

SPECIFICATIONS
AND
CONTRACT DOCUMENTS

WATER SYSTEM IMPROVEMENTS
TO SERVE
FORT VALLEY STATE UNIVERSITY

CONTRACT C - WATER MAIN
EXTENSIONS

FOR THE
FORT VALLEY UTILITY COMMISSION

JUNE 2018

CARTER & SLOOPE PROJECT NO.: F7500.042



CARTER & SLOOPE, INC.
6310 Peake Road
Macon, GA 31210
(478) 477-3923

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CONTRACT DOCUMENTS

Advertisement for Bids

Fort Valley Utility Commission
Owner

500 Anthoine Street
Address

Fort Valley, Georgia 31030

Separate sealed Bids for the construction of

Water System Improvements to serve Fort Valley State University:

Contract C – Water Main Extensions: construction of approximately 5,700 L.F. of 12” potable
water main and 2,800 L.F. of 12” raw water main with associated valves, fittings, hydrants, etc.

will be received by

the Fort Valley Utility Commission

at the office of

the Fort Valley Utility Commission, 500 Anthoine Street, Fort Valley, GA 31030

until 1:00 p.m., (Local Time) Thursday, July 25, 2018 (year), and then at said office
publicly opened and read aloud.

The Contract Documents may be examined at the following location(s):

Carter & Sloope, Inc., 6310 Peake Rd, Macon, GA 31210

Fort Valley Utility Commission, 500 Anthoine Street, Fort Valley, GA 31030

Copies of the Contract Documents may be obtained from the Issuing Office,

Fort Valley Utility Commission
Water System Improvements to serve
Fort Valley State University

C & S No.: F7500.042
Contract C

Carter & Sloope, Inc.(6310 Peake Rd, Macon, GA 31210), upon payment of \$ 100.00 for each set.

The contractor must comply with the minimum rates for wages for laborers and mechanics as determined by the Secretary of labor in accordance with the provisions of the Davis-Bacon and Related Acts.

6/20/2018

Date

Craig Mims, General Manager/CEO

Instructions to Bidders

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ARTICLE 1 – DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. Issuing Office – The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

- 2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office.
- 2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

- 2.03 Owner and Engineer in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's qualifications to perform the Work, within five days of Owner's request, Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be called for below.

ARTICLE 4 – EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 Subsurface and Physical Conditions

- A. The Supplementary Conditions identify:
1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Bidding Documents.
 2. Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in paragraph 4.01A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.02 of the General Conditions has been identified and established in paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.02 Underground Facilities

- A. Information and data shown or indicated in the Bidding Documents with respect to existing 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, including Owner, or others.

4.03 Hazardous Environmental Condition

- A. The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that ENGINEER has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in paragraph 4.03.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which Bidder is entitled to rely as provided in paragraph 4.06 of the General Conditions has been identified and established in paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in paragraphs 4.02, 4.03, 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site which was not shown or indicated on the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in paragraph 4.06 of the General Conditions.

4.05 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, test, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former conditions upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to locating of excavation and utility.

4.06 Additional Owner Provided Information:

- A. Reference is made to Article 7 of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On request, Owner will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.
- B. Paragraph 6.13.C of the General Conditions states that if an Owner safety program exists it will be noted in the Supplementary Conditions.

4.07 It is the responsibility of each Bidder before submitting a Bid to:

- A. Examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents, and any Addenda;
- B. Visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. Become familiar with and satisfy Bidder as to all Federal, State, and local Laws and Regulations that may affect the cost, progress, or performance of the Work;
- D. Carefully study all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of Hazardous Environmental Conditions as provided in paragraph 4.06 of the General Conditions;
- E. Obtain and carefully study (or accept consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
- F. Agree at the time of submitting this Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
- G. Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;

- I. Promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
 - J. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 4.08 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 Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 – SITE AND OTHER AREAS

- 5.01 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

ARTICLE 6 – INTERPRETATIONS AND ADDENDA

- 6.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretation or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than five days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 6.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Engineer.

