equipment shall be of sufficient quantity and/or capacity to maintain the water level in the sump two feet below the bottom of the trench. Pumps shall be a type such that intermittent flows can be discharged. A standby pump shall be required in the event the operating pump or pumps clog or otherwise stop operation.
F. Dewater by use of a well point system when pumping from sumps does not lower the water level two feet below the trench bottom. Where soil conditions dictate, the Contractor shall construct well points cased in sand wicks. The casing, 6 to 10-inches in diameter, shall be jetted into the ground, followed by the installation of the well point, filling casing with sand and withdrawing the casing.

3.05 TRENCH FOUNDATION AND STABILIZATION

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

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

C. Should the undisturbed material encountered at the trench bottom constitute, an unstable foundation for the pipe, the Contractor shall be required to remove such unstable material and fill the trench to the proper subgrade with crushed stone.

D. Where trench stabilization is provided, the trench stabilization material shall be compacted to at least 90 percent of the maximum dry density, unless shown or specified otherwise.

3.06 BEDDING AND HAUNCHING

A. Bedding material shall be placed to provide uniform support along the bottom of the pipe and to place and maintain the pipe at the proper elevation. The initial layer of bedding placed to receive the pipe shall be brought to the grade and dimensions indicated on Barrow County Water and Sewerage Authority Standard Details, and the pipe shall be placed thereon and brought to grade by tamping the bedding material or by removal of the slight excess amount of the bedding material under the pipe. Adjustment to grade line shall be made by scraping away or filling with bedding material. Wedging or blocking up of pipe shall not be permitted. Applying pressure to the top of the pipe, such as with a backhoe bucket, to lower the pipe to the proper elevation or grade shall not be permitted. Each pipe section shall have a uniform bearing on the bedding for the length of the pipe, except immediately at the joint. All bedding shall extend the full width of the trench bottom. Prior to placement of bedding material, the trench bottom shall be free of any water, loose rocks, boulders or large dirt clods.
B. At each joint, excavate bell holes of ample depth and width to permit the joint to be assembled properly and to relieve the pipe bell of any load.

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

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

E. Water Mains

1. Ductile Iron Pipe
   
a. Utilize earth materials for bedding and haunching. Type 2, 3, 4 and 5 bedding shall be as detailed on the BCWSA Standard Drawings.

b. For push-on joint pipe, bedding shall be at a minimum Type 2 Pipe Bedding. If laying conditions dictate, Type 3, 4, or 5 bedding shall be used per manufacturer’s recommendations based on depth of cover.

c. Restrained joint pipe and fittings bedding shall meet the requirements for Type 3 Pipe Bedding. If laying conditions dictate, Type 4, or 5 bedding shall be used.

d. Type 4 or Type 5 Pipe Bedding shall utilize crushed stone bedding and haunching material.

2. Polyvinyl Chloride Pipe
   
a. Utilize earth materials for bedding and haunching.

b. Bedding and haunching shall meet the requirements for Type 2 Pipe Bedding, as detailed on the BCWSA Standard Drawings.

F. Excessive Width and Depth
1. If the trench is excavated to excess width, provide the next higher type or class of pipe bedding, but a minimum of Type 4, as detailed on the BCWSA Standard Drawings.

2. If the trench is excavated to excessive depth, provide crushed stone to place the bedding at the proper elevation or grade.

G. Compaction: Bedding and haunching materials under pipe, manholes and accessories shall be compacted to a minimum of 90 percent of the maximum dry density, unless shown or specified otherwise.

3.07 INITIAL BACKFILL

A. Initial backfill shall be placed to anchor the pipe, protect the pipe from damage by subsequent backfill and ensure the uniform distribution of the loads over the top of the pipe.

B. Place initial backfill material carefully around the pipe in uniform layers to a depth of at least 18-inches above the pipe barrel. Layer depths shall be a maximum of 6-inches for pipe 18-inches in diameter and smaller and a maximum of 12-inches for pipe larger than 18-inches in diameter.

C. Backfill on both sides of the pipe simultaneously to prevent side pressures.

D. Compact each layer thoroughly with suitable hand tools or tamping equipment.

E. Initial backfill shall be compacted to a minimum 90 percent of the maximum dry density.

F. If materials excavated from the trench are not suitable for use as backfill materials, provide select backfill material conforming to the requirements of this Section.

3.08 CONCRETE ENCASEMENT

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

B. For pipes under structures, provide concrete backfill.
3.09  FINAL BACKFILL

A. Backfill carefully to restore the ground surface to its original condition.

B. The top 6-inches shall be topsoil obtained as specified in Article 3.01 of this Section.

C. Excavated material which is unsuitable for back filling, and excess material, shall be disposed of. Surplus soil may be neatly distributed and spread over the site if approved by BCWSA. If such spreading is allowed, the site shall be left in a clean and sightly condition and shall not affect pre-construction drainage patterns. Surplus rock from the trenching operations shall be removed from the site.

D. If materials excavated from the trench are not suitable for use as backfill materials, provide select backfill material conforming to the requirements of this Section.

E. After initial backfill material has been placed and compacted, backfill with final backfill material. Place backfill material in uniform layers, compacting each layer thoroughly as follows:

1. In 6-inch layers, if using light power tamping equipment, such as a “jumping jack.”

2. In 12-inch layers, if using heavy tamping equipment, such as hammer with tamping feet.

3. In 24-inch layers, if using a hydra-hammer.

F. Settlement: If trench settles, re-fill and grade the surface to conform to the adjacent surfaces.

G. Final backfill shall be compacted to a minimum 90 percent of the maximum dry density.

3.10  ADDITIONAL MATERIAL

Where final grades above the pre-construction grades are required to maintain minimum cover, additional fill material will be required. Utilize excess material excavated from the trench, if the material is suitable. If excess excavated materials are not suitable, or if the quantity available is not sufficient, provide additional suitable fill material.

3.11  BACKFILL UNDER ROADS
Compact backfill underlying pavement and sidewalks, and backfill under dirt and gravel roads to a minimum 95 percent of the maximum dry density. The top 12-inches shall be compacted to a minimum of 98 percent of the maximum dry density.

3.12 BACKFILL WITHIN GEORGIA DOT RIGHT-OF-WAY

Backfill within the Georgia DOT right-of-way shall meet the requirements stipulated in the “Utility Accommodation Policy and Standards”, published by the Georgia Department of Transportation.

3.13 BACKFILL ALONG RESTRAINED JOINT PIPE

Backfill along restrained joint pipe shall be compacted to a minimum 90 percent of the maximum dry density.

3.14 DETECTION TAPE

Where required, detection tape shall be buried 4 to 10-inches beneath the ground surface directly over the top of the pipe. Should detection tape need to be installed deeper, the Contractor shall provide 3-inch wide tape. In no case shall detection tape be buried greater than 20-inches from the finished grade surface.

3.15 TESTING AND INSPECTION

A. The soil testing will be performed by an independent testing laboratory selected by BCWSA.

B. The soils testing laboratory is responsible for the following:

1. Compaction tests in accordance with Article 1.02 of this Section.

2. Field density tests for each two feet of lift, one test for each 2,000 feet of pipe installed or more frequently if ordered by BCWSA.

3. Inspecting and testing stripped site, sub-grades and proposed fill materials.

C. The Contractor's duties relative to testing include:

1. Notifying laboratory of conditions requiring testing.

2. Coordinating with laboratory for field testing.
3. Providing excavation as necessary for laboratory personnel to conduct tests.

D. Inspection

1. Earthwork operations, acceptability of excavated materials for bedding or backfill, and placing and compaction of bedding and backfill is subject to inspection by BCWSA.

2. Foundations and shallow spread footing foundations are required to be inspected by a geotechnical engineer, who shall verify suitable bearing and construction.

E. Comply with applicable codes, ordinances, rules, regulations and laws of local, municipal, state or federal authorities having jurisdiction.

END OF SUBSECTION
PART 1 GENERAL

1.01 SCOPE

The work to be performed under this Section shall consist of removing and replacing existing pavement, sidewalks and curbs in paved areas where such have been removed for construction of water mains, fire hydrants, sewers, manholes and all other water and sewer appurtenances and structures.

1.02 SUBMITTALS

Certificates: When requested by BCWSA, provide certificates stating that materials supplied comply with Specifications. Certificates shall be signed by the asphalt producer and the Contractor.

1.03 CONDITIONS

A. Weather Limitations

1. Apply bituminous prime and tack coats only when the ambient temperature in the shade has been at least 50 degrees F for 12 hours immediately prior to application.

2. Do not conduct paving operations when surface is wet or contains excess of moisture which would prevent uniform distribution and required penetration.

3. Construct asphaltic courses only when atmospheric temperature in the shade is above 40 degrees F, when the underlying base is dry and when weather is not rainy.

4. Place base course when air temperature is above 35 degrees F and rising.

B. Grade Control: Establish and maintain the required lines and grades for each course during construction operations.
PART 2 PRODUCTS

2.01 MATERIALS AND CONSTRUCTION

A. Graded Aggregate Base Course: Graded aggregate base course shall be of uniform quality throughout and shall meet the requirements of Section 815.01 of the Georgia Department of Transportation Standard Specifications.

B. Black Base: Black base course shall be of uniform quality throughout and shall conform to the requirements of Section 828 of the Georgia Department of Transportation Standard Specifications.

C. Binder Course: The binder course of all paved roadways shall conform to the requirements of Section 400, Type “B” of the Georgia Department of Transportation Standard Specifications.

D. Surface Course: The surface course for all pavement, including prime or tack coat when required by the Engineer, shall conform to the requirements of Section 400, Type “F” of the Georgia Department of Transportation Standard Specifications.

E. Concrete: Provide concrete and reinforcing for concrete pavement or base courses in accordance with the requirements of the Georgia Department of Transportation Standard Specifications, Section 430. Concrete shall be of the strength classifications that matches or exceeds that of existing concrete being replaced.

F. Special Surfaces: Where driveways or roadways are disturbed or damaged which are constructed of specialty type surfaces, e.g., brick or stone, these driveways and roadways shall be restored utilizing similar, if not original, materials. A specialty contractor shall be used to restore the surfaces to their previous or better condition where the nature of these surfaces dictates. Special surfaces shall be removed and replaced to the limits to which they were disturbed.

2.02 TYPES OF PAVEMENTS

A. General: All existing pavement removed, destroyed or damaged by construction shall be replaced with the same type and thickness of pavement as that existing prior to construction. Materials, equipment and construction methods used for paving work shall conform to the Georgia Department of Transportation specifications applicable to the particular type required for replacement, repair or new pavements.
B. Aggregate Base: Aggregate base shall be constructed in accordance with the requirements of Section 310 of the Georgia Department of Transportation Standard Specifications. The maximum thickness to be laid in a single course shall be 6-inches compacted. If the design thickness of the base is more than 6-inches, it shall be constructed in two or more courses of approximate equal thickness. After the material placed has been shaped to line, grade and cross-section, it shall be rolled until the course has been uniformly compacted to at least 100 percent of the maximum dry density when Group 2 aggregate is used, or to at least 98 percent of maximum dry density when Group 1 aggregate is used.

C. Concrete Pavement: Concrete pavement or base courses shall be replaced with concrete. The surface finish of the replaced concrete pavement shall conform to that of the existing pavement. The surface of the replaced concrete base course shall be left rough. The slab depth shall be equivalent to the existing concrete pavement or base course, but in no case less than 6-inches thick. Transverse and longitudinal joints removed from concrete pavement shall be replaced at the same locations and to the same types and dimensions as those removed. Concrete pavements or concrete base courses shall be reinforced.

D. Asphaltic Concrete Base, Binder and Surface Course: Asphaltic concrete base, binder and surface course construction shall conform to Georgia Department of Transportation Standard Specifications, Section 400. The pavement mixture shall not be spread until the designated surface has been previously cleaned and prepared, is intact, firm, properly cured, dry and the tack coat has been applied. Apply and compact the base in maximum layer thickness by asphalt spreader equipment. After compaction, the black base shall be smooth and true to established profiles and sections. Apply and compact the surface course. Immediately correct any high, low or defective areas by cutting out the course, replacing with fresh hot mix, and immediately compacting to conform and thoroughly bond to the surrounding area.

E. Surface Treatment Pavement: Bituminous penetration surface treatment pavement shall be replaced with a minimum thickness of 1-inch conforming to Section 424, Georgia Department of Transportation Standard Specifications.

F. Gravel Surfaces: Existing gravel road, drive and parking area replacement shall meet the requirements of graded aggregate base course. This surfacing may be authorized as a temporary surface for paved streets until replacement of hard surfaced pavement is authorized.
G. Temporary Measures: During the time period between pavement removal and complete replacement of permanent pavement, maintain highways, streets and roadways by the use of steel running plates anchored to prevent movement. The backfill above the pipe shall be compacted, as specified in Barrow County Water and Sewerage Authority Standards, up to the existing pavement surface to provide support for the steel running plates. All pavement shall be replaced within seven calendar days of its removal.

PART 3 EXECUTION

3.01 REMOVING PAVEMENT

A. General: Remove existing pavement as necessary for installing the pipe line and appurtenances.

B. Marking: Before removing any pavement, mark the pavement neatly paralleling pipe lines and existing street lines. Space the marks the width of the trench.

C. Breaking: Break asphalt pavement along the marks using pavement shearing equipment, jack hammers or other suitable tools. Break concrete pavement along the marks by scoring with a rotary saw and breaking below the score by the use of jack hammers or other suitable tools.

D. Machine Pulling: Do not pull pavement with machines until the pavement is completely broken and separated from pavement to remain.

E. Damage to Adjacent Pavement: Do not disturb or damage the adjacent pavement. If the adjacent pavement is disturbed or damaged, remove and replace the damaged pavement.

F. Sidewalk: Remove and replace any sidewalks disturbed by construction for their full width and to the nearest undisturbed joint.

G. Curbs: Tunnel under or remove and replace any curb disturbed by construction to the nearest undisturbed joint.

3.02 REPLACING PAVEMENT

A. Preparation of Subgrade: Upon completion of back filling and compaction of the backfill, arrange to have the compaction tested by an independent testing laboratory. After compaction testing has been satisfactorily completed, replace all pavements, sidewalks and curbs removed.
1. The existing street pavement or surface shall be removed along the lines of the work for the allowable width specified for the trench or structure. After the installation of water works facilities and after the backfill has been compacted suitably, the additional width of pavement to be removed shall be done immediately prior to replacing the pavement.

2. Trench backfill shall be compacted for the full depth of the trench as specified in Barrow County Water and Sewerage Authority Standards for Trench Excavation and Backfill.

3. Temporary trench backfill along streets and driveways shall include 6-inches of crushed stone or cherty clay as a temporary surfacing of the trenches. This temporary surface shall be maintained carefully at grade and dust-free by the Contractor until the backfill of the trench has thoroughly compacted.

4. When temporary crushed stone or chert surface is considered by BCWSA to be sufficient surface for gravel pavement, the surface shall be graded smooth and to an elevation that will make the final permanent surfacing level with the adjacent surfacing that was undisturbed.

B. Pavement Replacement

1. Prior to replacing pavement, make a final cut in concrete pavement 12-inches back from the edge of the damaged pavement with a concrete saw. Remove asphalt pavement 12-inches back from the edge of the damaged pavement using pavement shearing equipment, jack hammers or other suitable tools.

2. Replace driveways, sidewalks and curbs with the same material, to nearest existing undisturbed construction joint and to the same dimensions as those existing.

3. If the temporary crushed stone or chert surface is to be replaced, the top 6-inches shall be removed and the crushed stone surfacing for unpaved streets or the base for the bituminous surface shall be placed.

4. Following this preparation, the chert or crushed stone base shall be primed with a suitable bituminous material and surfaced with the proper type of bituminous surface treatment.

5. Where the paved surface is to be replaced with asphaltic concrete pavement, concrete pavement or with a concrete base and a surface
Removing and Replacing Pavement

The temporary chert or crushed stone surface and any necessary backfill material, additional existing paving and new excavation shall be removed. All edges of the existing pavement shall be cut to a straight, vertical edge. Care shall be used to get a smooth joint between the old and new pavement and to produce an even surface on the completed street. Concrete base slabs and crushed stone bases, if required, shall be placed and allowed to cure for three days before bituminous concrete surface courses are applied. Expansion joints, where applicable, shall be replaced in a manner equal to the original joint.

6. Where driveways or roadways, constructed of specialty type surfaces, e.g., brick or stone are disturbed or damaged, these driveways and roadways shall be restored utilizing similar materials. Where the nature of these surfaces dictate, a specialty contractor shall be used to restore the surfaces to their previous or better condition. Special surfaces shall be removed and replaced to the limits to which they were disturbed.

C. Pavement Resurfacing

1. Where pavement to be resurfaced has been damaged with potholes, the Contractor shall remove all existing loose pavement material and fill the hole with black base, as specified, to the level of the existing pavement. After all pipe line installations are complete and existing pavement has been removed and replaced along the trench route, apply tack coat and surface course as specified.

2. Resurfacing limits shall be perpendicular to the road centerline. The limits of resurfacing shall be 10 feet beyond the edge of the pavement replacement on the main road being resurfaced, and to the point of tangency of the pavement on the side streets.

D. Pavement Striping: Pavement striping removed or paved over shall be replaced with the same type, dimension and material as original.

3.03 SIDEWALK AND CURB REPLACEMENT

A. Construction

1. All concrete sidewalks and curbs shall be replaced with concrete.

2. Preformed joints shall be 1/2-inch thick, conforming to the latest edition of AASHTO M59 for sidewalks and AASHTO M 123 for curbs.
3. Forms for sidewalks shall be of wood or metal, shall be straight and free from warp, and shall be of sufficient strength, when in place, to hold the concrete true to line and grade without springing or distorting.