ARTICLE 7 – BID SECURITY

- 7.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5% of Bidder's maximum Bid price and in the form of a certified check or a Bid bond (EJCDC No. C-430, 2007 Edition) issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General Conditions.
- 7.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may annul the Notice of Award and the Bid security of that Bidder will be forfeited. 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 seven days after the Effective Date of the Agreement or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.
- 7.03 Bid security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 8 – CONTRACT TIMES

- 8.01 The number of days within which, or the dates by which, the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 9 – LIQUIDATED DAMAGES

- 9.01 Provisions for liquidated damages are set forth in the Agreement.

ARTICLE 10 – SUBSTITUTE AND “OR-EQUAL” ITEMS

- 10.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or “or-equal” materials and equipment as defined in paragraph 6.05 of the General Conditions, or those substitute materials and equipment approved by the Engineer and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function and quality to be met by any proposed substitute or “or-equal” item. Request for Engineer's clarification of materials and equipment considered “or-equal” prior to the Effective Date of the Agreement must be received by the Engineer at least 5 days prior to the date for receipt of Bids. No item of material or equipment will be considered by Engineer as a substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids. Each request shall conform to the requirements of paragraph 6.05 of the General Conditions. The

burden of proof of the merit of the proposed item is upon the Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any proposed substitute item, 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.

ARTICLE 11 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 11.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities 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, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the bid.
- 11.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest responsible Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner and Engineer makes no 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 6.06 of the General Conditions.
- 11.03 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.
- 11.04 The Contractor shall not award work to Subcontractor(s) in excess of the limits in SC 6.06.

ARTICLE 12 – PREPARATION OF BID

- 12.01 The Bid form is included with the Bidding Documents. Additional copies may be obtained from Engineer.
- 12.02 All blanks on the Bid form shall be completed in ink and the Bid signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each *Bid item* listed therein, or the words “No Bid,” “No Change,” or “Not Applicable” entered.

- 12.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be provided on the Bid Form.
- 12.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be provided on the Bid Form.
- 12.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 12.06 A Bid by an individual shall show the Bidder's name and business address.
- 12.07 A Bid by a joint venture shall be executed by each joint venture in the manner indicated on the Bid form. The official address of the joint venture must be provided on the Bid Form.
- 12.08 All names shall be printed in ink below the signatures.
- 12.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers and dates of which shall be filled in on the Bid form.
- 12.10 The postal and email addresses and telephone number for communication regarding the Bid shall be shown.
- 12.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state or locality where the Project is located or Bidder shall covenant in writing to obtain such qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 13 – BASIS OF BID; COMPARISON OF BIDS

13.01 Unit Price

- A. Bidders shall submit a Bid on a unit price basis of each item of Work listed in the Bid schedule.
- B. The total of all bid prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Conditions.

- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

13.02 Allowances

- A. For cash allowances, the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 11.02B of the General Conditions.

ARTICLE 14 – SUBMITTAL OF BID

- 14.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and the Bid bond form. The unbound copy of the Bid Form is to be completed and submitted with all the attachment outlined in Article 7 of the Bid Form.
- 14.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement for Bids and shall be enclosed in an opaque sealed envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." When using the mail or other delivery system delivering the Bid at the place and prior to the time indicated in the Advertisement for Bid. A mailed Bid shall be addressed to Owner at address in Article 1.01 of Bid Form.

ARTICLE 15 – DOCUMENTS TO BE SUBMITTED WITH BID The following documents must be executed and submitted by the Bidder with their Bid. Failure to submit any of the items listed below will constitute a non-responsive bid.

- 15.1 Immigration & Security Form (Section 00210)
- 15.2 USDA Compliance Statement (Section RD 400-6)
- 15.3 Bid Form (Section 00410)
- 15.4 Bid Bond (Section 00460)
- 15.5 Certification of Nonsegregated Facilities (Section 00480)
- 15.6 Noncollusion Affidavit of Prime Bidder (Section 00481)
- 15.7 Certification Regarding Debarment, Suspension, Ineligibility And Voluntary Exclusion (Section 00483)

- 15.8 Certification for Contracts, Grants, and Loans (Section 00484)
- 15.9 Evidence of Contractor's Authority to do business in the State of Georgia

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid 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 prior to the date and time for opening of the bids.
- 16.02 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of the Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid or negotiated, that Bidder will be disqualified from further bidding on the Work. This provision to withdraw a Bid without forfeiting the Bid security does not apply to Bidder's errors in judgment in preparing the Bid.