4. Forms for curbs shall be metal and of an approved section. They shall be straight and free from distortions, showing no vertical variation greater than 1/8-inch in 10 feet and no lateral variation greater than 1/4-inch in 10 feet from the true plain surface on the vertical face of the form. Forms shall be of the full depth of the structure and constructed such to permit the inside forms to be securely fastened to the outside forms.

5. Securely hold forms in place true to the lines and grades required.

6. Wood forms may be used on sharp turns and for special sections, as approved by the Engineer. Where wooden forms are used, they shall be free from warp and shall be the nominal depth of the structure.

7. All mortar and dirt shall be removed from forms and all forms shall be thoroughly oiled or wetted before any concrete is deposited.

B. When a section is removed, the existing sidewalk or curb shall be cut to a neat line, perpendicular to both the centerline and the surface of the concrete slab. Existing concrete shall be cut along the nearest existing construction joints; if such joints do not exist, the cut shall be made at minimum distances required to prevent cracking.

C. Existing concrete sidewalks and curbs that have been cut and removed for construction purposes shall be replaced with the same width and surface as the portion removed. Sidewalks shall have a minimum uniform thickness of 4-inches. The new work shall be neatly jointed to the existing concrete so that the surface of the new work shall form an even, unbroken plane with the existing surfaces.

D. The subgrade shall be formed by excavating to a depth equal to the thickness of the concrete, plus 2-inches. Subgrade shall be of such width as to permit the proper installation and bracing of the forms. Subgrades shall be compacted by hand tamping or rolling. Soft, yielding or unstable material shall be removed and backfilled with satisfactory material. Place 2-inches of porous crushed stone under all sidewalks and curbs and compacted thoroughly, then finish to a smooth, unyielding surface at proper line, grade and cross section.

E. Joint for Curbs
1. Construct joints true to line with their faces perpendicular to the surface of the structure and within 1/4-inch of their designated position.

2. Thoroughly spade and compact the concrete at the faces of all joints filling all voids.

3. Install expansion joint materials at the point of curve at all street returns. Install expansion joint material behind the curb at abutment to sidewalks and adjacent structures.

4. Place contraction joints every 10 feet along the length of the curbs and gutters. Form contraction joints using steel templates or division plates which conform to the cross section of the structure. Leave the templates in place until the concrete has set sufficiently to hold its shape, but remove them while the forms are still in place. Contraction joint templates or plates shall not extend below the top of the steel reinforcement or they shall be notched to permit the reinforcement to be continuous through the joint. Contraction joints shall be a minimum of 1-1/2-inches deep.

F. Expansion joints shall be required to replace any removed expansion joints or in new construction as required. Expansion joints shall be true and even, shall present a satisfactory appearance, and shall extend to within 1/2-inch of the top of finished concrete surface.

G. Finishing

1. Strike off the surface with a template and finish the surface with a wood float using heavy pressure, after which, contraction joints shall be made and the surface finished with a wood float or steel trowel.

2. Finish the face of the curbs at the top and bottom with an approved finishing tool.

3. Finish edges with an approved finishing tool having a 1/4-inch radius.

4. Provide a final broom finish by lightly combing with a stiff broom after troweling is complete.

5. The finished surface shall not vary more than 1/8-inch in 10 feet from the established grade.

H. Concrete shall be suitably protected from freezing and excessive heat. It shall be kept covered with burlap or other suitable material and kept wet until cured. Provide necessary barricades to protect the work. All damage
caused by people, vehicles, animals, rain, the Contractor's operations and the like shall be repaired by the Contractor.

3.04 MAINTENANCE

The Contractor shall maintain the surfaces of roadways built and pavements replaced until the acceptance of the Project. Maintenance shall include replacement, scraping, reshaping, wetting and rerolling as necessary to prevent raveling of the road material, the preservation of reasonably smooth surfaces and the repair of damaged or unsatisfactory surfaces. Maintenance shall include sprinkling as may be necessary to abate dust from the gravel surfaces.

3.05 SUPERVISION AND APPROVAL

A. Pavement restoration shall meet the requirements of the regulatory agency responsible for the pavement. Obtain agency approval of pavement restorations before requesting final payment.

B. Complete pavement restoration as soon as possible after backfilling.

C. Failure of Pavement: Should any pavement restoration or repairs fail or settle during the bonded period, promptly restore or repair defects.

3.06 CLEANING

The Contractor shall remove all surplus excavation materials and debris from the street surfaces and rights-of-way and shall restore street, roadway or sidewalk surfacing to its original condition.

END OF SUBSECTION
PART 1 GENERAL

1.01 SCOPE

A. The Contractor shall furnish all labor, materials, equipment and miscellaneous items as necessary for the installation of a complete chain link fence system. Fencing shall be installed in complete conformity with the manufacturer's written recommendations and as specified herein.

B. Security fencing for the Contractor is at Contractor's option and is not included as part of the work specified.

1.02 DELIVERY AND HANDLING

A. Deliver materials with the manufacturer's tags and labels intact.

B. Handle and store materials in such a manner that will avoid damage.

1.03 QUALITY ASSURANCE

A. Standards of manufacturer shall comply with the standards of the Chain Link Manufacturers Institute and these Specifications.

B. Provide fencing as a complete unit produced by a single manufacturer including the required erection accessories, fittings and fasteners.

PART 2 PRODUCTS

2.01 GENERAL

A. Overall height for new fencing shall be six feet with three strands of barbed wire on malleable iron post tops above. Posts shall be set at no more than 10 foot centers, a full three feet deep in concrete footings, poured the full size of the holes as excavated. Corner posts shall have the necessary strut and tie bracing. The size and the locations of gates shall be provided on the Drawings.

B. Where fencing crosses ditches, steep grades, and other unusual conditions, make special provisions to insure that the security, appearance, maintainability and permanence of the standard fencing are equaled or exceeded.
2.02 MATERIALS AND CONSTRUCTION

A. Fence Mesh: 9 gauge wire, woven to 2-inch squares, galvanized after weaving, six foot wide roll. Continuous tension wire shall be provided at the lower edge of the mesh.

B. Line Post: 2-1/2-inch O.D. Galvanized Pipe (3.65 #/ft.).

C. Corner Post: 3-inch O.D. Galvanized Pipe (5.79 #/ft.).

D. Gate Post: 4-inch O.D. Galvanized Pipe (9.11 #/ft.).

E. Top Rail: 1-5/8-inch O.D. Galvanized Pipe (2.27 #/ft.) with extra long pressed steel sleeves.

F. Gates shall be supplied with heavy-duty latches, keepers and heavy duty hardened bronze padlocks with duplicate keys.

G. Gate Frames: 2-inch O.D. Galvanized Pipe Frame (2.72 #/ft.).

H. Barbed wire shall consist of three strands of 12 gauge wire, with 4-point pattern barbs, galvanized after weaving.

PART 3 EXECUTION

3.01 INSTALLATION

A. Fence installation shall not be started before the final grading is completed, with finish grade elevations established, unless otherwise permitted.

B. Excavation: Drill holes of diameters and spacing required, for post footings in firm, undisturbed or compacted soil.

1. Excavate holes to the minimum diameters as recommended by fence manufacturer.

2. Unless otherwise indicated, excavate hole depths approximately 3-inches lower than the post bottom, with bottom of posts set not less than 36-inches below the surface when in firm, undisturbed soil.

3. If solid rock is encountered near the surface, drill into rock at least 12-inches for line posts and at least 18-inches for end, pull corner, and gate posts. Drill hole at least 1-inch greater diameter than the largest
dimension for the post to be placed. If solid rock is below soil overburden, drill to full depth required. Penetration into rock need not exceed the minimum depths specified above.

C. Setting Posts: Remove loose and foreign materials from sides and bottoms of holes and moisten soil prior to placing concrete.

1. Center and align posts in holes 3-inches above bottom of excavation.

2. Place concrete around posts in a continuous pour and vibrate or tamp for consolidation. Check each post for vertical and top alignment and hold in position during placement and finishing operations.

3. Trowel finish tops of footings and slope of dome to direct water away from posts. Extend footings for gate posts to the underside of bottom hinge. Set keeps, stops, sleeves and other accessories into concrete as required.

4. Keep exposed concrete surfaces moist for at least seven days after placement or cure with membrane curing materials or other acceptable curing methods.

5. Grout-in posts set into sleeved holes, concrete constructions or rock excavations with non-shrink Portland cement grout or other acceptable grouting material.

D. Concrete Strength: Allow concrete to attain at least 75 percent of its minimum 28 day compressive strength, but in no case sooner than seven days after placement, before rails, tension wires, barbed wire or fabric is installed. Do not stretch and tension fabric and wires and do not hang gates until the concrete has attained its full design strength.

E. Top Rails: Run rail continuously through post caps or extension arms, bending to radius for curved runs. Provide expansion couplings as recommended by fencing manufacturer.

F. Brace Assemblies: Install braces so posts are plumb when diagonal rods are under proper tension.

G. Tension Wire: Install tension wires by weaving through the fabric and tying to each post with not less than 6 gauge galvanized wire or by securing the wire to the fabric.
H. Fabric: Pull fabric taut and tie to posts, rails and tension wires. Install fabric on security side of fence and anchor to framework so that fabric remains in tension after pulling force is released.

I. Repair damaged coatings in the shop or during field erection by recoating with manufacturer's recommended repair compound, applied per manufacturer's directions.

J. Stretcher Bars: Thread through or clamp to fabric 4-inches on center and secure to posts with metal bands spaced 15-inches on center.

K. Barbed Wire: Install three parallel wires on each extension arm; on security side of fence, unless otherwise indicated. Pull wire taut and fasten securely to each extension arm.

L. Tie Wires: Use U-shaped wire appropriate for the diameter of pipe. Attach pipe and fabric firmly with tie wire ends twisted at least two full turns. Bend ends of wire to minimize hazard to persons or clothing.

M. Fasteners: Install nuts for tension band and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.02 CLEANING

Perform cleaning during installation of the work and upon completion of the work. Remove from site all debris and equipment. Repair all damage resulting from chain link fence system installation. Cleaning shall include appropriate site restoration to its original condition.

END OF SECTION
SECTION 3
STANDARD SPECIFICATIONS FOR
WATER SYSTEM CONSTRUCTION
PART 1 GENERAL

1.01 SCOPE

A. This Section describes products to be incorporated into the water mains and requirements for the installation and use of these items. Furnish all products and perform all labor necessary to fulfill the requirements of these Specifications.

B. Supply all products and perform all work in accordance with applicable Water Standards. Latest revisions of all standards are applicable.

1.02 QUALIFICATIONS

A. If requested by BCWSA, submit evidence that manufacturers have consistently produced products of satisfactory quality and performance for a period of at least two years.

B. All products shall be cast, fabricated, assembled and manufactured in the United States of America.

1.03 TRANSPORTATION AND HANDLING

Furnish equipment and facilities for unloading, handling, distributing and storing pipe, fittings, valves and accessories in accordance with manufacturer’s written instructions. Make equipment available at all times for use in unloading.

1.04 STORAGE AND PROTECTION

Store and protect all pipe and accessories which cannot be distributed along the route. Store all pipe and accessories in accordance with manufacturer’s written instructions.

PART 2 PRODUCTS

2.01 PIPING MATERIALS AND ACCESSORIES

A. All materials that will be used and come in contact with potable water shall meet NSF Standard 61 for potable water use.
B. Ductile Iron Pipe (DIP)

1. Ductile iron pipe shall be manufactured in accordance with AWWA C151. All pipe, except specials, shall be furnished in nominal lengths of 18 to 20 feet. All pipe shall have a minimum pressure rating as indicated in the following table.

<table>
<thead>
<tr>
<th>Pipe Sizes (inches)</th>
<th>Pressure Class (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 – 12</td>
<td>350</td>
</tr>
<tr>
<td>14 – 18</td>
<td>350</td>
</tr>
<tr>
<td>20</td>
<td>300</td>
</tr>
<tr>
<td>24</td>
<td>250</td>
</tr>
</tbody>
</table>

2. Flanged pipe minimum wall thickness shall be equal to Special Thickness Class 53. Flanges shall be provided by the pipe manufacturer with the pipe or fittings.

3. The weight, casting period and class or nominal thickness shall be showed on each pipe. The manufacturer’s mark, the year in which the pipe is produced and the letters “DI” or “DUCTILE IRON” shall be clear and legible, and all cast marks shall be on or near the bell.

4. Pipe and fittings shall be cement lined in accordance with AWWA C104. Pipe and fittings shall be furnished with a bituminous outside coating.

5. Fittings shall be ductile iron and shall conform to AWWA C110 or AWWA C153 with a minimum rated working pressure of 250 psi.

6. Joints

a. Unless shown or specified otherwise, joints shall be push-on or restrained joint type for pipe and standard mechanical, push-on or restrained joints for fittings. Push-on and mechanical joints shall conform to AWWA C111.

b. Restrained joints: Restrained joints shall be manufactured restrained joint or restraining gasket joint as specified below.

i. Manufactured restrained joints shall be American FLEX-RING or LOK-RING, or U.S. Pipe TR FLEX.
ii. Restraining gasket joints shall be for pipes no larger than 12-inches in diameter and assembled with American FAST-GRIP, or US Pipe FIELD-LOK gasket.

iii. No field welding for manufactured restrained joint pipe assembly will be permitted. Where field cutting of restrained joint pipe is required, the joint may be assembled with American FIELD FLEX-RING or US Pipe TR FLEX GRIPPER RINGS.

b. Flanged joints shall meet the requirements of ANSI B16.1, Class 125.

7. Provide the appropriate gaskets for mechanical and flange joints. Gaskets for flange joints shall be made of 1/8-inch thick, cloth reinforced rubber; gaskets may be ring type or full face type.

8. Bolts and Nuts

a. Provide the necessary bolts for connections. All bolts and nuts shall be threaded in accordance with ANSI B1.1, Coarse Thread Series, Class 2A external and 2B internal fit.

b. Bolts and nuts for mechanical joints shall be Tee Head Bolts and nuts of high strength low-alloy steel in accordance with ASTM A 242 to the dimensions shown in AWWA C111/ANSI A21.11.

c. Flanged joints shall be bolted with through stud or tap bolts of required size as directed. Bolt length and diameter shall conform to ANSI/AWWA C115 for Class 125 flanges shown in ANSI/ASME B16.1.

d. Bolts for exposed service shall be zinc plated, cold pressed, steel machine bolts conforming to ASTM A 307, Grade B. Nuts for exposed service shall be zinc plated, heavy hex conforming to ASTM A 563. Zinc plating shall conform to ASTM B 633, Type II.

e. Bolts for submerged service shall be stainless steel machine bolts conforming to ASTM A 193, Grade B8. Nuts shall be heavy hex, stainless steel conforming to ASTM A 194, Grade 8.

9. Mechanical joint glands shall be ductile iron.
10. Ductile iron pipe shall be encased with polyethylene film where corrosion control measures are applicable. Polyethylene film shall meet the requirements of AWWA C 105.

11. Pipe bosses shall be welded-on ductile iron body type and shall be faced and tapped for AWWA C110 flange connection. All welding, fabrication and outlet hole drilling shall be performed by the manufacturer. Outlets shall be free of burrs. The bosses shall be welded on minimum Thickness Class 51 ductile iron pipe.

12. Thrust collars shall be welded-on ductile iron body type designed to withstand thrust due to 250 psi internal pressure on a dead end.

13. Acceptance will be on the basis of the BCWSA’s inspection and the manufacturer's written certification that the pipe was manufactured and tested in accordance with the applicable standards.

C. Polyvinyl Chloride Pipe (PVC)

1. All PVC pipe shall have belled ends for push-on jointing and shall conform to AWWA C900, ductile iron pipe equivalent outside diameters. The pipe shall have a minimum of a Dimension Ratio (DR) of 14 and shall be capable of withstanding a working pressure of 200 psi. Pipe shall be supplied in minimum lengths of 20 feet.

2. All PVC pipe shall bear the National Sanitation Foundation (NSF) seal of approval for potable water use, and comply with requirements for Type 1, Grade 1 of ASTM D1784 and D2241.

3. All PVC pipe shall be marked at intervals of not more than five feet with the above-mentioned ratings all in accordance with AWWA Standard C900.

4. All PVC pipe shall be provided with rubber rings conforming to ASTM F477 and ASTM D3139.

5. All PVC pipe shall be of one manufacturer, the Contractor shall not mix pipe from more than one manufacturer.

6. Fittings for PVC pipe of 2-1/2-inches nominal diameter and smaller shall be polyvinyl chloride push-on fittings supplied by the manufacturer of the PVC pipe used. Ninety-degree turns shall be made with 90 degree “long sweep” elbows or bends.
7. Fittings for PVC pipe 3-inches nominal diameter or larger shall be mechanical joint ductile iron fittings as specified for ductile iron pipe. Fittings shall be supplied with rubber adaptor rings designed for the specific purpose of jointing to PVC pipe.

8. All fittings, glands and gaskets shall be American made. Any foreign made fittings, glands or gaskets installed by the Contractor shall be removed and replaced at the Contractor's expense.

9. A #14 AWG copper tracer wire shall be provided and attached to all PVC water mains.

10. Acceptance will be on the basis of the BCWSA's inspection and the manufacturer's written certification that the pipe was manufactured and tested in accordance with the applicable standards, including the National Sanitation Foundation.

D. Polyethylene Tubing and Fittings (PE)

1. Service tubing shall conform to AWWA C901, high density, SDR 9 with copper tube size outside diameters. Solid stainless steel inserts shall be provided where compression fittings will be used. Tubing shall be rated for 200 psi working pressure for cold water service.