ARTICLE 17 – OPENING OF BIDS

- 17.01 Bids will be opened at the time and place indicated in the Advertisement for Bids and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, at its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.
- 19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder

has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

- 19.03 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 19.04 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the contract Documents.
- 19.06 If the Contract is to be awarded, Owner will award the Contract to the responsible Bidder whose Bid, conforming with all the material terms and conditions of the Instructions to Bidders, is lowest, price and other factors considered. If detailed in the bid form, factors such as discounts, transportation costs, and life cycle costs may be used to determine which bidder, if any, is offered the award.

ARTICLE 20 – CONTRACT SECURITY AND INSURANCE

- 20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds.

ARTICLE 21 – SIGNING OF AGREEMENT

- 21.01 When Owner gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to the Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

21.02 This Contract is expected to be funded in part with funds provided by the United States Department of Agriculture, Rural Utilities Services (RUS). Refer to Supplementary General Conditions for Federal requirements.

21.03 Concurrence by RUS in the award of the Contract is required before the Contract is effective.

ARTICLE 22 – SPECIAL FUNDING AGENCY REQUIREMENTS

22.01 The contractor must comply with the minimum rates for wages for laborers and mechanics as determined by the Secretary of labor in accordance with the provisions of the Davis-Bacon and Related Acts.

COMPLIANCE STATEMENT

This statement relates to a proposed contract with _____

(Name of borrower or grantee)

who expects to finance the contract with assistance from either the Rural Housing Service (RHS), Rural Business-Cooperative Service (RBS), or the Rural Utilities Service (RUS) or their successor agencies, United States Department of Agriculture (whether by a loan, grant, loan insurance, guarantee, or other form of financial assistance). I am the undersigned bidder or prospective contractor, I represent that:

1. I ☐ have, ☐ have not, participated in a previous contract or subcontract subject to Executive Order 11246 (regarding equal employment opportunity) or a preceding similar Executive Order.
2. If I have participated in such a contract or subcontract, I ☐ have, ☐ have not, filed all compliance reports that have been required to file in connection with the contract or subcontract.

☐ If the proposed contract is for \$50,000 or more: or ☐ If the proposed nonconstruction contract is for \$50,000 or more and I have 50 or more employees, I also represent that:
3. I ☐ have, ☐ have not previously had contracts subject to the written affirmative action programs requirements of the Secretary of Labor.
4. If I have participated in such a contract or subcontract, ☐ I have, ☐ have not developed and placed on file at each establishment affirmative action programs as required by the rules and regulations of the Secretary of Labor.

I understand that if I have failed to file any compliance reports that have been required of me, I am not eligible and will not be eligible to have my bid considered or to enter into the proposed contract unless and until I make an arrangement regarding such reports that is satisfactory to either the RHS, RBS or RUS, or to the office where the reports are required to be filed.

I also certify that I do not maintain or provide for my employees any segregated facilities at any of my establishments, and that I do not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I certify further that I will not maintain or provide for my employees any segregated facilities at any of my establishments, and that I will not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I agree that a breach of this certification is a violation of the Equal Opportunity clause in my contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and wash rooms, restaurants and other eating areas time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. I further agree that (except where I have obtained identical certifications for proposed subcontractors for specific time periods) I will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause; that I will retain such certifications in my files; and that I will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods):

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays the valid OMB control number. The valid OMB control number for this information collection is 0575-0018. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

SECTION 00210

IMMIGRATION AND SECURITY FORM

**THE SUCCESSFUL BIDDER MUST PROVIDE THE OWNER WITH THE
PROPERLY COMPLETED AND PROPERLY SIGNED IMMIGRATION
AND SECURITY FORMS AS REQUIRED BY
GEORGIA SENATE BILL 529
“GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT OF 2006”
O.C.G.A. § 13-10-90 AND § 13-10-91**

**THIS FORM MUST BE COMPLETED BY ALL CONTRACTORS AND
SUBCONTRACTORS**

THE FORM ATTACHED HERETO.