2. Fittings and adapters shall be cast bronze, compression type connection, equal to Mueller Style 110 or Dresser Style 88.

2.02 GATE VALVES (GV)

A. All gate valves shall operate such that hand-wheel rotation to the left (counter-clockwise) opens the valve.

B. Non-Buried Service: 3-Inches in diameter and smaller gate valves for non-buried service shall be bronze, heavy duty, rising stem, wedge type with screwed or union bonnet. Valve ends shall be threaded or flanged type as appropriate. Valves shall have a minimum 200 psi working pressure for water (125 psi working pressure for steam). Gate valves shall be equal to Crane No. 428.

C. Buried Service: Gate valves for buried service shall be resilient wedge type conforming to the requirements of AWWA C509 or AWWA C515 rated for 200 psi working pressure. Valve ends shall be mechanical joint type.

1. Valves shall be provided with two O-ring stem seals with one O-ring located above and one O-ring below the stem collar. The area
between the O-rings shall be filled with lubricant to provide lubrication to the thrust collar bearing surfaces each time the valve is operated. At least one anti-friction washer shall be utilized to further minimize operating torque. All seals between valve parts, such as body and bonnet, bonnet and bonnet cover, shall be flat gaskets or O-rings.

2. The valve gate shall be made of cast iron or ductile iron having a vulcanized, synthetic rubber coating, or a seat ring attached to the disc with retaining screws. Sliding of the rubber on the seating surfaces to compress the rubber will not be allowed. The design shall be such that compression-set of the rubber shall not affect the ability of the valve to seal when pressure is applied to either side of the gate. The sealing mechanism shall provide zero leakage at the water working pressure when installed with the line flow in either direction.

3. All internal ferrous surfaces shall be coated with epoxy to a minimum thickness of 4 mils. The epoxy shall be non-toxic, impart no taste to the water and shall conform to AWWA C550, latest revision.

4. Gate valves shall be manufactured by Mueller, American Flow Control, U. S. Pipe or M & H Valve.

2.03 FIRE HYDRANTS (FH)

A. All fire hydrants shall conform to the requirements of AWWA C502 with a minimum 150 psi working pressure. Hydrants shall be the compression type, closing with line pressure. The valve opening shall not be less than 5-1/4-inches.

B. In the event of a traffic accident, the hydrant barrel shall break away from the standpipe at a point above grade and in a manner which will prevent damage to the barrel and stem, preclude opening of the valve, and permit rapid and inexpensive restoration without digging or cutting off the water.

C. The means for attaching the barrel to the standpipe shall permit facing the hydrant a minimum of eight different directions.

D. Hydrants shall be fully bronze mounted with all working parts of bronze. Valve seat ring shall be bronze and shall screw into a bronze retainer.

E. All working parts, including the seat ring shall be removable through the top without disturbing the barrel of the hydrant.

F. The operating nut shall match those on the existing hydrants. The operating threads shall be totally enclosed in an operating chamber, separated from
the hydrant barrel by a rubber O-ring stem seal and lubricated by grease or an oil reservoir.

G. Hydrant shall be a non-freezing design and be provided with a simple, positive, and automatic drain which shall be fully closed whenever the main valve is opened.

H. Hose and pumper connections shall be breech-locked, pinned, or threaded and pinned to seal them into the hydrant barrel. Each hydrant shall have two 2-1/2-inch hose connections and one 4-1/2-inch pumper connection, all with National Standard threads and each equipped with cap and non-kinking chain. Threads on these nozzles shall conform to those currently in the system.

I. Hydrants shall be furnished with a mechanical joint connection to the spigot of the 6-inch hydrant lead.

J. Minimum depth of bury shall be 4.5 feet. Provide extension section where necessary for proper vertical installation and in accordance with manufacturer's recommendations.

K. All outside surfaces of the barrel above grade shall be painted silver with enamel equal to Koppers Glamortex 501.

L. Hydrants shall be traffic model and shall be Mueller Super Centurion, American Darling B-84-B, or M & H Valve No. 929.

M. Provide BCWSA with one adjustable fire hydrant wrench for every accepted water system.

2.04 VALVE BOXES (VB) AND EXTENSION STEMS

A. All buried valves shall be equipped with valve boxes. The valve boxes shall be cast iron two-piece screw type with drop covers. Valve box covers shall have a 5.25-inch inside diameter. Valve box covers shall weigh a minimum of 13 pounds. The valve boxes shall be adjustable to 6-inches up or down from the nominal required cover over the pipe. Valve boxes shall be of sufficient length that bottom flange of the lower belled portion of the box is below the valve operating nut. Ductile or cast iron extensions shall be provided as necessary. Covers shall have "WATER VALVE" or "WATER" cast into them. Valve boxes shall be manufactured in the United States.

B. All valves shall be furnished with extension stems, as necessary, to bring the operating nut to within 30-inches of the top of the valve box. Connection to the valve shall be with a wrench nut coupling and a set screw to secure the
coupling to the valve's operating nut. The coupling and square wrench nut shall be welded to the extension stem. Extension stems shall be equal to Mueller A-26441 or M & H Valve Style 3801.

2.05 VALVE MARKERS (VM)

A. The Contractor shall provide a fiberglass valve marker for each valve installed. The marker shall be a fiber reinforced composite material with an ultraviolet light inhibitor and curved cross section with a minimum dimension of 3.75-inches wide. The post design shall be capable of flattening out when hit and then returning to its normal upright position. The marker shall be installed according to manufacturer's specifications. The decal shall be placed on the side of the marker which is facing the roadway.

B. Valve markers shall be Rhino FiberCurve™ Fiberglass Utility Marking Post with PolyTech Coating™ or a BCWSA approved equal. The valve markers shall be blue and 66-inches in length. Each valve marker shall have the TriView Marking System decal #GD8-5194K.

2.06 TAPPING SLEEVES AND VALVES (TS&V)

A. Tapping sleeves shall be cast or ductile iron of the split-sleeve, mechanical joint type. The Contractor shall be responsible for determining the outside diameter of the pipe to be connected to prior to ordering the sleeve. Valves shall be gate valves furnished in accordance with the specifications shown above, with flanged connection to the tapping sleeve and mechanical joint connection to the branch pipe. The tapping sleeve and valve shall be supplied by the valve manufacturer. Tapping sleeves shall be equal to American-Darling, Mueller or M & H Valve.

B. Tapping sleeves for PVC pipe shall be fabricated of stainless steel, and shall be clamp-on type, equal to Smith-Blair, Ford or Romac Industries, Inc.

2.07 TAPPING SADDLES (TS)

Tapping saddles shall be ductile iron body type with O-ring gasket and alloy steel straps. Connection shall be flanged or mechanical joint. Tapping saddles shall be equal to ACIPCO A-10920 and ACIPCO A-30920.

2.08 SERVICE SADDLES

A. Service saddles for water service connections to PVC pipe shall be heavy, cast bronze, two-piece design for controlled diameter. Tap shall be AWWA tapered thread.
B. Service saddles shall be equal to Ford Style S70 or 90, or Mueller Series H-13000. For water service connections to cast or ductile iron pipe, saddles shall be equal to Smith-Blair Series 317 or Ford Style F202.

2.09 CORPORATION AND CURB STOPS

Corporation and curb stops shall be ground key or ball valve type, shall be made of bronze conforming to ASTM B 61 or B 62, and shall be suitable for the working pressure of the system. Ends shall be suitable for tube compression type joint. Threaded ends for inlet and outlet of corporation stops shall conform to AWWA C800; coupling nut for connection to tubing shall conform to ANSI B16.26. Corporation or curb stops shall be manufactured by Mueller or Ford.

2.10 BACKFLOW PREVENTERS (BFP)

A. Double Check Valve Assembly (DCV): For low hazard conditions subject to back pressure and back siphonage. The assembly shall be constructed of epoxy-coated ductile iron valve bodies with removable seats and stainless steel trim. The assembly shall contain two independent check valves, each equipped with bronze ball valve type test ports. Unit shall be furnished with two resilient seated isolation gate valves equal to those specified herein. Isolation gate valves shall be equipped with OS&Y handwheel operator. Unit shall be rated for a minimum 175 psi working pressure. Joints shall be flanged, Class 125. Units shall meet AWWA C510 and have UL/FM rating and be equipped with detector assembly for detection of unauthorized water use. Assemblies shall be equal to Watts, Ames, or Febco.

B. Reduced Pressure Zone Assembly (RPZ): For high hazard conditions subject to back pressure and back siphonage. The assembly shall be constructed of fused epoxy coated cast iron check valve body with replaceable bronze seats, epoxy coated cast iron relief valve with stainless steel trim. Unit shall be furnished with two resilient seated isolation gate valves equal to those specified herein. Isolation gate valves shall be equipped with OS&Y handwheel operator. Unit shall be rated for a minimum 175 psi working pressure. Joints shall be flanged, Class 125. Units shall meet AWWA C511-92 and have UL/FM rating. Assemblies shall be equal to Watts or Febco.

C. Dual Check Valve Assembly: For low hazard conditions (residential services): The assembly shall be constructed of cast bronze body with plastic check modules, silicone disc and buna N seals, and stainless steel spring. Unit shall be rated for a minimum 150 psi working pressure. Units shall meet AWWA and have UL/FM rating. Assemblies shall be equal to Watts or Febco.
2.11 ALTITUDE VALVE (AV)

A. Altitude control valve shall be of the single acting type, hydraulically-operated, diaphragm-actuated, pilot-controlled, globe type body. The valve shall close off tightly when the water reaches a maximum pre-determined level in the tank to prevent overflow. The valve shall not re-open to refill the tank until the water level drops a specified amount as adjusted on a differential control pilot valve.

B. Valve closing speed shall be adjustable. The tank water level control shall be by means of a diaphragm-operated, spring-loaded, three-way pilot valve which senses the difference between the static force in the tank and the adjustable spring load. This is done by means of a sensing line between the tank and the pilot control.

C. Valves shall be furnished with all exterior piping, fittings, wye strainers and ball valves. Wye strainers shall be equipped with ball type, blow-off valves for strainer flushing without removing line pressure. Top cover shall be equipped with blow-off valve for air release without removing line pressure.

D. Main valve body shall be constructed of high tensile cast or ductile iron. Main valve trim shall be brass and stainless steel. Altitude control shall be high tensile cast iron with brass and stainless steel trim. All internal hardware shall be brass or stainless steel. Diaphragms shall be nylon fabric with Buna-N coating. O-rings shall be Buna-N. Valves shall be furnished with Class 125 flange ends and be designed for 150 psi working pressure. Valves shall be serviceable in-place by removal of top cover. All internal parts, O-rings and valve seats shall be replaceable through top cover.

E. Valves shall be Watts, Ames, Cla Val. or G.A. Industries.

2.12 CHECK VALVE (CV)

A. Check valve shall be hinged disc type with cast iron body and bronze or bronze-fitted disc. Valve shall be designed for the operating head indicated and shall not slam shut. Valve shall be equipped with a 1/2-inch stop cock at the high point of the valve for bleeding air from the line.

B. Valves shall be outside weight and lever cushioned type. The cushion chamber shall be attached to the side of the valve body externally and constructed with a piston operating in a chamber that will effectively prevent water hammer at the heads indicated. The cushioning shall be by air, and the cushion chamber shall be so arranged that the closing speed will be adjustable to meet the service requirements.
C. Valve ends shall be flanged, meeting the requirements of ANSI B16.1, Class 125.

D. Valves shall be manufactured by APCO or G.A. Industries.

2.13 MANHOLES AND PRE-CAST CONCRETE PRODUCTS

A. Pre-cast Concrete Sections

1. Pre-cast concrete sections shall meet the requirements of ASTM C 478 for round sections and ASTM C913 for rectangular sections. The minimum compressive strength of the concrete in pre-cast sections shall be 4,000 psi. The minimum wall thickness for round sections shall be one-twelfth of the inside diameter of the base, riser or the largest cone diameter.

2. Transition slabs which convert bases larger than four feet in diameter to four foot diameter risers shall be designed by the pre-cast concrete manufacturer to carry the live and dead loads exerted on the slab.

3. Seal joints between pre-cast sections by means of rubber O-ring gaskets or flexible butyl rubber sealant. Butyl rubber sealants shall meet the requirements of AASHTO M-198. Sealant shall be pre-formed type with a minimum nominal diameter of 1-inch.

4. Butyl rubber sealant shall be equal to Kent Seal No. 2 or Concrete Sealants CS 202.

B. Brick and Mortar: Brick shall be whole and hardburned, conforming to ASTM C 32, Grade MS. Mortar shall be made of one part Portland cement and two parts clean sharp sand. Cement shall be Type 1 and shall conform to ASTM C 150. Sand shall meet ASTM C 144.

C. Plastic Steps: Manhole steps of polypropylene, molded around a steel rod, equal to products of M.A. Industries may be used.

D. Floor Door

1. Door shall be single or double leaf type as approved by BCWSA.

2. The frame shall be 1/4-inch extruded aluminum alloy 6063-T6, with built-in neoprene cushion and with strap anchors bolted to the exterior. Door leaf shall be 1/4-inch aluminum diamond plate, alloy 6061-T6, reinforced with aluminum stiffeners as required. Stainless steel hinges
shall be bolted to the underside and pivot on torsion bars that counterbalance the door for easy operation. The door shall open to 90 degrees and lock automatically in that position. A vinyl grip handle shall be provided to release the cover for closing. The door shall be built to withstand a live load of 150 pounds per square foot, and shall be equipped with a snap lock and removable handle. Bituminous coating shall be applied to exterior of frame by the manufacturer. The door shall also be provided with a hasp and padlock in addition to the built-in locking mechanism. Padlocks for all doors shall be keyed alike.

3. The floor door shall be Type K, equal to The Bilco Company, or Thompson Fabricating Company “TuffHatch”.

2.14 RETAINER GLANDS AND FLANGE ADAPTERS

A. Retainer glands shall be Megalug Series 1100, as manufactured by EBAA Iron, or Uni-Flange Series 1400, as manufactured by Ford Meter Box Company.

B. Flange Adapter: Flange adapters shall permit the connection of unthreaded, ungrooved, open-ended, ductile iron pipe to ANSI/ASME B16.1, Class 125 flanges. Flange adapters shall meet the test requirements of ANSI/ASME B16.1 for Class 125 flanges. The adapter shall be a ductile iron casting incorporating a flange with extended throat, set screws and gasket. The gasket shall provide a compression seal between the adapter, the pipe and the adjacent flange. Flange adapters are to be used only in locations specifically approved by the County and in accordance with the manufacturer’s recommendations. Flange adapters shall be manufactured by Uni-Flange (Series 400) or EBAA Iron.

2.15 HYDRANT TEES

Hydrant tees shall be equal to ACIPCO A10180 or U.S. Pipe U-592.

2.16 ANCHOR COUPLINGS

Lengths and sizes shall be as approved by BCWSA. Anchor couplings shall be equal to ACIPCO A 10895 or U.S. Pipe U-591.

2.17 VALVE KEYS

A. Valve keys shall be 72-inches long with a tee handle and a 2-inch square wrench nut. Valve keys shall be furnished by the valve manufacturer. Valve keys shall be equal to Mueller A-24610 or ACIPCO No. 1303.
B. **The Contractor shall provide to the Owner a new valve key per the following schedule.**

<table>
<thead>
<tr>
<th>No. of Valves Installed</th>
<th>No. of Keys to Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 10</td>
<td>1</td>
</tr>
<tr>
<td>11 – 20</td>
<td>2</td>
</tr>
<tr>
<td>21 or more</td>
<td>3</td>
</tr>
</tbody>
</table>

2.18 **CONCRETE**

Concrete shall have a compressive strength of not less than 3000 psi, with not less than 5.5 bags of cement per cubic yard and a slump between 3 and 5-inches. Ready-mixed concrete shall be mixed and transported in accordance with ASTM C 94. Reinforcing steel shall conform to the requirements of ASTM A 615, Grade 60.

PART 3 **EXECUTION**

3.01 **EXISTING UTILITIES AND OBSTRUCTIONS**

A. The Contractor shall call the Utilities Protection Center (UPC) (811) as required by Georgia law (Code Section 25-9-1 through 25-9-13) and all utilities, agencies or departments that own and/or operate utilities in the vicinity of the construction work site at least 72 hours (three business days) prior to construction to verify the location of the existing utilities.

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

1. Provide the required notice to the utility owners and allow them to locate their facilities according to Georgia law. Field utility locations are valid for only 10 days after original notice. The Contractor shall ensure, at the time of any excavation that a valid utility location exists at the point of excavation.

2. Expose the facility, for a distance of at least 200 feet in advance of pipeline construction, to verify its true location and grade. Repair, or have repaired, any damage to utilities resulting from locating or exposing their true location.

3. Avoid utility damage and interruption by protection with means or methods recommended by the utility owner.
4. Maintain a log identifying when phone calls were made, who was called, area for which utility relocation was requested and work order number issued, if any.

C. Conflict with Existing Utilities

1. Horizontal Conflict: Horizontal conflict shall be defined as when the actual horizontal separation between a utility, main, or service and the proposed water main does not permit safe installation of the water main by the use of sheeting, shoring, tieing-back, supporting, or temporarily suspending service of the parallel or crossing facility. The Contractor may change the proposed alignment of the water main to avoid horizontal conflicts if the new alignment remains within the available right-of-way or easement, complies with regulatory agency requirements and after a written request to and subsequent approval by BCWSA. Where such relocation of the water main is denied by BCWSA, the Contractor shall arrange to have the utility, main, or service relocated.

2. Vertical Conflict: Vertical conflict shall be defined as when the actual vertical separation between a utility, main, or service and the proposed water main does not permit the crossing without immediate or potential future damage to the utility, main, service, or the water main. The Contractor may change the proposed grade of the water main to avoid vertical conflicts if the changed grade maintains adequate cover and complies with regulatory agencies requirements after written request to and subsequent approval by BCWSA. Where such relocation of the water main is denied by BCWSA, the Contractor shall arrange to have the utility, main, or service relocated.

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

E. Water and Sewer Separation

1. There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenances, which would permit the passage of any sewage or polluted water into the potable supply. No water pipes shall pass through or contact any part of a sewer manhole.

2. Water mains should maintain a minimum 10 foot edge-to-edge separation from sewer lines, whether gravity or pressure. If the main
cannot be installed in the prescribed easement or right-of-way and provide the 10 foot separation, BCWSA may reduce this distance provided the water main be placed in a separate trench or undisturbed earth shelf with a minimum of 18-inches of vertical separation between the bottom of the water main to the top of the sewer. Should neither of these two separation criteria be possible, the water main shall be installed below the sewer with a minimum vertical separation of 18-inches.

3. The water main, when installed below the sewer, shall be encased either in a watertight casing pipe or in concrete with a minimum 6-inch concrete depth to the first joint in each direction. The encasement shall extend 10 feet on both sides of the crossing. Where water mains cross the sewer, the pipe joint adjacent to the pipe crossing the sewer shall be cut to provide maximum separation of the pipe joints from the sewer.

3.02 CONSTRUCTION ALONG HIGHWAYS, STREETS AND ROADWAYS

A. Install pipe lines and appurtenances along highways, streets and roadways in accordance with the applicable regulations of, and permits issued by, the Department of Transportation and Barrow County Water and Sewerage Authority with reference to construction operations, safety, traffic control, road maintenance and repair.

B. Traffic Control

1. The Contractor shall provide, erect and maintain all necessary barricades, suitable and sufficient lights and other traffic control devices; provide qualified flagmen where necessary to direct traffic; take all necessary precautions for the protection of the work and the safety of the public. Flagmen shall be certified by a Georgia DOT approved training program.

2. Construction traffic control devices and their installation shall be in accordance with the current Manual On Uniform Traffic Control Devices for Streets and Highways.

3. Placement and removal of construction traffic control devices shall be coordinated with the Georgia Department of Transportation and Barrow County Water and Sewerage Authority a minimum of 48 hours in advance of the activity.

4. Placement of construction traffic control devices shall be scheduled ahead of associated construction activities. Construction time in street
right-of-way shall be conducted to minimize the length of time traffic is disrupted. Construction traffic control devices shall be removed immediately following their useful purpose. Traffic control devices used intermittently, such as "Flagmen Ahead", shall be removed and replaced when needed.

5. Existing traffic control devices within the construction work zone shall be protected from damage. Traffic control devices requiring temporary relocation shall be located as near as possible to their original vertical and horizontal locations. Original locations shall be measured from reference points and recorded in a log prior to relocation. Temporary locations shall provide the same visibility to affected traffic as the original location. Relocated traffic control devices shall be reinstalled in their original locations as soon as practical following construction.

6. Construction traffic control devices shall be maintained in good repair and shall be clean and visible to affected traffic for daytime and nighttime operation. Traffic control devices affected by the construction work zone shall be inspected daily.

7. Construction warning signs shall be black legend on an orange background. Regulatory signs shall be black legend on a white background. Construction sign panels shall meet the minimum reflective requirements of the Georgia Department of Transportation and Barrow County Water and Sewerage Authority. Sign panels shall be of durable materials capable of maintaining their color, reflective character and legibility during the period of construction.

8. Channelization devices shall be positioned preceding an obstruction at a taper length as required by the current Manual On Uniform Traffic Control Devices for Streets and Highways, as appropriate for the speed limit at that location. Channelization devices shall be patrolled to insure that they are maintained in the proper position throughout their period of use.

C. Construction Operations

1. Perform all work along highways, streets and roadways to minimize interference with traffic.

2. Stripping: Where the pipe line is laid along road right-of-way, strip and stockpile all sod, topsoil and other material suitable for right-of-way restoration.
3. 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.

4. Shaping: Reshape damaged slopes, side ditches, and ditch lines immediately after completing backfilling operations. Replace topsoil, sod and any other materials removed from shoulders.

5. Construction operations shall be limited to 400 feet along areas, including clean-up and utility exploration.

D. 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 in a timely manner.

E. Drainage Structures: Keep all side ditches, culverts, cross drains, and other drainage structures clear of excavated material. Care shall be taken to provide positive drainage to avoid ponding or concentration of runoff.

F. Landscaping Features: Landscaping features shall include, but are not necessarily limited to: fences; property corners; cultivated trees and shrubbery; manmade improvements; subdivision and other signs within the right-of-way and easement. The Contractor shall take extreme care in moving landscape features and promptly re-establishing these features.

G. Maintaining Highways, Streets, Roadways and Driveways

1. Maintain streets, highways, roadways and driveways in suitable condition for movement of traffic until completion and final acceptance of the Work.

2. During the time period between pavement removal and completing permanent pavement replacement, maintain highways, streets and roadways by the use of steel running plates. Running plate edges shall have asphalt placed around their periphery to minimize vehicular impact. The backfill above the pipe shall be compacted as specified elsewhere up to the existing pavement surface to provide support for the steel running plates.

3. Furnish a road grader or front-end loader for maintaining highways, streets, and roadways. The grader or front-end loader shall be available at all times.
4. Immediately repair all driveways that are cut or damaged. Maintain them in a suitable condition for use until completion and final acceptance of the Work.

3.03 PIPE DISTRIBUTION

A. Pipe shall be distributed and placed in such a manner that will not interfere with traffic.

B. No street or roadway may be closed for unloading of pipe without first obtaining permission from the proper authorities. The Contractor shall furnish and maintain proper warning signs and obstruction lights for the protection of traffic along highways, streets and roadways upon which pipe is distributed.

C. No distributed pipe shall be placed inside drainage ditches.

D. Distributed pipe shall be placed as far as possible from the roadway pavement, but no closer than five feet from the roadway pavement, as measured edge-to-edge.

3.04 LAYING AND JOINTING PIPE AND ACCESSORIES

A. Lay all pipe and fittings to accurately conform to the lines and grades approved by BCWSA.

B. Pipe Installation

1. Installation of ductile iron water mains and their appurtenances shall be per AWWA C600 (latest edition) and underground installation of polyvinyl chloride (PVC) pressure pipe and fittings for water shall be per AWWA C605 (latest edition), unless stated otherwise in this Section.

2. Proper implements, tools and facilities shall be provided for the safe performance of the Work. All pipe, fittings, valves and hydrants shall be lowered carefully into the trench by means of slings, ropes or other suitable tools or equipment in such a manner as to prevent damage to water main materials and protective coatings and linings. Under no circumstances shall water main materials be dropped or dumped into the trench.

3. All pipe, fittings, valves, hydrants and other appurtenances shall be examined carefully for damage and other defects immediately before installation. Defective materials shall be marked and held for
inspection by the County, who may prescribe corrective repairs or reject the materials.

4. All lumps, blisters and excess coating shall be removed from the socket and plain ends of each pipe, and the outside of the plain end and the inside of the bell shall be wiped clean and dry and free from dirt, sand, grit or any foreign materials before the pipe is laid. No pipe containing dirt shall be laid.

5. Foreign material shall be prevented from entering the pipe while it is being placed in the trench. No debris, tools, clothing or other materials shall be placed in the pipe at any time.

6. As each length of pipe is placed in the trench, the joint shall be assembled and the pipe brought to correct line and grade. The pipe shall be secured in place with approved backfill material.

7. Applying pressure to the top of the pipe, such as with a backhoe bucket, to lower the pipe to the proper elevation or grade, shall not be permitted.

8. Provide copper wire for all PVC pipe. Copper wire shall be attached along the length of the pipe.

C. Alignment and Gradient

1. Lay pipe straight in alignment and gradient or follow true curves as nearly as practicable. Do not deflect any joint more than the maximum deflection recommended by the manufacturer.

2. Maintain a transit, level and accessories on the job to lay out angles and ensure that deflection allowances are not exceeded.

D. Expediting of Work: Excavate, lay the pipe, and backfill as closely together as possible. Do not leave unjointed pipe in the trench overnight. Backfill and compact the trench as soon as possible after laying and jointing is completed. Cover the exposed end of the installed pipe each day at the close of work and at all other times when work is not in progress. If necessary to backfill over the end of an uncompleted pipe or accessory, close the end with a suitable plug, either push-on, mechanical joint, restrained joint.
E. Joint Assembly

1. Push-on, mechanical, flange and restrained type joints shall be assembled in accordance with the manufacturer's recommendations.

2. Each restrained joint shall be inspected by the Contractor to ensure that it has been "homed" 100 percent.

F. Cutting Pipe: Cut ductile iron pipe using an abrasive wheel saw. Cut PVC pipe using a suitable saw; remove all burrs and smooth the end before jointing. The Contractor shall cut the pipe and bevel the end, as necessary, to provide the correct length of pipe necessary for installing the fittings, valves, accessories and closure pieces in the correct location. Only push-on or mechanical joint pipe shall be cut.

G. Polyethylene Encasement: Installation shall be in accordance with AWWA C105 and the manufacturer's instructions. All ends shall be securely closed with tape and all damaged areas shall be completely repaired.

H. Valve and Fitting Installation

1. Prior to installation, valves shall be inspected for direction of opening, number of turns to open, freedom of operation, tightness of pressure-containing bolting and test plugs, cleanliness of valve ports and especially seating surfaces, handling damage and cracks. Defective valves shall be corrected or held for inspection by BCWSA. Valves shall be closed before being installed.

2. Valves, fittings, plugs and caps shall be set and joined to the pipe in the manner specified in this Section for cleaning, laying and joining pipe, except that 12-inch and larger valves shall be provided with special support, such as treated timbers, crushed stone, concrete pads or a sufficiently tamped trench bottom so that the pipe will not be required to support the weight of the valve. Valves shall be installed in the closed position.

3. A valve box shall be provided on each underground valve. They shall be carefully set, centered exactly over the operating nut and truly plumbed. The valve box shall not transmit shock or stress to the valve. The bottom flange of the lower belled portion of the box shall be placed below the valve operating nut. This flange shall be set on brick, so arranged that the weight of the valve box and superimposed loads will bear on the base and not on the valve or pipe. Extension stems shall be installed where depth of bury places the operating nut in excess of 30-inches beneath finished grade so as to set the top of the
operating nut 30-inches below finished grade. The valve box cover shall be flush with the surface of the finished area.

4. No new valve boxes shall be located within a sidewalk or pavement.

5. In no case shall valves be used to bring misaligned pipe into alignment during installation.

6. A valve marker shall be provided for each underground valve. Valve markers shall be installed 6-inches inside the right-of-way or easement.

I. Hydrant Installation

1. Prior to installation, inspect all hydrants for direction of opening, nozzle threading, operating nut and cap nut dimensions, tightness of pressure-containing bolting, cleanliness of inlet elbow, handling damage and cracks. Defective hydrants shall be corrected.

2. All hydrants shall stand plumb and shall have their nozzles parallel with or at right angles to the roadway, with pumper nozzle facing the roadway, except that hydrants having two-hose nozzles 90 degrees apart shall be set with each nozzle facing the roadway at an angle of 45 degrees.

3. Hydrants shall be set to the established grade, with the centerline of the lowest nozzle at least 12-inches above the ground.

4. Each hydrant shall be connected to the main with a 6-inch branch controlled by an independent 6-inch valve. When a hydrant is set in soil that is pervious, drainage shall be provided at the base of the hydrant by placing coarse gravel or crushed stone mixed with coarse sand from the bottom of the trench to at least 6-inches above the drain port opening in the hydrant to a distance of 12-inches around the elbow.

5. When a hydrant is set in clay or other impervious soil, a drainage pit 2 x 2 x 2 feet shall be excavated below each hydrant and filled with coarse gravel or crushed stone mixed with coarse sand under and around the elbow of the hydrant and to a level of 6-inches above the drain port.

6. Hydrants shall be located as approved by BCWSA. In the case of hydrants that are intended to fail at the ground-line joint upon vehicle impact, specific care must be taken to provide adequate soil resistance.
to avoid transmitting shock moment to the lower barrel and inlet connection. In loose or poor load bearing soil, this may be accomplished by pouring a concrete collar approximately 6-inches thick to a diameter of 24-inches at or near the ground line around the hydrant barrel.

J. Vaults

1. Construct the vault or manhole as approved by BCWSA.

2. The floor door shall be cast into the top slab. The floor door drain shall be piped to vault exterior to “daylight.”

3. Manholes shall be constructed such that their walls are plumb.

3.05 CONNECTIONS TO WATER MAINS

A. Make connections to existing pipe lines with tapping sleeves and valves.

B. Location: Before laying pipe, locate the points of connection to existing water mains and uncover as necessary to confirm the nature of the connection to be made.

C. Interruption of Services: Make connections to existing water mains only when system operations permit. Operate existing valves only with the specific authorization and direct supervision of BCWSA.

D. Tapping Saddles and Tapping Sleeves

1. Holes in the new pipe shall be machine cut, either in the field or at the factory. No torch cutting of holes shall be permitted.

2. Prior to attaching the saddle or sleeve, the pipe shall be thoroughly cleaned, utilizing a brush and rag, as required.

3. Before performing field machine cut, the water-tightness of the saddle or sleeve assembly shall be pressure tested. The interior of the assembly shall be filled with water. An air compressor shall be attached, which will induce a test pressure as specified in this Section. No leakage shall be permitted for a period of five minutes.

4. After attaching the saddle or sleeve to an existing main, but prior to making the tap, the interior of the assembly shall be disinfected. All surfaces to be exposed to potable water shall be swabbed or sprayed with a one percent hypochlorite solution.
E. Connections Using Solid Sleeves: Where connections are approved by BCWSA using solid sleeves, the Contractor shall furnish materials and labor necessary to make the connection to the existing pipe line.

F. Connections Using Couplings: Where connections are approved by BCWSA using couplings, the Contractor shall furnish materials and labor necessary to make the connection to the existing pipe line, including all necessary cutting, plugging and backfill.

3.06 THRUST RESTRAINT

A. Provide restraint at all points where hydraulic thrust may develop.

B. Retainer Glands: Provide retainer glands where approved by BCWSA. Retainer glands shall be installed in accordance with the manufacturer's recommendations, particularly, the required torque of the actuating screws. The Contractor shall furnish a torque wrench to verify the torque on all actuating screws which do not have inherent torque indicators.

C. Harnessing

1. Provide harness rods only where specifically approved by BCWSA.

2. Harness rods shall be manufactured in accordance with ASTM A 36 and shall have an allowable tensile stress of no less than 22,000 psi. Harness rods shall be hot dip galvanized or field coated with bitumastic before backfilling.

3. Where possible, harness rods shall be installed through the mechanical joint bolt holes. Where it is not possible, provide 90 degree bend eye bolts.

4. Eye bolts shall be of the same diameter as specified in AWWA C111 for that pipe size. The eye shall be welded closed. Where eye bolts are used in conjunction with harness rods, an appropriate size washer shall be utilized with a nut on each end of the harness rod. Eye bolts shall be of the same material and coating as the harness rods.

D. Hydrants: Hydrants shall be connected to the water main by the following method:

1. For mains 12-inches and smaller, the isolation valve shall be attached to the main by connecting the valve to the hydrant tee.
2. The isolation valve shall be attached to the hydrant by providing an anchor coupling between the valve and hydrant, if the hydrant and valve are less than two feet apart. Otherwise, provide ductile iron pipe with retainer glands on the hydrant and valve.

E. Thrust Collars: Collars shall be constructed as approved by BCWSA. Concrete and reinforcing steel shall meet the requirements as specified in this Section. The welded-on collar shall be designed to meet the minimum allowable load. The welded-on collar shall be attached to the pipe by the pipe manufacturer.

F. Concrete Blocking

1. Provide concrete blocking for all bends, tees, valves, and other points where thrust may develop, except where other exclusive means of thrust restraint are specifically approved by BCWSA.

2. Concrete shall be as specified in Section 2.19.

3. Form and pour concrete blocking at fittings as required by BCWSA. Pour blocking against undisturbed earth. Increase dimensions when required by over excavation.

3.07 INSPECTION AND TESTING

A. Pressure and Leakage Test

1. All sections of the water main subject to internal pressure shall be pressure tested in accordance with AWWA C600 and/or AWWA C605, as applicable. A section of main will be considered ready for testing after completion of all thrust restraint and backfilling.

2. Each segment of water main between main valves shall be tested individually.

3. Test Preparation

   a. For water mains less than 24-inches in diameter, flush sections thoroughly at flow velocities, greater than 2.5 feet per second, adequate to remove debris from pipe and valve seats. For water mains 24-inches in diameter and larger, the main shall be carefully swept clean, and mopped if directed by BCWSA. Partially open valves to allow the water to flush the valve seat.

   b. Partially operate valves and hydrants to clean out seats.
c. Provide temporary blocking, bulkheads, flanges and plugs as necessary, to assure all new pipe, valves and appurtenances will be pressure tested.

d. Before applying test pressure, air shall be completely expelled from the pipeline and all appurtenances. Insert corporation cocks at highpoints to expel air as main is filled with water as necessary to supplement automatic air valves.

e. Fill pipeline slowly with water. Provide a suitable pump with an accurate water meter to pump the line to the specified pressure.

f. The differential pressure across a valve or hydrant shall equal the maximum possible, but not exceed the rated working pressure. Where necessary, provide temporary backpressure to meet the differential pressure restrictions.

g. Valves shall not be operated in either the opening or closing direction at differential pressures above the rated pressure.