IMMIGRATION AND SECURITY FORM

A. In order to insure compliance with the Immigration Reform and Control Act of 1986 (IRCA), Pub.L. 99-603 and the Georgia Security and Immigration Compliance Act O.C.G.A. § 13-10-90 et. seq., Contractor must initial one of the sections below:

_____ Contractor has 500 or more employees and Contractor warrants that Contractor has complied with the Immigration Reform and Control Act of 1986 (IRCA) Pub.L. 99-603 and the Georgia Security and Immigration Compliance Act by registering at <https://www.vis-dhs.com/EmployerRegistration> and verifying information of all new employees; and by executing any affidavits required by the rules and regulation issued by the Georgia Department of Labor set forth at Rule 300-10-1-.01 et. seq.

_____ Contractor has 100-499 employees and Contractor warrants that no later than July 1, 2008, Contractor will register at <https://www.vis-dhs.com/EmployerRegistration> to verify information of all new employees in order to comply with the Immigration Reform and Control Act of 1986 (IRCA) Pub.L. 99-603 and the Georgia Security and Immigration Compliance Act; and by executing any affidavits required by the rules and regulation issued by the Georgia Department of Labor set forth at Rule 300-10-1-.01 et. seq.

_____ Contractor has 99 or fewer employees and Contractor warrants that no later than July 1, 2009, Contractor will register at <https://www.vis-dhs.com/EmployerRegistration> to verify information of all new employees in order to comply with the Immigration Reform and Control Act of 1986 (IRCA) Pub.L. 99-603 and the Georgia Security and Immigration Compliance Act; and by executing any affidavits required by the rules and regulation issued by the Georgia Department of Labor set forth at Rule 300-10-1-.01 et. seq.

B. Contractor warrants that Contractor has included a similar provision in all written agreements with any subcontractors engaged to perform services under its Contract(s) with the Fort Valley Utility Commission.

Signature

Title

Firm Name:

Street/Mailing Address:

City, State, Zip Code:

Telephone Number/Email Address:

Fort Valley Utility Commission
Water System Improvements to serve
Fort Valley State University

C & S No.: F7500.042
Contract C

CONTRACTOR AFFIDAVIT AND AGREEMENT

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 contracting with Fort Valley Utility Commission has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services pursuant to this contract with the Fort Valley Utility Commission, contractor will secure from such subcontractor(s) similar verification of compliance with O.C.G.A. 13-10-91 on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the Fort Valley Utility Commission at the time the subcontractor(s) is retained to perform such service.

EEV / Basic Pilot Program* User Identification Number

BY: Authorized Officer or Agent
(Contractor Name)

Title of Authorized Officer or Agent of Contractor

Printed Name of Authorized Officer or Agent of Contractor

SUBSCRIBED AND SWORN

BEFORE ME ON THIS THE

_____ DAY OF _____, 20__

Notary Public

My Commission Expires:

* As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is the "EEV / Basic Pilot Program" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA) (End of Form)

Fort Valley Utility Commission
Water System Improvements to serve
Fort Valley State University

C & S No.: F7500.042
Contract C

SUBCONTRACTOR AFFIDAVIT

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 under a contract with Fort Valley Utility Commission has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

EEV / Basic Pilot Program* User Identification Number

BY: Authorized Officer or Agent
(Contractor Name)

Title of Authorized Officer or Agent of Contractor

Printed Name of Authorized Officer or Agent of Contractor

SUBSCRIBED AND SWORN

BEFORE ME ON THIS THE

_____ DAY OF _____, 200_____

Notary Public

My Commission Expires:

* As of the effective date of O.C.G.A. 13-10-91, the applicable federal work authorization program is the "EEV / Basic Pilot Program" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA)

(End of Form)

END OF SECTION

Bid Form

Project Identification: Water System Improvements to serve Fort Valley State University
Contract C-Water Main Extensions