4. Test Pressure: Test the pipeline at 200 psi measured at the lowest point for at least two hours. Maintain the test pressure within 5 psi of the specified test pressure for the test duration. Should the pressure drop more than 5 psi at any time during the test period, the pressure shall be restored to the specified test pressure. Provide an accurate pressure gage with graduation not greater than 5 psi.

5. Leakage

a. Leakage shall be defined as the sum of the quantity of water that must be pumped into the test section, to maintain pressure within 5 psi of the specified test pressure for the test duration plus water required to return line to test pressure at the end of the test. Leakage shall be the total cumulative amount measured on a water meter.

b. Leakage through existing valves shall not relieve the Contractor from successfully completing the leakage test.
6. Test Results: No test section shall be accepted if the leakage exceeds the limits determined by the following formula:

\[
L = \frac{SD \cdot (P)^{1/2}}{133,200} \quad \text{for ductile iron pipe (per AWWA C600)}
\]

\[
L = \frac{SD \cdot (P)^{1/2}}{148,000} \quad \text{for PVC pipe (per AWWA C605)}
\]

Where:
- \( L \) = allowable leakage, in gallons per hour
- \( S \) = length of pipe tested, in feet
- \( D \) = nominal diameter of the pipe, in inches
- \( P \) = average test pressure during the leakage test, in pounds per square inch (gauge)

If the water main section being tested contains lengths of various pipe diameters, the allowable leakage shall be the sum of the computed leakage for each diameter. The leakage test shall be repeated until the test section is accepted. All visible leaks shall be repaired regardless of leakage test results.

7. Completion: After a pipeline section has been accepted, relieve test pressure. Record type, size and location of all outlets on record drawings.

3.08 DISINFECTING PIPELINE

A. After successfully pressure testing each pipeline section, disinfect in accordance with AWWA C651 for the continuous-feed method and these Specifications.

B. Specialty Contractor: Disinfection shall be performed by an approved specialty contractor. Before disinfection is performed, the Contractor shall submit a written procedure for approval before being permitted to proceed with the disinfection. This plan shall also include the steps to be taken for the neutralization of the chlorinated water.

C. Chlorination

1. Apply chlorine solution to achieve a concentration of at least 25 milligrams per liter free chlorine in new line. Retain chlorinated water for 24 hours.
2. Chlorine concentration shall be recorded at every outlet along the line at the beginning and end of the 24 hour period.

3. After 24 hours, all samples of water shall contain at least 10 milligrams per liter free chlorine. Re-chlorinate if required results are not obtained on all samples.

D. Disposal of Chlorinated Water: Reduce chlorine residual of disinfection water to less than one milligram per liter if discharged directly to a body of water or to less than two milligrams per liter if discharged onto the ground prior to disposal. Treat water with sulfur dioxide or other reducing chemicals to neutralize chlorine residual. Flush all lines until residual is equal to existing system.

E. Bacteriological Testing: After final flushing and before the water main is placed in service, the Contractor shall collect samples from the line and have tested for bacteriological quality in accordance with the rules of the Georgia Department of Natural Resources, Environmental Protection Division. Testing shall be performed by a laboratory certified by the State of Georgia. Re-chlorinate lines until required results are obtained.

3.09 PROTECTION AND RESTORATION OF WORK AREA

A. General: Return all items and all areas disturbed, directly or indirectly by work under these Specifications, to their original condition or better, as quickly as possible after work is started.

1. The Contractor shall plan, coordinate, and prosecute the work such that disruption to personal property and business is held to a practical minimum.

2. All construction areas abutting lawns and yards of residential or commercial property shall be restored promptly. Backfilling of underground facilities, ditches, and disturbed areas shall be accomplished on a daily basis as work is completed. Finishing, dressing, and grassing shall be accomplished immediately thereafter, as a continuous operation within each area being constructed and with emphasis placed on completing each individual yard or business frontage. Care shall be taken to provide positive drainage to avoid ponding or concentration of runoff.

3. Handwork, including raking and smoothing, shall be required to ensure that the removal of roots, sticks, rocks, and other debris is removed in order to provide a neat and pleasing appearance.
4. The Department of Transportation's engineer shall be authorized to stop all work by the Contractor when restoration and cleanup are unsatisfactory and to require appropriate remedial measures.

B. Man-Made Improvements: Protect, or remove and replace with BCWSA’s approval, all fences, walkways, mail boxes, pipe lines, drain culverts, power and telephone lines and cables, property pins and other improvements that may be encountered in the Work.

C. Cultivated Growth: Do not disturb cultivated trees or shrubbery unless approved by the County. Any such trees or shrubbery which must be removed shall be heeled in and replanted under the direction of an experienced nurseryman.

D. Cutting of Trees: Do not cut trees for the performance of the work except as absolutely necessary. Protect trees that remain in the vicinity of the work from damage from equipment. Do not store spoil from excavation against the trunks. Remove excavated material stored over the root system of trees within 30 days to allow proper natural watering of the root system. Repair any damaged tree over 3-inches in diameter, not to be removed, under the direction of an experienced nurseryman. All trees and brush that require removal shall be promptly and completely removed from the work area and disposed of by the Contractor. No stumps, wood piles, or trash piles will be permitted on the work site.

E. Disposal of Rubbish: Dispose of all materials cleared and grubbed during the construction of the Project in accordance with the applicable codes and rules of the appropriate county, state and federal regulatory agencies.

F. Swamps and Other Wetlands

1. The Contractor shall not construct permanent roadbeds, berms, drainage structures or any other structures which alter the original topographic features within the easement.

2. All temporary construction or alterations to the original topography will incorporate measures to prevent erosion into the surrounding swamp or wetland. All areas within the easement shall be returned to their original topographic condition as soon as possible after work is completed in the area. All materials of construction and other non-native materials shall be disposed by the Contractor.

3. The Contractor shall provide temporary culverts or other drainage structures, as necessary, to permit the free migration of water between

3-28

(Rev. September 2011)
portions of a swamp, wetland or stream which may be temporarily divided by construction.

4. The Contractor shall not spread, discharge or dump any fuel oil, gasoline, pesticide, or any other pollutant to adjacent swamps or wetlands.

END OF SUBSECTION
PART 1 GENERAL

1.01 SCOPE

A. The work covered by this Section includes furnishing all materials and equipment, providing all required labor and installing water service connections and all appurtenant work according to these Specifications and/or to the Water Connection Detail as shown schematically on the Standard Detail Drawings.

B. Water meters are not to be furnished nor installed. However, the water meter connection must be compatible with the water meters currently used by the County.

1.02 LOCATIONS

Locations shall be directed by the County along the route of the water mains.

1.03 SERVICE COMPATIBILITY

A. It is the intent of these Specifications that the water service connections shall duplicate those presently being provided by the County in order to be compatible with their service maintenance procedures.

B. Water Service Connections shall include tapping saddle on all sizes of mains, 3/4-inch corporation stop at the main, 3/4-inch diameter service pipe from main to meter, 3/4-inch meter, 3/4-inch curb stop, meter box and all fittings through the outlet of the service line at the meter.

1.04 QUALITY CONTROL

All materials installed under this Section shall have the approval of the NSF for water services.

PART 2 PRODUCTS

2.01 MATERIALS AND CONSTRUCTION

A. Service Line: Copper Tubing: Tubing shall be ASTM B88, Type K. Fittings shall be brass with compression connection inlets and outlets, ANSI B16.26.
Where required, adaptors shall be brass ANSI B16.18. Unions shall be cast bronze. Joints shall be compression type. All fittings shall be of bronze construction with compression type connection. Copper tubing shall be used from the new water main to the new meter box and between the meter boxes as shown on the Drawings.

B. Water meters for potable or detector service shall comply with AWWA C700 and be the positive displacement type. Meters shall be rated for cold water service of minimum 150 psi working pressure. Water meters shall be 3/4" x 5/8" size and shall be Neptune Radio Read ARB, register in U.S. Gallons.

C. Meter Box and Lid shall be Pentair MB2 Plastic Meter Box with Under Mount Lid or a BCWSA approved equal.

D. Corporation Stop shall be 3/4" minimum, bronze with compression joint; Ford Model F1000, pack joint for copper or plastic pipe or a BCWSA approved equal.

E. Curb Stop shall be Ford Model B-44-333MW with padlock wings; curb stop shall be located inside the meter box or a BCWSA approved equal.

F. Insert Stiffeners for 3/4" tubing and/or pipe shall be stainless steel, Ford Model 51 or a BCWSA approved equal or a BCWSA approved equal.

G. 3/4" Ball Valve shall be WATTS Model 600 or a BCWSA approved equal.

H. Turf Boxes shall be Rooks #60 type or a BCWSA approved equal.

I. 3/4" x 6" Brass Nipple with Male Ends.

J. Tapping Saddle Clamp for connecting to Water Mains shall be Ford Model S90 for 2" pipe size, Ford Model 202BS for 4" and larger pipe sizes or a BCWSA approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. Water Service Connections

1. Water service connections shall be installed to the properties adjacent to the water transmission mains both to the same side of the roadway.
(Short Side Service) and to the opposite side of the roadway (Long Side Service) as directed by the County.

2. Water service connections installed under roadway (long side service) shall be pulled through a 2” PVC casing. Casings shall be installed through a bored hole approximately equal in diameter to the external diameter of the casing. Minimum cover under roadway shall be four feet. At other locations, minimum cover shall be two feet.

3. Installation shall conform to the details for water service connections appearing schematically on the Standard Detail Drawings. Contractor shall provide any and all appurtenant work required to provide the intended water service connections.

4. Extreme care shall be taken to provide adequate compaction and support under the service tubing adjacent to the main in order to prevent deflection of the tubing at the point of connection to the corporation stop.

5. No new meter boxes shall be located within a sidewalk or pavement.

B. Connections to Water Mains for water service

1. Connections to ductile iron pipe water mains shall be by the direct tap method or service clamp in full accordance with AWWA requirements.

2. Connections to polyvinyl chloride pipe water mains shall be made using a full body service clamp.

3. Pressure ratings shall be as required for the installation.

4. Tapping Saddle clamp shall be Ford Model S90 for 2” pipe size, Ford Model 202BS for 4” and larger pipe sizes or a BCWSA approved equal.

B. Transfer of Service: Immediately before connecting to the new or existing meter, all service lines shall be flushed to remove any foreign matter. Any special fittings required to reconnect the meter to the new copper service line, or the existing private service line, shall be provided by the Contractor. To minimize out of service time, the Contractor shall determine the connections to be made and have all the required pipe and fittings on hand before shutting off the existing service. After completing the connection, the new corporation stop shall be opened and all visible leaks shall be repaired.
END OF SECTION
SECTION 4
STANDARD CONSTRUCTION DETAILS
GATE VALVE INSTALLATION

STANDARD CONSTRUCTION DETAILS

SCALE: NONE
DATE: JUNE 2002
ABANDONED LINE VALVE

STANDARD CONSTRUCTION DETAILS

SCALE: NONE
DATE: JUNE 2002
NOTE: 1. WATER METERS, METER BOXES & LIDS TO BE PROVIDED BY THE CONTRACTOR.
NOTES:

1. VALVES ARE TO BE LOCATED 5'-0' BEHIND THE CURB IN THE RIGHT OF WAY.

2. GATE VALVES ARE NOT REQUIRED ON DEAD-END LEGS LESS THAN 1000 LINEAR FEET IN LENGTH.

3. VALVES SHALL NOT BE LOCATED IN DITCH LINE.
NOTE:
1. MAXIMUM 4 WATER METER SERVICES CONNECTED TO 2" PVC LOOP.
NOTES:

1. ALL DIMENSIONS ARE MEASURED FROM BACK OF CURB, REGARDLESS OF R/W WIDTH.

2. BEFORE ANY UTILITY IS INSTALLED, THE ENTIRE WIDTH OF THE R/W SHALL BE AT FINISHED GRADE, AND ALL CONCRETE CURBING SET AT FINAL GRADES.

3. THE FINISHED GRADE WITHIN THE R/W SHALL NOT EXCEED A 2% SLOPE.

4. IN GENERAL, THE DEEPEST UTILITIES SHOULD BE INSTALLED FIRST TO MINIMIZE ANY POSSIBLE INTERFERENCE WITH LATERALS OR SERVICE LINES.

5. STREET OPENING PERMITS ARE REQUIRED BEFORE ANY COMPLETED PAVEMENT CAN BE CUT FOR ANY PURPOSE.

6. IN CUL-DE-SAC STREETS, ALL DIMENSIONS SHALL REMAIN IDENTICAL TO STANDARD STREET SPACING.

7. EACH UTILITY SHALL BE RESPONSIBLE FOR REPAIR OF ANY DAMAGE THEY CREATE TO OTHER UTILITY LINES, OR TO THE STREET IMPROVEMENTS WITHIN THE R/W.

8. ALL STREET LIGHTS SHALL REMAIN WITHIN THE POWER UTILITY CORRIDOR.
LEGEND

1. 4'-0" X 4'-0" WATERTIGHT ACCESS DOOR.
2. CAST IN PLACE CONCRETE OR PRECAST CONCRETE.
3. DUCTILE IRON FLANGED SHORT JOINT.
4. FIRE LINE DOUBLE DETECTOR CHECK BACK FLOW PREVENTER ASSEMBLY.
5. DOMESTIC LINE DOUBLE CHECK BACK FLOW PREVENTER (NOT SHOWN). INSTALL SIMILAR TO FIRE LINE DDC. SEE PLAN AND END SECTION.

NOTE:
1. INSTALL VAULT SO THAT ONLY THE TOP 4" OF THE HATCH EXTENDS ABOVE FINISH GRADE.
200 PSI TEST PRESSURE (MAXIMUM)
2000 PSF SOIL BEARING (MINIMUM)

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<td>X* = DIAMETER OF PIPE TO BE BLOCKED</td>
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Barrow County Water & Sewerage Authority

THRUSt BLOCKING
STANDARD CONSTRUCTION DETAILS
SCALE: NONE DATE: JUNE 2002
WATER MAIN BEDDING

STANDARD CONSTRUCTION DETAILS

SCALE: NONE      DATE: JUNE 2002

**Barrow County**

*Water & Sewerage Authority*
POUR CONCRETE THRUST BLOCKING AGAINST UNDISTURBED EARTH CONCENTRIC AROUND WATER MAIN

NEW PIPE

EXIST. PIPE

MEGALUG RETAINER GLAND

REINFORCING STEEL (TYP.)

PLAN

15' MIN.

RETAINER GLAND (2 REQUIRED FOR PIPE SIZE GREATER THAN 16")

SECTION

<table>
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<tr>
<th>WATER MAIN DIAM.</th>
<th>CONC. COLLAR DIM.</th>
<th>STEEL REINFORCING</th>
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TEST PRESSURE: 250 PSI
SOIL BEARING PRESSURE: 3000 PSF
Barrow County
Water & Sewerage Authority

LARGE WATER SERVICE METER/BACKFLOW PREVENTER

STANDARD CONSTRUCTION DETAILS

SCALE: NONE  DATE: JUNE 2002

NOTES:
1. ALL PIPING TO BE DUCTILE IRON PIPE.
2. VAULT SHALL BE REINFORCED CONCRETE (MIN. 3000 PSI) IN ACCORDANCE WITH ASTM C855 AND ASTM C913 FOR HS 20–44 WHEEL LOADING.
3. INSTALL ALUMINUM ACCESS DOORS IN ACCORDANCE WITH MANUFACTURER’S SPECIFICATIONS.
4. BYPASS PIPING OMITTED FROM SECTION VIEW FOR CLARITY.
5. SIZE VAULT TO MAINTAIN MINIMUM CLEARANCE AROUND FITTINGS AND PIPING.

REVISED: AUGUST 2011
12" DIA. MAINS AND SMALLER
USE HYDRANT TEE

16" DIA. MAINS AND LARGER USE
MJ WELDED OUTLET OR MJ TAPPING
SADDLE w/ 12" LONG ANCHOR COUPLING

ANCHOR COUPLING

6" 45° BEND
MJ X MJ
6" 45° BEND
MJ X MJ
ANCHOR COUPLING

12" DIA. MAINS AND SMALLER
USE HYDRANT TEE

16" DIA. MAINS AND LARGER USE
MJ WELDED OUTLET OR MJ TAPPING
SADDLE w/ 12" LONG ANCHOR COUPLING
4' MIN. COVER
BELOW EDGE OF
PAVEMENT OR
3' BELOW DITCH
BOTTOM WHICH
EVER IS LOWER.

RESTORE ROADWAY DITCH
TO MINIMUM OF 1.5' BELOW E.O.P.
PROVIDE UNIFORM GRADE TO
ENSURE PROPER DRAINAGE

NOTE: * UNLESS SHOWN OTHERWISE.

INCREASE COVER WHERE
NECESSARY TO PROVIDE
MIN. CLEARANCE
UNDER CULVERT.
CAST IRON VALVE BOX

EXTENSION STEM, ATTACH TO VALVE OPERATING NUT PER MFR'S. RECOMMENDATION

4 1/2" DIA. x 1/4" PLATE WELDED TO EXTENSION STEM

APPROX. 9" TO FINISHED GRADE

5 1/4"

Barrow County
Water & Sewerage Authority

EXTENSION STEM
STANDARD CONSTRUCTION DETAILS
SCALE: NONE          DATE: JUNE 2002
NOTES:

1. THE NEAR EDGE OF THE PIT CAN BE NO CLOSER TO THE EDGE OF THE PAVEMENT THAN ITS DEPTH BELOW THE SURFACE OF THE PAVEMENT UNLESS BULKHEADED.

SECTION A–A

30' MIN. FOR CONTROLLED
ACCES ROADS & 10' MIN. FOR
PRIMARY AND SECONDARY ROADS
(SEE NOTE 1)

3' MIN.

SLOPE CASING PIPE, 0.3% MIN.
(OR AS SHOWN ON PROFILE)

STEEL CASING PIPE

48" COVER
MIN.

PROVIDE SUPPORT WITH
SPACERS LOCATED 10' O.C. MIN.

CASING END SEAL
RUBBER W/ S.S.
BANDS TYP.
EACH END

30' MIN. FOR CONTROLLED
ACCES ROADS & 10' MIN. FOR
PRIMARY AND SECONDARY ROADS
(SEE NOTE 1)

3' MIN.

SLOPE CASING PIPE, 0.3% MIN.
(OR AS SHOWN ON PROFILE)

STEEL CASING PIPE

48" COVER
MIN.

PROVIDE SUPPORT WITH
SPACERS LOCATED 10' O.C. MIN.

CASING END SEAL
RUBBER W/ S.S.
BANDS TYP.
EACH END
WATER MAIN STUB-OUT

STANDARD CONSTRUCTION DETAILS

SCALE: NONE
DATE: JUNE 2002

Barrow County
Water & Sewerage Authority

D = MIN. DIST. INTO UNDISTURBED EARTH (TYP.)

POUR AGAINST UNDISTURBED EARTH
REINFORCING STEEL (TYP.)

D.I.P. WATER MAIN
B
R.J. PLUG

PLAN

CONC. THRUST COLLAR
(CONCENTRIC AROUND WATER MAIN)

15' MIN.

CAST IRON VALVE BOX

GATE OR BUTTERFLY VALVE (SAME SIZE AS WATER MAIN)

RETAINER GLANDS

RETAINER GLAND (2 REQ'D FOR PIPE SIZE GREATER THAN 16 INCH)

SECTION

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TEST PRESSURE: 200 P.S.I. MAX
SOIL BEARING PRESSURE: 3000 P.S.F. MIN
CONCRETE REPLACEMENT DETAIL

2" TYPE "F" SURFACE COURSE

ASPHALT REPLACEMENT DETAIL

6" CRUSHED STONE

BACKFILL TO BE TAMPERED IN 6" LAYERS

12" TYP.
PART 1 GENERAL

1.01 SCOPE OF WORK

This Section describes the methods by which measurement will be made of the quantities for which payment will be made for the project.

1.02 MEASUREMENT OF WORK

A. WORK shall be measured by the ENGINEER or his representative, with assistance from the CONTRACTOR prior to preparation of a payment request by the CONTRACTOR.

B. Unit quantities that are measured in place shall be measured monthly. The CONTRACTOR shall give the ENGINEER a minimum of two days notice for making all required measurements.

C. Materials that must be measured as delivered shall be measured at the time of delivery by the ENGINEER or his representative; the CONTRACTOR shall provide sufficient advance notice so that such measurements can be made.

D. WORK completed shall be measured for completion against the schedule of values provided by the CONTRACTOR in accordance with the General Conditions. Related work necessary for a complete and operational job, such as relocation of mail boxes removal of trees, relocation of utilities, field engineering, clearing and grubbing, traffic control, etc., not specifically identified as a pay item shall be included in the unit price bid. No additional payments will be made for such activities.

1.03 PROGRESS PAYMENTS

Progress payments shall be as follows:

A. All items of WORK not specifically listed in the Bid Schedule shall be considered incidental to the construction, and the cost of all such work and material shall be included in the prices bid for various items listed.

B. All items listed for measurement and payment shall include all machinery, plant, materials and labor, etc., to successfully and satisfactorily complete WORK specified.

C. Payment: The CONTRACTOR will receive payment only for the items listed in the Bid Schedule of this contract, and no separate payments will be made for the work under any section of the CONTRACT DOCUMENTS except as provided for in the Bid Form. Where measurements are required to be made by the ENGINEER for the payment of a pay item, the failure of the CONTRACTOR to give adequate notification or failure of the CONTRACTOR to give the ENGINEER assistance for the measurement shall result in the forfeiture of payment for the work or item which was not measured.
D. WORK to be paid for as a "Lump Sum" shall be measured for completion against the "Schedule of Values" provided by the CONTRACTOR. The "Schedule of Values" shall be submitted at the preconstruction conference and shall include quantities and prices of items aggregating the total "Lump Sum" and will subdivide the work into component parts in sufficient detail to serve as the basis for progress payments during construction.

PART 2 PRODUCTS

2.01 STORED MATERIALS

Partial payment shall be made for approved materials stored at the project site, provided invoices for said materials are furnished in accordance with payment request submittal.

PART 3 EXECUTION

3.01 GEOTECHNICAL ALLOWANCE

The basis of payment for this item shall be a cash allowance. The soils technician shall be chosen by the OWNER. The technician shall make periodic site visits, scheduled by the ENGINEER, to verify compaction is in conformance with the specifications and drawings. All incidental overhead/processing/handling costs incurred by the CONTRACTOR for the geotechnical testing cost allowance shall be included in the unit prices bid per linear foot of various sizes and types of pipe laid as provided in the Proposal. If additional compaction tests are required as a result of poor compaction of trenches, the additional cost for said tests shall be the responsibility of the CONTRACTOR.

3.02 MOBILIZATION

A. The basis of payment for this item shall be lump sum.

B. Work performed under this item shall include the movement of personnel, equipment, supplies and incidentals to and from the project site as needed to complete work on the various contract items and for premiums on bonds and insurance for the project. Material for bid items shall not be included in Mobilization.

3.03 ROCK REMOVAL

A. Quantities for rock removal shall be expressed in cubic yards, as defined below, in accordance with the plans and specifications.

B. If rock is encountered, the CONTRACTOR is to expose the rock to the required limits of excavation. The OWNER or ENGINEER shall then attain sufficient topographic data to establish the limits of the rock to be excavated. No backfill shall be placed until rock measurements are made. If backfill is placed or rock is excavated before measurements are made, no compensation will be allowed for such rock excavation.

C. For water mains, the quantity of rock to be paid for shall be calculated from the upper surface data obtained to one foot below the pipe invert multiplied by five feet trench width.
No additional payment shall be made for manhole excavation or benching. The price for this work shall be included in the unit price bid for rock excavation.

D. The quantity of rock to be paid for the wet well and/or valve vault shall be calculated from the upper surface data obtained to one foot below the well base and/or valve vault multiplied by the area of the wet well (outside diameter). No additional payment will be made for benching.

E. The quantity of rock to be paid for the rock encountered as part of the general grading shall extend the upper surface data obtained to one foot below the proposed grade multiplied by the horizontal area of rock disturbed within the grading limits.

3.04 BORE AND JACK CASINGS

A. Measurement of all casing pipe shall be actual number of linear feet made from bulkhead to bulkhead along the centerline of actual casing placed under the respective items, uncased boring, jacked steel casing, or steel casing/open cut, as indicated on the Drawings.

B. Payment for each size and installation method of casing installed shall be in full compensation for all excavation, rock excavation, dewatering, sheeting, shoring, receiving pits, concrete, grout, steel casing pipe, end seals, spacers, welding, backfill and all other materials, labor, tools, and equipment necessary for proper completion of the Work as specified or indicated on the Drawings.

C. Unit price bid shall include cost of any warning signs and/or flagmen that may be required. CONTRACTOR is to determine need for such, prior to submitting bid price.

D. No payment shall be made for incomplete or unacceptable borings, for realignment, or for increased length for the convenience of the CONTRACTOR.

3.05 REMOVING AND REPLACING PAVEMENT

A. The quantities for various types of drive repair for which payment will be made shall be for linear feet of driveway replaced with the same type and thickness of pavement existing prior to construction, measured along the centerline of the trench for pipe placed in or across existing driveways. Concrete and asphalt drives repaired with gravel shall be counted as gravel drive repair.

B. The quantities for asphalt pavement repair for which payment will be made shall be for linear feet measured along the centerline of the trench for pipe placed in or across existing roadways.

C. Payment for driveway and roadway replaced shall be made for the quantities determined in the manner specified above at the applicable contract price. This amount, so paid, shall be compensation in full for cutting and removal of existing pavements, furnishing all labor, materials, tools, equipment, services and other work in connection with or incidental to the construction.
3.06 DUCTILE IRON PIPE WATER MAINS

A. The quantities of the various sizes and types of water mains will be measured along the centerline of the pipe from center of fitting to center of fitting or to the end of the pipeline. No deduction will be made for fittings or valves.

B. The price bid shall include, but not be limited to, the pipe materials, gaskets, bolts, glands, concrete blocking, concrete thrust collars; testing and disinfection including temporary connections and blow-offs; all labor, equipment, clearing and removal and disposal of clearing debris, stripping, storing, and replacement of top soil in lawn and garden areas, excavation, dewatering of trenches, removal and replacement of signs and mailboxes in the path of construction activities, replacement of mailbox approaches, fences, curb and gutter, etc., protection of existing utilities (both overhead and underground), storm pipes, culverts, drainage ditches, all benching, sheeting and bracing, crushed stone bedding, tamping and compaction and backfilling, roadway shoulder repairs, traffic maintenance and protection, dressing and final grading, grassing, cleanup, as-built drawings, and all other work incidental to place the water mains as indicated on the Drawings.

C. Unit price bid shall include cost for coordination with Georgia Department of Transportation representatives and roadway contractor before and during construction, and shall include survey work to accurately place the water main and appurtenances horizontally and vertically. CONTRACTOR is to determine need for such, prior to submitting bid price.

3.07 WATER MAIN VALVES

A. The quantities of the various sizes and types of valves will be the actual number installed by the CONTRACTOR and approved by the ENGINEER.

B. The price bid shall include, but not be limited to, the valve, all labor, necessary equipment, fittings, rodding, blocking, concrete pad, debris cap, valve box or manhole. Valves shall be paid for at the unit price bid. Payment will not be made for valves used for temporary connections or blow-offs.

3.08 AIR RELEASE VALVES

A. The quantities to be paid under this item shall be the actual number of air release valves installed by the CONTRACTOR and approved by the ENGINEER.

B. The price bid shall include, but not be limited to, the air valve and surge check valve, gate valve, factory welded-on tee, manhole base and riser sections, top slabs, frames and covers, concrete, excavation, bedding, foundation cushion, and all labor, tools, and equipment necessary to complete the Work as specified and indicated on the Drawings.
3.09 SALVAGE EXISTING AIR RELEASE VALVE

A. The quantities to be paid under this item shall be the actual number of existing air release valve(s) removed and delivered to a location in Barrow County specified by the Owner.

B. The price bid shall include all materials, labor, tools and equipment for excavation, disconnecting, plugging or blocking openings in existing main, removal and disposal of manhole sections and top slab, backfilling and compacting including stone, and transporting and delivery of the complete air release valve assembly.

3.10 CONNECTION TO EXISTING WATERLINE (WET CUT-IN)

The price bid for the connection to the various sizes of existing waterline shall be for the actual number of connections performed and shall include clearing, excavation, connection to existing line with new line, coordinating shutdown with OWNER, compliance with required time constraints including work after normal working hours (e.g. nights, weekends) if necessary, fittings, labor, equipment, backfilling, testing, grassing, cleanup, and all other work incidental to the connection.

3.11 CUT, PLUG, AND ABANDON EXISTING WATERLINES

The basis of payment for this item shall be lump sum to include all labor, equipment, and materials necessary to properly abandon the various sizes of existing waterlines throughout the project limits, including locating existing waterlines, removal of water from lines, filling abandoned water line with flowable fill per GDOT Standards Specifications, properly plugging and sealing all abandoned items, and verification that all existing service connections are changed from the existing lines to the new lines.

3.12 EROSION AND SEDIMENTATION CONTROLS AND SEEDING

A. Measurement for the following items shall be as indicated. Best Management Practices (BMPs) shall conform to the approved Drawings for Erosion and Sedimentation Control or as directed by the design engineer or GCDWR.

a. Hay Bales: Payment for hay bales shall be based on the number of hay bales installed.

b. Temporary Silt Fence Type ‘C’: Payment for temporary silt fence shall be based on the number of lineal feet installed. No payment will be made for silt fence required to be reinstalled for any reason.

c. Dry Straw or Hay Mulch: Payment for straw or hay mulch shall be based on the number of tons of straw or hay mulch installed. No additional payment shall be made for maintenance of mulch.

d. Seeding and Mulch: Payment for temporary and permanent seeding shall be based on the number of linear feet of temporary and permanent seeding installed over the entire disturbed area width, as measured along the centerline of pipe, at the
B. The unit price for each item shall include all labor, equipment, and materials necessary for furnishing, placing, maintenance, and removal of each item as applicable. In addition, unit price shall include all costs for inspection, monitoring, and reporting on the erosion and sedimentation controls. There will be no separate payment for the installation or maintenance of construction exits.

3.13 CRUSHER RUN BACKFILL (IF AUTHORIZED BY OWNER)

A. The quantity of crusher run backfill shall be the actual number of tons placed, as directed by Barrow County.

B. The unit price bid shall include the furnishing of all materials, labor, tools, traffic control and appliances necessary to complete the Work as herein specified, shown or ordered. Included shall be the costs of additional excavation beyond trench width to provide firm foundation and any costs of furnishing necessary work beyond the limits of measurement as defined under these specifications. Payment will not be made when crusher run backfill is used by the Contractor for the Contractor’s convenience or when used by the Contractor to simplify compaction.
GENERAL NOTES:

1. OWNER: BARROW COUNTY WATER DEPARTMENT
   650 Crabapple Way
   Jefferson, GA 30549
   Phone: (770) 285-4200

2. ENGINEER: PRESTON R. MARKS, P.E.
   350 East Hall St.
   Madison, GA 30650
   Phone: (770) 302-2670
   Contact: MARVIN MUELLER, P.E.


4. CONTRACTOR SHALL NOTIFY EACH INDIVIDUAL PROPERTY OWNER OF THE PLAN OF DIVISION OF THE WORK PRIOR TO DIVIDING THE WORK.

5. CONTRACTOR SHALL ASSURE THAT THE TEMPORARY WATER PLAYS ARE TO BE CONNECTED TO THE PUBLIC WATER MAIN OR TO APPROPRIATE WATER MAINS TO PROVIDE WATER TO THE CONSTRUCTION SITE.

6. CONTRACTOR SHALL KEEP THE UTILITIES IN GOOD CONDITION AND IN THE MANNER RECOMMENDED BY THE LENDERS, AND SHALL MAINTAIN ADEQUATE ACCESS TO THE UTILITIES FOR EMERGENCY USE.

7. CONTRACTOR SHALL ASSURE THAT ALL CONSTRUCTION ACTIVITIES DO NOT DAMAGE OR HARM THE UTILITIES, AND THAT THE UTILITIES ARE PROTECTED AGAINST DAMAGE OR HARM DURING CONSTRUCTION.

8. CONTRACTOR SHALL ASSURE THAT ALL CONSTRUCTION ACTIVITIES DO NOT DAMAGE OR HARM THE UTILITIES, AND THAT THE UTILITIES ARE PROTECTED AGAINST DAMAGE OR HARM DURING CONSTRUCTION.

9. CONTRACTOR SHALL ASSURE THAT THE UTILITIES ARE PROTECTED AGAINST DAMAGE OR HARM DURING CONSTRUCTION.

10. CONTRACTOR SHALL ASSURE THAT THE UTILITIES ARE PROTECTED AGAINST DAMAGE OR HARM DURING CONSTRUCTION.

11. CONTRACTOR SHALL ASSURE THAT THE UTILITIES ARE PROTECTED AGAINST DAMAGE OR HARM DURING CONSTRUCTION.

12. CONTRACTOR SHALL ASSURE THAT THE UTILITIES ARE PROTECTED AGAINST DAMAGE OR HARM DURING CONSTRUCTION.

13. CONTRACTOR SHALL ASSURE THAT THE UTILITIES ARE PROTECTED AGAINST DAMAGE OR HARM DURING CONSTRUCTION.

14. CONTRACTOR SHALL ASSURE THAT THE UTILITIES ARE PROTECTED AGAINST DAMAGE OR HARM DURING CONSTRUCTION.

15. CONTRACTOR SHALL ASSURE THAT THE UTILITIES ARE PROTECTED AGAINST DAMAGE OR HARM DURING CONSTRUCTION.

16. CONTRACTOR SHALL ASSURE THAT THE UTILITIES ARE PROTECTED AGAINST DAMAGE OR HARM DURING CONSTRUCTION.
COUNTY OF BARROW
STATE OF GEORGIA

BARROW COUNTY ETHICS ORDINANCE

AN ORDINANCE TO AMEND THE CODE OF ORDINANCES
OF BARROW COUNTY, TO ESTABLISH THE CODE OF
ETHICS FOR BARROW COUNTY; TO FURTHER AND
INCORPORATE THE POLICIES AND LAWS OF THE STATE
OF GEORGIA RELATING TO ETHICAL STANDARDS; TO
CREATE THE BOARD OF ETHICS AND PROVIDE FOR ITS
CONSTITUENT MEMBERSHIP, DUTIES, AND
RESPONSIBILITIES; TO PROVIDE FOR THE
INVESTIGATION OF ETHICS COMPLAINTS; TO PROVIDE
FOR THE ENFORCEMENT OF ETHICAL STANDARDS; TO
PROVIDE FOR SEVERABILITY; TO PROVIDE FOR AN
EFFECTIVE DATE; AND FOR OTHER PURPOSES.