Contract Identification and Number: F7500.042

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ARTICLE 1 – BID RECIPIENT

- 1.01 This Bid is Submitted To: The Fort Valley Utility Commission
- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in the Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGMENTS

- 2.01 Bidder accepts all of the terms and conditions of the Advertisement and Instructions to Bidders, including without limitations those dealing with the dispositions of Bid security. The Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

- 3.01 In submitting this Bid, Bidder represents that:

- A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in SC-4.02, and (2) reports and drawings of Hazard Environmental Conditions, if any, at the Site that have been identified in SC-4.06 as containing reliable “technical data.”
- E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performances of the Work; (2) the means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder’s safety precautions and programs.
- F. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of the Work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- J. Bidder will submit written evidence of its authority to do business in the State or other jurisdiction where the Project is located not later than the date of its execution of the Agreement.

ARTICLE 4 – BIDDER’S CERTIFICATION

4.01 Bidder further represents that:

- A. This Bid is genuine and not made in the interest of or on the behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
 - 2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 - 4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID**BASE BID:**

Bidder will complete the Work in accordance with the Contract Documents for the following price:

A. BASE BID:

IRA HICKS WATER MAIN EXTENSIONS					
Item No.	Qty.	Unit	Description	Unit Price	Total Price
1	3,140	LF	12" C-900 PVC Potable Water Main	\$	\$
2	40	LF	12" D.I. Potable Water Main	\$	\$
3	80	LF	8" C-900 PVC Potable Water Main	\$	\$
4	15	LF	6" D.I. Hydrant Lead	\$	\$
5	3	EA	3-Way Fire Hydrant	\$	\$
6	8	EA	12" Gate Valve w/ Box	\$	\$
7	3	EA	6" Gate Valve w/ Box	\$	\$
8	1,700	LBS	D.I. Fittings	\$	\$
9	280	LF	Jack & Bore 18" Steel Casing	\$	\$
10	25	SY	Asphalt Removal & Replacement	\$	\$
11	1	EA	12"x12" Tapping Sleeve w/ Valve & Box	\$	\$
12	1	EA	8"x8" Tapping Sleeve w/ Valve & Box	\$	\$
13	3	EA	Connect to Existing Water Main	\$	\$
14	2	EA	Cut-In-Cap (Labor Only)	\$	\$
15	6	MO	NPDES Monitoring	\$	\$
16	1	AC	Clearing & Grubbing	\$	\$
17	1	LS	Erosion Control	\$	\$
18	1	LS	Traffic Control	\$	\$
Subtotal				\$	
POTABLE WATER MAIN TO JONES PLANT					
Item No.	Qty.	Unit	Description	Unit Price	Total Price
1	2,450	LF	12" C-900 Potable Water Main	\$	\$
2	12	LF	6" D.I. Hydrant Lead	\$	\$
3	3	EA	3-Way Fire Hydrant	\$	\$
4	3	EA	12" Gate Valve w/ Box	\$	\$

5	3	EA	6" Gate Valve w/ Box	\$	\$
6	450	LBS	D.I. Fittings	\$	\$
7	40	TNS	1 ½" Asphalt Overlay-9.5 mm Superpave	\$	\$
8	40	SY	Asphalt Removal & Replacement	\$	\$
9	80	LF	Gravel Driveway Replacement	\$	\$
10	1	EA	12"x12" Tapping Sleeve w/ Valve & Box	\$	\$
11	1	EA	Connect to Existing Water Main	\$	\$
12	1	MO	NPDES Monitoring	\$	\$
13	1	LS	Erosion Control	\$	\$
14	1	LS	Traffic Control	\$	\$
Subtotal				\$	

RAW WATER MAIN TO JONES PLANT					
Item No.	Qty.	Unit	Description	Unit Price	Total Price
1	2,800	LF	12" C-900 Raw Water Main	\$	\$
2	3	EA	Combination Air Valve & Manhole	\$	\$
3	3	EA	12" Gate Valve w/ Box	\$	\$
4	450	LBS	D.I. Fittings	\$	\$
5	1	EA	12"x12" Tapping Sleeve w/ Valve & Box	\$	\$
6	1	EA	Connect to Existing Water Main	\$	\$
7	1	MO	NPDES Monitoring	\$	\$
8	1	LS	Erosion Control	\$	\$
9	1	LS	Traffic Control	\$	\$
Subtotal				\$	
IRA HICKS WATER MAIN EXTENSIONS SUBTOTAL				\$	
POTABLE WATER MAIN TO JONES PLANT SUBTOTAL				\$	
RAW WATER MAIN TO JONES PLANT SUBTOTAL				\$	
SUPPLEMENTAL WORK ALLOWANCE (SWA)				\$50,000.00	

TOTAL BASE BID	\$
-----------------------	----

bidder agrees to furnish all labor, materials, and equipment necessary to construct the Water System Improvements to serve Fort Valley State University – Contract C for the Fort Valley Utility Commission for the sum of _____ Dollars (\$_____)

- D. Unit Prices have been computed in accordance with paragraph 11.03.B of the General Conditions.
- E. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the contract Documents

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with paragraph 14.07 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damage.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are attached to and made a condition of the Bid:
 - A. Required Bid security in the form of a Bid Bond (EJCDC No. C-430) or Certified Check (circle type of security provided);
 - B. List of Proposed Subcontractors;
 - C. List of Proposed Suppliers;
 - D. List of Project References;
 - E. Evidence of authority to do business in the state or jurisdiction of the Project; or a written covenant to obtain such license within the time frame for acceptance of Bids;
 - F. Contractor's License No.: _____

- G. Required Bidder Qualification Statement with Supporting Data; and
- H. If Bid amount exceeds \$10,000, signed Compliance Statement (RD 400-6). Refer to specific equal opportunity requirements set forth in paragraph 18.10 of the General Conditions;
- I. If Bid amount exceeds \$25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transactions (AD-1048).
- J. If Bid amount exceeds \$100,000, signed RD Instruction 1940-Q, Exhibit A-1, Certification for Contracts, Grants, and Loans.

ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with the initial capitol letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

9.01 This Bid is submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____



By: _____
(Individual's signature)

Doing business as:

A Partnership

Partnership Name: _____



By: _____
(Signature of general partner – attach evidence of authority to sign)

Name (typed or printed):

A Corporation

Corporation Name:

State or Jurisdiction of Incorporation: _____

Type (General Business, Profession, Service, Limited Liability):

By: _____

(Signature – attach evidence of authority to sign)

Name (typed or printed):

Title: _____

CORPORATE
SEAL

Attest _____

(Signature of Corporate Secretary)

Date of Qualification to do business in Georgia is ____/____/____

A Joint Venture

Name of Joint Venture:

SEAL

First Joint Venture Name:

By: _____

(Signature of joint venture partner – attach evidence of authority to sign)

Name (typed or printed):

Title: _____

Second Joint Venture Name:

SEAL

By: _____

(Signature of joint venture partner – attach evidence of authority to sign)

Name (typed or printed):

Title: _____

(Each joint venture must sign. The manner of signing for each individual, partnership, and corporation that is party to the venture should be in the manner indicated above.)

Bidder's Business address: _____

Business Phone No. (_____) _____

Business FAX No. (_____) _____

Business E-Mail Address

State Contractor License No. _____

Employer's Tax ID No. _____

Phone and FAX Numbers, and Address for receipt of official communications, if different from Business contact information:

9.02 Bid submitted on _____, 20__.

BID BOND

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER (*Name and Address*):

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

OWNER (*Name and Address*):

Fort Valley Utility Commission
500 Anthoine Street
Fort Valley, GA 31030

BID

Bid Due Date: February 7, 2018
Description: Contract C-Water Main Extensions

BOND

Bond Number:

Date (*Not earlier than Bid due date*):

Penal sum _____ \$ _____
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER

SURETY

Bidder's Name and Corporate Seal (Seal) _____ (Seal)
Surety's Name and Corporate Seal

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Fort Valley Utility Commission
Water System Improvements to serve
Fort Valley State University

C & S No.: F7500.042
Contract C

Note: Above addresses are to be used for giving any required notice. Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) 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 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) 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 Owner, or
 - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof 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 of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions 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 prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case 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 in which the Project is located.
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.