WHEREAS, the Constitution of the State of Georgia, approved by the voters of the State
in November of 1982, and effective July 1, 1983, provides in Article IX, Section II, Paragraph I
thereof, that the governing authority of the county may adopt clearly reasonable ordinances,
resolutions, and regulations;

WHEREAS, O.C.G.A. § 36-1-20 authorizes counties to enact ordinances for protecting
and preserving the public health, safety, and welfare of the population of the unincorporated
areas of the County;

WHEREAS, the governing authority of Barrow County, to wit, the Board of
Commissioners, desires to exercise its authority in adopting this Ordinance;

WHEREAS, it is essential to the proper operation of democratic government that public
officials be independent and impartial, that governmental decisions and policy be made in the
proper channels of the governmental structure, that public office not be used for private gain
other than the remuneration provided by law, and that there be public confidence in the integrity
of government;
WHEREAS, the attainment of one or more of these ends is impaired whenever there exists a conflict between the private interests of an elected official or a governmental employee and his duties as such;

WHEREAS, the public interest, therefore, requires that the law protect against such conflicts of interest and establish appropriate ethical standards with respect to the conduct of elected officials and government employees in situations where conflicts exist;

WHEREAS, it is also essential to the proper operation of government that those best qualified be encouraged to serve the government. Accordingly, legal safeguards against conflicts of interest must be so designed as not unnecessarily or unreasonably to impede the recruitment and retention by the government of those men and women who are best qualified to serve it;

WHEREAS, an essential principle underlying the staffing of our government structure is that its elected officials and employees should not be denied the opportunity, available to all other citizens, to acquire and retain private economic and other interests, except where conflicts with the responsibility of such elected officials and employees to the public cannot be avoided;

WHEREAS, in recognition of these goals and principles, it is the policy of the Board of Commissioners to institute, establish, promote, and enforce standards of ethical conduct for all of Barrow County’s officers and employees; and

WHEREAS, it is a further policy of the Board of Commissioners that the proper administration of Barrow County’s government and the promotion and enforcement of standards of ethical conduct for Barrow County’s officers and employees would be best served by the creation of a Barrow County Board of Ethics for the investigation of complaints related to ethical standards;
NOW, THEREFORE, BE IT ORDAINED AND RESOLVED BY THE BOARD OF
COMMISSIONERS OF BARROW COUNTY, GEORGIA AS FOLLOWS:

ARTICLE ONE: GENERAL PROVISIONS

Section One. Short Title.

This Ordinance shall be known as “The Barrow County Ethics Ordinance,” and may be
cited and referred to as such.

Section Two. Definitions.

For the purposes of this Ordinance, the following terms, phrases, words, and their
derivations shall have the meaning provided herein. When not inconsistent with the context,
words used in the present tense include the future, words in the plural number include the
singular number, and words in the singular number include the plural number.

(A) “Board” means the Barrow County Board of Commissioners.

(B) “Board of Ethics” means the Barrow County Board of Ethics as formed and
described herein.

(C) “Business Entity” means any business of whatever nature regardless of how
designated or formed, whether a sole proprietorship, partnership, joint venture,
association, trust, corporation, limited liability company, or any other type of
business enterprise, and whether a person acting on behalf of, or as a
representative or agent of, the business entity.

(D) “Confidential Information” means any information that, by law or practice, is
not reasonably available to the public.

(E) “County Official” means the Barrow County Board of Commissioners, any
member of a board, commission, or authority appointed by the Board, the Chief of
Operations or his/her equivalent, and any other elected or appointed officer or employee of Barrow County, including those employees who are exempt from the Barrow County Civil Service System, except to the extent prohibited by law.

(F) “Employee” means all those persons employed on a regular or part-time basis by the County, as well as those persons whose services are retained under the terms of a contract with the County, including those employees who are exempt from the Barrow County Civil Service System, except to the extent prohibited by law.

(G) “Family” means the spouse, parents, children, brothers and sisters, related by blood or marriage, of a county official or employee.

(H) “Interest” means direct or indirect pecuniary or material benefit accruing to a County Official or Employee as a result of a contract or transaction which is or may be the subject of an official act or action by or with the County, except for such contracts or transactions which, by their terms and by the substance of their provisions, confer the opportunity and right to realize the accrual of similar benefits to all other persons and/or property similarly situated. The term “interest” shall not include any remote interest. For purposes of this Ordinance, a County Official or Employee shall be deemed to have an interest in the affairs of:

1. His or her family;

2. Any business entity in which the county official or employee is a member, officer, director, employee, or prospective employee;

3. Any business entity as to which the stock, legal ownership, or beneficial ownership of a county official or employee is in excess of five percent (5%) of the total stock or total legal and beneficial ownership, or which is
controlled or owned directly or indirectly by the county official or employee.

(i) "Official Act" or "Official Duties" means any legislative, administrative, appointive, or discretionary act of any County Official or Employee of the County or any agency, board, authority, or commission thereof.

ARTICLE TWO: CODE OF ETHICS FOR COUNTY SERVICE GENERALLY AND FOR EMPLOYEES

This Article Two is intended to adopt and incorporate herein for local enforcement the ethical standards of O.C.G.A. § 45-10-1, as it may be amended from time to time.

Any person in County service shall:

Section One.

Put loyalty to the highest moral principles and to country above loyalty to persons, party, or government department.

Section Two.

Uphold the Constitution, laws, and legal regulations of the United States and the State of Georgia and of all governments therein and never be a party to their evasion.

Section Three.

Give a full day's labor for a full day's pay and give to the performance of his duties his earnest effort and best thought.

Section Four.

Seek to find and employ more efficient and economical ways of getting tasks accomplished.
Section Five.

Never discriminate unfairly by the dispensing of special favors or privileges to anyone, whether for remuneration or not, and never accept, for himself or his family, favors or benefits under circumstances which might be construed by reasonable persons as influencing the performance of his governmental duties.

Section Six.

Make no private promises of any kind binding upon the duties of office, since a government employee has no private word that can be binding on public duty.

Section Seven.

Engage in no business with the government, either directly or indirectly, which is inconsistent with the conscientious performance of his governmental duties.

Section Eight.

Never use any information coming to him confidentially in the performance of governmental duties as a means for making private profit.

Section Nine.

Expose corruption wherever discovered.

Section Ten.

Uphold these principles, ever conscious that public office is a public trust.

ARTICLE THREE: CODE OF ETHICS FOR COUNTY OFFICIALS AND DEPARTMENT DIRECTORS

This Article Three is intended to adopt and incorporate herein for local enforcement the ethical standards of O.C.G.A. § 45-10-3, as it may be amended from time to time.

All County Officials and Department Directors shall:
Section One.

Uphold the Constitution, laws, and regulations of the United States, the State of Georgia, the County of Barrow, and all governments therein and never be a party to their evasion.

Section Two.

Never discriminate by the dispensing of special favors or privileges to anyone, whether or not for remuneration.

Section Three.

Not engage in any business with the government, either directly or indirectly, which is inconsistent with the conscientious performance of his governmental duties.

Section Four.

Never use any information coming to him confidentially in the performance of governmental duties as a means for making private profit.

Section Five.

Expose corruption wherever discovered.

Section Six.

Never solicit, accept, or agree to accept gifts, loans, gratuities, discounts, favors, hospitality, or services from any person, association or corporation under circumstances from which it could reasonably be inferred that a major purpose of the donor is to influence the performance of the member’s official duties.

Section Seven.

Never accept any economic opportunity under circumstances where he knows or should know that there is a substantial possibility that the opportunity is being afforded him with intent to influence his conduct in the performance of his official duties.
Section Eight.

Never engage in other conduct which is unbecoming to a member or which constitutes a breach of public trust.

Section Nine.

Never take any official action with regard to any matter under circumstances in which he knows or should know that he has a direct or indirect monetary interest in the subject matter of such matter or in the outcome of such official action.

ARTICLE FOUR: SPECIFIC PROVISIONS RELATED TO CONFLICT OF INTEREST TRANSACTIONS AND DISCLOSURES

The following provisions related to conflict of interest transactions and disclosures are intended to supplement and elaborate upon the Code of Ethics set forth in Articles Two and Three above, and all such provisions shall be read and interpreted in accordance therewith.

Section One. Compliance with Applicable Law.

No County Official or Employee shall engage in any activity or transaction that is prohibited by law, now existing or hereafter enacted, which is applicable to him or her by virtue of his or her office or employment. Other provisions of law or regulations shall apply when any provisions of this Ordinance shall conflict with the laws of the State of Georgia or the United States, except to the extent that this Ordinance permissibly sets forth a more stringent standard of conduct. The laws of the State of Georgia or the United States shall apply when this Ordinance is silent.

Section Two. Conflict of Interest Transactions.

(A) No County Official or Employee shall acquire or maintain an interest in any contract or transaction if a reasonable basis exists that such an interest will be
affected directly by his or her official act or action or by official acts or actions of
the County, which the County Official or Employee has a reasonable opportunity
to influence, except consistent with the disclosure and abstention provisions set
forth herein.

(B) Barrow County shall not enter into any contract involving services or property
with a County Official or Employee or with a business entity in which the County
Official or an Employee has an interest. Provided that the disclosure and
abstention provisions set forth herein are followed, this paragraph shall not apply
to the following:

(1) The designation of a bank or trust company as a depository for county
funds;

(2) The borrowing of funds from any bank or lending institution which offers
competitive rates for such loans;

(3) Contracts entered into with a business which employs a consultant,
provided that the consultant’s employment with the business is not
incompatible with this Ordinance;

(4) Contracts for services entered into with a business which is the only
available source for such goods or services; and

(5) Contracts entered into under circumstances that constitute an emergency
situation, provided that a record explaining the emergency is prepared by
the Board and submitted to the Chief of Operations (or his/her equivalent)
to be kept on file.
Section Three. **Financial Disclosures.**

Financial disclosures shall be governed by federal and state law as it may be amended from time to time, and this Ordinance shall not require any additional financial disclosure reports to be filed other than those required by federal and state law.

Section Four. **Zoning Application Disclosures.**

All disclosures with regard to zoning applications shall be governed in their entirety by the Conflict of Interest in Zoning Actions provisions contained in O.C.G.A. § 36-67A-1, et seq., as it may be amended from time to time.

Section Five. **Disclosures Related to Submission of Bids or Proposals for County Work or Contract.**

Persons submitting bids or proposals for county work who have contributed $250.00 or more to a County Official must disclose on their bid or proposal the name of the County Official(s) to whom the contribution was made and the amount contributed. Such a disclosure must also be made prior to a request for any change order or extension of any contract awarded to the person who submitted the successful bid or proposal.

Section Six. **Withholding of Information.**

No County Official or Employee shall knowingly withhold any information that would impair the proper decision making of the Board or any of the County’s boards, agencies, authorities, or departments.

Section Seven. **Incompatible Service.**

No County Official or Employee shall engage in or accept private or public employment or render service for any private or public entity, when such employment or service is incompatible with the proper discharge of his or her official duties or would tend to impair his or her independence of judgment or action in the performance of his or her official duties, unless
otherwise permitted by law and unless public disclosure is made.

Section Eight. Unauthorized Use of Public Property.

No County Official or Employee shall request or permit the unauthorized use of county-owned vehicles, and equipment, including but not limited to computers, pagers, and cellular telephones, materials or property for personal convenience or profit.

Section Nine. Political Recrimination and Activity.

(A) No County Official or Employee, whether elected or appointed, shall either cause the dismissal or threaten the dismissal from any county position as a reward or punishment for any political activity. No County Official or Employee shall direct any person employed by the County to undertake political activity on behalf of such County Official or Employee, any other County Official or Employee, or any other individual, political party, group, or business organization, during such time that the Employee is required to conduct county business. This section does not prohibit incidental telephone calls made for the purpose of scheduling a County Official’s daily county business.

(B) Employees of the county are encouraged to exercise their right to vote, but no employee shall make use of government time or equipment to aid a political candidate, party, or cause; or use a government position to influence, coerce, or intimidate any person in the interest of a political candidate, party, or cause. No employee shall be hired, promoted, favored, or discriminated against with respect to employment because of his or her political opinions or affiliations.

(1) *Seeking elective office.* A government employee seeking elective office within the county may, upon declaring candidacy, either resign or submit a
request in writing to the Chief of Operations (or his/her equivalent) for a leave of absence without pay from the date of his or her announcement through the duration of the campaign or announcement of the election results. In the alternative, the government employee seeking elective office within the County may continue to work for the County, provided, however, that the employee shall not engage in election activities during his or her County working hours or with use of County equipment. If elected to office, the employee shall immediately, upon the date of election, be separated from employment with the county upon written request and approval of the Chief of Operations (or his/her equivalent).

(2) Political campaign involvement. A government employee may not be involved in any political activity which would constitute a conflict of interest; including participation in any aspect of any political campaign for any office in Barrow County Government.

(3) Solicitation of contributions. A government employee may not knowingly solicit, accept, or receive political contributions from any person, to be used in support of or opposition to any candidate for office in the county.

Section Ten. Appearance Before County Entities.

No County Official or Employee shall appear on behalf of any private person other than himself or herself, his or her spouse, or his or her minor children, before any county agency, authority or board. However, a member of the Board of Commissioners may appear before such groups on behalf of his constituents in the course of his duties as a representative of the electorate or in the performance of public or civic obligations.
Section Eleven.  Timely Payment of Debts to the County and Fiscal Responsibility.

All County Officials and Employees shall pay and settle, in a timely and prompt fashion, all accounts between them and Barrow County, including the prompt payment of all taxes and shall otherwise demonstrate personal fiscal responsibility.

Section Twelve.  Solicitation or Acceptance of Gifts.

(A) County Officials and Employees shall not accept gifts, gratuities, or loans from organizations, business concerns, or individuals with whom he or she has official relationships on business of the county government. These limitations are not intended to prohibit the acceptance of articles of negligible value which are distributed generally, nor to prohibit employees from accepting social courtesies which promote good public relations, or to prohibit employees from obtaining loans from regular lending institutions. It is particularly important that inspectors, contracting officers, and enforcement officers guard against relationships which might be construed as evidence of favoritism, coercion, unfair advantage, or collusion.

(B) Consistent with the provisions set forth in Articles Two and Three and Section 12(A) above, there shall be no violation of this Ordinance in the following circumstances:

(1) Meals and beverages given in the usual course of entertaining associated with normal and customary business or social functions.

(2) An occasional gift from a single source of $101.00 or less in any calendar year.

(3) Ceremonial gifts or awards.
(4) Gifts of advertising value only or promotional items generally distributed to public officials.

(5) Awards presented in recognition of public service.

(6) Reasonable expenses of food, travel, lodging and scheduled entertainment for a meeting that is given in return for participation in a panel or speaking engagement at the meeting.

(7) Courtesy tickets or free admission extended for an event as a courtesy or for ceremonial purposes, given on an occasional basis, and not to include season tickets of any nature.

(8) Gifts from relatives or members of the County Official or Employee’s household.

(9) Honorariums or awards for professional achievement.

(10) Courtesy tickets or free admission to educational seminars, educational or information conventions, or other similar events.

Section Thirteen. Disclosure of Interest.

Any member of the Board who has a financial or personal interest in any proposed legislation or action before the Board shall immediately disclose publicly the nature and extent of such interest.

Any other County Official or Employee who has a financial or personal interest in any proposed legislation or action before the Board and who participates in discussion with or gives an official opinion or recommendation to the Board in connection with such proposed legislation or action shall disclose publicly the nature and extent of such interest.
Section Fourteen. Abstention to Avoid Conflicts of Interest.

(A) Except as otherwise provided by law, no County Official or Employee shall participate in the discussion, debate, deliberation, vote, or otherwise take part in the decision-making process on any item before him in which the County Official or Employee has a conflict of interest as set forth above.

(B) To avoid the appearance of impropriety, if any County Official or Employee has a conflict of interest or has an interest that he or she has reason to believe either violates this Ordinance or may affect his or her official acts or actions in any matter, the County Official or Employee shall immediately leave the meeting room, except that if the matter is being considered at a public meeting, the County Official or Employee may remain in the meeting room.

(C) In the event of a conflict of interest, the County Official or Employee shall announce his or her intent to abstain prior to the beginning of the discussion, debate, deliberation, or vote on the item, shall not participate in any way, and shall abstain from casting a vote.

ARTICLE FIVE: THE BOARD OF ETHICS

Section One. Creation and Composition of Board of Ethics.

There is hereby created a five-member Barrow County Board of Ethics, which shall consist of the following members:

(A) One appointee of the Barrow County Bar Association;

(B) One appointee selected by a majority of the voting County elected officials (not including the members of the Board of Commissioners) who shall each have one vote for such appointee;
(C) One appointee selected by a majority of the voting employees of Barrow County (not including the County elected officials or the members of the Board of Commissioners) who are in the employ of Barrow County on a full-time basis on the effective date of the vote, which vote shall be conducted by the Director of Human Resources or his/her designee;

(D) One appointee of the Barrow County Personnel Review Board; and

(E) One appointee of the Barrow County Board of Commissioners, which appointee shall be selected by a majority vote of the Board of Commissioners.

Section Two. **Appointment Procedures.**

The initial appointments of the members of the Board of Ethics shall be accomplished as follows: Within five (5) business days of the effective date of this Ordinance, the Barrow County Chief of Operations (or his/her equivalent) or his/her designee shall notify the respective appointing body or individuals of the duty to appoint or vote upon a member for placement on the Board of Ethics. The body or individuals so notified shall have thirty (30) days in which to conduct their appointment process and provide the Chief of Operations (or his/her equivalent) with the name of the appointment, or the name of the individual for whom he or she is voting as the appointee in the case of the elected officials. Within five (5) business days of receipt of the appointment information, or calculation of the votes as the case may be, the Chief of Operations (or his/her equivalent) shall thereafter provide the names of the appointees to the Board of Commissioners. The Board of Commissioners shall appoint the five persons so identified at the next regular meeting of the Board of Commissioners following receipt of the names of the appointees from the Chief of Operations (or his/her equivalent).