END OF SECTION

Fort Valley Utility Commission
Water System Improvements to serve
Fort Valley State University

C & S No.: F7500.042
Contract C

00460-2

QUALIFICATIONS OF BIDDER

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

1. Legal Name of Bidder.
2. Permanent main office address.
3. When organized.
4. If a corporation, where incorporated.
5. How many years have you been engaged in the contracting business under your present firm or trade name?
6. Contract on hand: (Schedule these, showing amount of each contract and the appropriate anticipated dates of completion.)
7. General character of work performed by your company.
8. Have you ever failed to complete any work awarded to you? If so, where and why?
9. Have you ever defaulted on a contract? If so, where and why?
10. List the more important projects recently completed by your company, stating the approximate cost for each, and the month and year completed.
11. List your major equipment available for this contract.
12. Experience in construction work similar in importance to this project.
13. Background and experience of the principal members of your organization, including the officers.
14. Credit available: \$ _____.
15. Give Bank Reference _____.
16. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required by the Fort Valley Utility Commission.

17. The undersigned authorizes and requests any person, firm, or corporation to furnish any information requested by the Fort Valley Utility Commission, in verification of the recitals comprising the Statement of Bidder's Qualifications. Dated at _____ this _____ day of _____, 20____.

(Name of Bidder)

By _____

Title _____

State of _____

County of _____

_____, being duly sworn deposes and says
that he is _____ of _____

(Name of Organization)

and that the answers to the foregoing questions and all statements therein contained are true and correct.

Subscribed and sworn to before me this _____ day of _____, 20____.

(Notary Public)

My Commission expires:

_____, 20____

END OF SECTION

SECTION 00480

CERTIFICATION OF NONSEGREGATED FACILITIES

(To be completed and submitted with Bid)

Bidder certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The Bidder agrees that a breach of this certification will be a violation of the Equal Opportunity clause in any contract resulting from acceptance of this bid. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. The Bidder agrees that (except where he has obtained identical certification from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certification in his files.

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. & 1001.

Date _____, 20____

(Name of Bidder)

Official Address

BY: _____

TITLE: _____

NONCOLLUSION AFFIDAVIT OF PRIME BIDDER

**(For use with CDBG and Rural Development Projects)
(To Be Completed and Submitted with Bid)**

State of Georgia

County of **Peach**

_____, being first duly sworn, deposed and says that:

- (1) He is _____ of
(owner, partner, officer, representative, or agent)
_____,
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 or sham Bid;
- (4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including 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 or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the **Fort Valley Utility Commission** (Local Public Agency) 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 affidavit.

SECTION 00481-2
NONCOLLUSION AFFIDAVIT OF PRIME BIDDER

By: _____

Title: _____

Subscribed and sworn to before me this _____ day of _____, 20__.

(Notary Public)

My commission expires _____
_____, 20__

END OF SECTION

SECTION 00483-1

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY, AND
VOLUNTARY EXCLUSION

SECTION 00483
CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY, AND
VOLUNTARY EXCLUSION

U.S. DEPARTMENT OF AGRICULTURE

(To Be Completed and Submitted with Bid)

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR Part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989, Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency with which this transaction originated.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS THAT FOLLOW)

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name

PR/Award Number or Project Name

Name and Title of Authorized Representative

Signature

Date

SECTION 00483-2

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY, AND
VOLUNTARY EXCLUSION

INSTRUCTIONS FOR CERTIFICATION

1. By signing and submitting this form, the prospective lower tier participant is providing the certification set out on the previous page in accordance with these instructions.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

SECTION 00483-3

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY, AND
VOLUNTARY EXCLUSION

9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

SECTION 00484
CERTIFICATION FOR CONTRACTS, GRANTS AND LOANS
(To Be Completed and Submitted with Bid)

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant or Federal loan, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant or loan.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant or loan, the undersigned shall complete and submit Standard Form - LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including contracts, subcontracts, and subgrants under grants and loans) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

(Name)

(Date)

(Title)

**AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT**

THIS AGREEMENT is by and between Fort Valley Utility Commission (“Owner”) and
____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

- 1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Water System Improvements to serve Fort Valley State University:

Contract C – Water Main Extensions: construction of approximately 16,300 L.F. of 12” potable
water main and 3,300 L.F. of 12” raw water main with associated valves, fittings, hydrants, etc.