All appointments following the expiration of the initial terms and all appointments made
in the cases of vacancies created during a particular term shall be made by the applicable body or
individuals as indicated in Section One of this Article. The Chief of Operations (or his/her
equivalent) or his/her designee shall notify the applicable body or individuals responsible for
making an appointment at least forty-five (45) days prior to the expiration of the respective term
or immediately upon knowledge of a vacancy created during a term. Upon such notification, the
appointment process shall proceed as set forth above in this Section.

Section Three. Qualifications of Members of Board of Ethics.

A person is eligible to be appointed as a member of the Board of Ethics if the person,
while serving:

(A) Resides in the County and is a registered voter;

(B) Is not an Employee or County Official and has not been an Employee or County
    Official during the three (3) months immediately preceding his or her
    appointment, or be the spouse, parent, child or sibling of an Employee or County
    Official;

(C) Is not an officer or employee of any political party;

(D) Does not hold any elected or appointed office and is not a candidate for office of
    the United States, this State or the County, and has not held any elected or
    appointed office during the three (3) months immediately preceding his or her
    appointment.

Section Four. Terms; Vacancies.

Members of the Board of Ethics shall each serve a two (2) year term without
compensation, and shall continue to serve until their successors are appointed and qualified. The
Board positions appointed pursuant to sub-sections (A), (B), and (C) of Section One of this
Article shall serve an initial full two-year term, and shall thereafter serve two-year terms upon appointment. The Board positions appointed pursuant to sub-sections (D) and (E) of Section One of this Article shall serve an initial one-year term, and shall thereafter serve two-year terms upon appointment. If any vacancy occurs during a term, the remaining members shall at that time choose an alternate member mutually agreed upon to temporarily serve until the position is filled by appointment as provided in Section One and Section Two to fulfill the remainder of the then existing term.

Section Five. Removal of Member.

The Board of Commissioners may remove a member of the Board of Ethics on the grounds of neglect of duty, misconduct in office, or engagement in political activity in violation of this Ordinance. Before initiating the removal of a member from the Board of Ethics, the Board of Commissioners shall give the member written notice of the reason for the intended action, and the member shall have the opportunity to reply. Thereafter, the Board of Commissioners shall afford such member an opportunity for a hearing before the Board of Commissioners.

Section Six. Organization and Internal Operating Regulations.

(A) Members of the Board of Ethics shall not be compensated.

(B) The Board of Ethics shall elect one of its members to act as Chairperson for a term of one year, or until a successor is duly elected. The Board of Ethics shall also elect one of its members to act as Vice-Chairperson for the same term and to act for the Chairperson in his or her absence, because of disqualification, or vacancy.

(C) There shall be no regularly scheduled monthly or bimonthly meetings of the
Board of Ethics, however, the Board of Ethics shall have semi-annual meetings. By majority vote, or by call of the Chairperson, the Board of Ethics may call a special meeting, if necessary. The Board of Ethics shall, however, have semi-annual meetings with the first meeting commencing at 7:00 p.m. on the fourth Thursday of the month following the appointment of the initial members of the Board of Ethics by the Board of Commissioners, and with the second meeting commencing at 7:00 p.m. on the fourth Thursday of the month six months subsequent to the first meeting. The semi-annual meetings shall continue thereafter on the fourth Thursday of the month in six-month intervals. The meetings of the Board of Ethics shall be conducted in the public hearing room utilized by the Board of Commissioners, shall be duly publicized, and shall be otherwise conducted in accordance with the Open Meetings requirements under state law. The dates and times of the meetings may be altered by a majority vote of the Board of Ethics.

(D) Three members of the Board of Ethics shall constitute a quorum for the transaction of business. The Chairperson shall be entitled to the same voting rights as the other members of the Board of Ethics.

(E) No official action concerning complaints shall be taken by the Board of Ethics, except by the affirmative vote of at least four (4) members of the Board of Ethics.

Section Seven. Duties and Powers.

The Board of Ethics shall have the following duties and powers:

(A) To establish any procedures, rules and regulations governing its internal organization and conduct of its affairs, provided that such procedures, rules and
regulations do not conflict with any provision contained herein.

(B) To receive and hear complaints of violations of standards required by this Ordinance.

(C) To make investigations as it deems necessary to determine whether any person has violated this Ordinance, but only after at least four (4) members of the Board of Ethics have voted affirmatively to conduct the investigation.

(D) To take such action as provided in this Ordinance as deemed appropriate because of any violation of this Ordinance.

(E) To perform any other function authorized by this Ordinance.

(F) To issue advisory opinions as provided in this Ordinance.

Section Eight. Staffing and Expenses.

The Board of Ethics shall be provided sufficient meeting space and other reasonable supportive services to carry out its duties required under this Ordinance. The Chief of Operations (or his/her equivalent) shall designate an administration employee who shall serve as the filing clerk for the Board of Ethics and who shall be authorized to receive all filings before the Board of Ethics, to publish notices of all meetings upon request of the Board of Ethics’ Chairperson, and to serve as the recording clerk for the Board of Ethics.

Section Nine. Counsel.

The Board of Ethics may petition the Barrow County Board of Commissioners for appointment of counsel on a case-by-case basis to assist it in carrying out its responsibilities or to act as a hearing officer. Any such appointed counsel shall be approved by the Board of Commissioners, shall perform services at an approved hourly rate, and shall serve at the joint pleasure of the Board of Ethics and the Board of Commissioners.
Section Ten. Adherence to Ethics Ordinance.

The Board of Ethics shall be governed by and subject to this Ordinance, except as to any requirements related to financial disclosures. If a member of the Board of Ethics has a conflict of interest or must disqualify himself under this Ethics Code or by law, the remaining members shall at that time choose an alternate person mutually agreed upon to hear that matter.

Section Eleven. Prohibition Against Certain Conflicting Political Activity.

(A) Definitions. The following words, terms, and phrases, when used in this section, shall have the meanings ascribed to them, except where the context clearly indicates a different meaning:

(1) "Member of the Board of Ethics" means an individual who occupies the position of a member of the Board of Ethics or a prospective member of the Board of Ethics.

(2) "Political Party" means a national political party, a state political party, a political action committee, and/or any affiliated organization.

(3) "Election" includes a primary, special, and general election.

(4) "Nonpartisan Election" means:

(a) An election at which none of the candidates is to be nominated or elected as representing a political party, any of whose candidates for presidential elector received votes in the last preceding election at which presidential electors were selected; and

(b) An election involving a question or issue which is not specifically identified with a political party, such as a constitutional amendment, referendum, approval of a governmental ordinance, or
any question or issue of similar character.

(5) “Partisan” when used as an adjective, refers to a political party.

(6) “Political Fund” means any fund, organization, political action committee or other entity that, for purposes of influencing in any way the outcome of any partisan election, receives or expends money or anything of value or transfers money or anything of value to any other fund, political party, candidate, organization, political action committee or other entity.

(7) “Contribution” means any gift, subscription, loan, advance, deposit of money, allotment of money, or anything of value given or transferred by one person to another, including in cash, by check, by draft, through a payroll deduction or allotment plan, by pledge or promise, whether or not enforceable, or otherwise.

(B) **Permissible Activities.** All members of the Board of Ethics are free to engage in political activity to the widest extent consistent with the restrictions imposed in this Section, which restrictions are imposed for the sole purpose of ensuring neutrality and the appearance of neutrality of the Board of Ethics. Each member of the Board of Ethics retains the right to:

(1) Register and vote in any election;

(2) Participate in the nonpartisan activities of a civic, community, social, labor, or professional organization or of a similar organization;

(3) Be a member of a political party or other political organization and participate in its activities to the extent consistent with law;
(4) Attend a political convention, rally, fundraising function, or other political gathering;

(5) Sign a political petition as an individual;

(6) Make a financial contribution to a political party or organization;

(7) Take an active part, as a candidate or in support of a candidate, in a nonpartisan election;

(8) Be politically active in connection with a question which is not specifically identified with a political party, such as a constitutional amendment, referendum, approval of a governmental ordinance or any other question or issue of a similar character;

(9) Serve as an election judge or clerk or in a similar position to perform nonpartisan duties as prescribed by state or local law; and

(10) Otherwise participate fully in public affairs in a manner which does not materially compromise his or her efficiency or integrity as a member of the Board of Ethics or the neutrality, efficiency or integrity of the Board of Ethics.

(C) **Prohibited Activities.**

(1) A member of the Board of Ethics may not take an active part in political management or in a political campaign, except as permitted by subsection (B) of this section.

(2) A member of the Board of Ethics shall not take part in or be permitted to do any of the following activities:

   (a) Serve as an officer of a political party, a member of a national,
state, or local committee of a political party, an officer or member of a committee of a partisan political club, or be a candidate for any of these positions;

(b) Organize or reorganize a political party organization or political club;

(c) Directly or indirectly solicit, receive, collect, handle, disburse, or account for assessments, contributions or other funds for a partisan political purpose;

(d) Organize, sell tickets to, promote or actively participate in a fundraising activity of a candidate in a partisan election or of a political party or political club;

(e) Take an active part in managing the political campaign of a candidate for public office in a partisan election or a candidate for political party office;

(f) Become a candidate for, or campaign for, an elective public office in a partisan election;

(g) Solicit votes in support of or in opposition to a candidate for public office in a partisan election or a candidate for political party office;

(h) Act as recorder, watcher, challenger or similar officer at the polls on behalf of a political party or a candidate in a partisan election;

(i) Drive voters to the polls on behalf of a political party or a candidate in a partisan election;

(j) Endorse or oppose a candidate for public office in a partisan
election or a candidate for political party office in a political advertisement, broadcast, campaign literature, or similar material;

(k) Serve as a delegate, alternate or proxy to a political party convention;

(l) Address a convention, caucus, rally or similar gathering of a political party in support of or in opposition to a partisan candidate for public office or political party office;

(m) Initiate or circulate a partisan nominating position.

(3) Nothing contained in this section shall prohibit activity in political management or in a political campaign by any member of the Board of Ethics connected with a nonpartisan election or a nonpartisan issue of any type.

Section Twelve. Limitation of Liability.

No member of the Board of Ethics, or any person acting on behalf of the Board of Ethics, shall be liable to any person for any damages arising out of the enforcement or operation of this Ethics Ordinance, except in the case of willful or wanton conduct. This limitation of liability shall apply to the County, the members of the Board of Ethics, the employees of the Board of Ethics, and any person acting under the direction of the Board of Ethics.

Section Thirteen. Advisory Opinion.

The Board of Ethics shall render an advisory opinion based on a real or hypothetical set of circumstances when requested to do so in writing by a County Official or Employee related to that County Official’s or Employee’s conduct or transaction of business. Such advisory opinions shall be rendered pursuant only to a written request, fully setting forth the circumstances to be
reviewed by the Ethics Board. The proceedings of the Ethics Board pursuant to this section shall be held in public to the extent consistent with state law, and the opinions of the Ethics Board shall be made available to the public.

Section Fourteen. Complaints.

The Board of Ethics shall be responsible for hearing and deciding any complaints filed regarding alleged violations of this Ordinance by any person. The following procedures shall be followed when filing a complaint:

(A) Any person may file a complaint alleging a violation of any of the provisions of this Ordinance by submitting it to the Chief of Operations (or his/her equivalent), who shall immediately deliver such complaint to the Chairman of the Board of Ethics or his or her designee. A copy of such complaint shall immediately be forwarded by registered mail to the County Official or Employee against whom the complaint was filed. The complaint must be supported by affidavits based on personal knowledge, shall set forth such facts as would be admissible in evidence, and shall show affirmatively that the affiant is competent to testify to the matters stated therein. All documents referred to in an affidavit(s) should be attached to the affidavit(s). The person filing the complaint shall verify the complaint by his or her signature thereon. A complaint must be filed within six (6) months of the date the alleged violation is said to have occurred, or in case of concealment or nondisclosure within six (6) months of the date the alleged violation should have been discovered after due diligence. In the event the Board of Ethics makes an initial determination that a complaint is technically deficient, the Board of Ethics shall submit a list of deficiencies to the complainant and offer the complainant the
opportunity to correct the deficiencies within seven (7) days prior to the complaint being dismissed for technical deficiencies.

(B) Upon receipt of a complaint alleging misconduct, the County Official or Employee against whom the complaint was filed may reply to the complaint within thirty (30) days, unless such time for reply is extended by the Board of Ethics upon good cause shown. The response of the County Official or Employee must be supported by affidavits based on personal knowledge, must set forth such facts as would be admissible in evidence, and must show affirmatively that the affiant is competent to testify to the matters stated therein. All documents referred to in an affidavit(s) should be attached to the affidavit(s).

(C) Within sixty (60) days of receipt of a complaint, the Board of Ethics shall conduct an investigatory review to determine whether specific substantiated evidence from a credible source(s) exists to support a reasonable belief that there has been a violation of this Ordinance. If after reviewing the complaint the Board of Ethics by vote determines that no specific, substantiated evidence from a credible source(s) exists to support a reasonable belief that there has been a violation of this Ordinance or determines that no violation occurred, it may dismiss the complaint without further proceedings. In the event a complaint is dismissed based upon the merits of the complaint, the complaint may not be re-filed.

(D) If the Board of Ethics determines that specific, substantiated evidence from a credible sources(s) exists to support a reasonable belief that there has been a violation of this Ordinance, certified written notice of a hearing, containing the time, date and place of such hearing, shall be given to each party by the Board of
Ethics, and a formal public hearing shall be conducted and both parties afforded an opportunity to be heard. Any formal public hearing shall be conducted in accordance with the requirements of due process. The Board of Ethics is authorized to swear witnesses.

(E) Any final determination resulting from the hearing shall include written findings of fact and conclusions of law. The Board of Ethics shall determine if clear and convincing evidence shows any violation of this Ordinance.

(F) Nothing in this section shall be considered to limit or encumber the right of the Board of Ethics to initiate an investigation on its own cognizance as it deems necessary to fulfill its obligations under this Ordinance.

**Section Fifteen. Disciplinary Action.**

(A) Upon a determination that an employee has violated this Ordinance, the Board of Ethics may recommend the following penalties and actions:

1. Written warning or reprimand;
2. Suspension without pay;
3. Termination of employment; and
4. Repayment to the County of any unjust enrichment.

(B) Upon a determination that a County Official has violated this Ordinance, the Board of Ethics may recommend the following penalties and actions:

1. Written warning, censure, or reprimand;
2. Removal from office to the extent provided by Georgia law; and
3. Repayment to the County of any unjust enrichment.

(C) Upon direction of the Board of Ethics, a petition may be filed for injunctive relief,
or any other appropriate relief, in the county superior court, or in any other court having proper venue and jurisdiction, for the purpose of requiring compliance with the provisions of this Ordinance. In addition, the court may issue an order to cease and desist from the violation of the Ordinance. The court also may void an official action that is the subject of the violation, provided that the legal action to void the matter was brought with ninety (90) days of the occurrence of the official action, if the court deems voiding the action to be in the best interest of the public.

The court, after hearing and considering all the circumstances in the case, may grant all or part of the relief sought. However, the court may not void any official action appropriating public funds, levying taxes or providing for the issuance of bonds, notes or other evidences of public obligation under this Ordinance.

(D) In addition to any other remedy provided herein, upon determination of a violation of this Ordinance, the Board of Ethics may recommend to the Board of Commissioners in writing that any contract, bid, or change order that was the subject of the violation should be cancelled or rescinded. The Board of Commissioners, however, shall retain the discretion to determine whether such a cancellation or rescission would be in the best interest of the County and shall not be bound in any way by a recommendation of the Board of Ethics.

(E) The Ethics Board may also forward its findings of fact and conclusions of law to the Barrow County District Attorney's Office and/or the Office of the Governor for appropriate action.

Section Sixteen. Judicial review.

(A) Any party against whom a decision of the Board of Ethics is rendered may obtain
judicial review of the decision by writ of certiorari to the superior court of the County. The application for the writ must be filed within thirty (30) days from the date of the written decision. Judicial review shall be based upon the record. No party shall be entitled to a de novo appeal.

(B) Upon failure to timely request judicial review of the decision by writ of certiorari as provided in this section, the decision shall be binding and final upon all parties.

(C) The appellate rights afforded hereunder shall be in lieu of any right to appeal an adverse employment action under the Barrow County Civil Service System, to the extent the County Official or Employee may be subject to the Civil Service System.

ARTICLE SIX: MISCELLANEOUS

Section One. Severability.

If any provision of this Ordinance is found by a court of competent jurisdiction to be invalid or unconstitutional, or if the application of this Ordinance to any person or circumstances is found to be invalid or unconstitutional, such invalidity or unconstitutionality shall not affect other provisions or applications of this Ordinance which can be given effect without the invalid or unconstitutional provision or application.

Section Two. Repealer.

All laws, resolutions, or ordinances or parts thereof that conflict with the provisions of this Ordinance are hereby repealed.

Section Three. Effective Date.

The effective date of this Ordinance shall be July 1, 2004.

BARROW COUNTY BOARD OF COMMISSIONERS

Jerry Lamp, District 1
William Brown, District 2
Roger Wehunt, District 3
Norma Jean Brown, District 4
David Dyer, District 5

Thad Brasfield, District 7

Attest:
Michelle Sims, Clerk
Barrow County Board of Commissioners