- 1.02 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Fort Valley Utility Commission, Contract C-Water Main Extensions

ARTICLE 2 – ENGINEER

- 2.01 The Project has been designed by Carter & Sloope, Inc. (Engineer), which is to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 3 – CONTRACT TIMES

- 3.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

- 4.02 *Days to Achieve Substantial Completion and Final Payment*

A. The Work will be substantially completed within 240 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and

Fort Valley Utility Commission
Water System Improvements to serve
Fort Valley State University

C & S No.: F7500.042
Contract C

completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 240 days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration preceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner \$500.00 for each day that expires after the time specified in Paragraph 4.02 above for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner \$ 500.00 for each day that expires after the time specified in Paragraph 4.02 above for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 5 – CONTRACT PRICE

- 5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraph below:

- A. For all Work, a *total base bid* of:

Words

Dollars & Cents

All specific cash allowances are included in the above price in accordance with Paragraph 11.02 of the General Conditions.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 30th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.
 - 1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions.
 - a. 90 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
 - b. 90 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07.

ARTICLE 7 – INTEREST

7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate of 1 percent per annum.

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Agreement, Contractor makes the following representations:

- A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities), if any, that have been identified in Paragraph SC-4.02 of the Supplementary Conditions as containing reliable “technical data,” and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in Paragraph SC-4.06 of the Supplementary Conditions as containing reliable “technical data”.
- E. Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and (3) Contractor’s safety precautions and programs.
- F. Based on the information and observations referred to in Paragraph 8.01.E above, Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

A. The Contract Documents consist of the following:

1. This Agreement (pages 00500-1 to 00500-8, inclusive).
2. Performance bond (pages 00610-1 to 00610-3, inclusive).
3. Payment bond (pages 00615-1 to 00615-3, inclusive).
4. Other bonds (pages N/A to, N/A inclusive).
 - a. N/A (pages ____ to ____, inclusive).
 - b. N/A (pages ____ to ____, inclusive).
 - c. N/A (pages ____ to ____, inclusive).
5. General Conditions (pages 00700-1 to 00700-73, inclusive).
6. Supplementary Conditions (pages 00800-1 to 00800-12, inclusive).
7. Specifications as listed in the table of contents of the Project Manual.
8. Drawings consisting of 16 sheets with each sheet bearing the following general title: Water System Improvements to serve FVSU, Contract C-Water Main Extensions.
9. Addenda (numbers _ to _, inclusive).
10. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages 00400-1 to 00400-9, inclusive).
 - b. Documentation submitted by Contractor prior to Notice of Award (pages N/A to N/A, inclusive).
11. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:

- a. Notice to Proceed (pages 00622-1 to 00622-1, inclusive).
 - b. Work Change Directives.
 - c. Change Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 *Assignment of Contract*

- A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement. Counterparts have been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or have been identified by Owner and Contractor or on their behalf.

This Agreement will be effective on _____ (which is the Effective Date of the Agreement).

OWNER:

Fort Valley Utility Commission

By: _____

Title: _____

Attest: _____

Title: _____

Address for giving notices:

Fort Valley Utility Commission

500 Anthoine Street

Fort Valley, GA 31030

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

CONTRACTOR

By: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

Title: _____

Address for giving notices:

License No.: _____
(Where applicable)

END OF SECTION

Fort Valley Utility Commission
Water System Improvements to serve
Fort Valley State University

C & S No.: F7500.042
Contract C

00500-8

Fort Valley Utility Commission
Water System Improvements to serve
Fort Valley State University

C & S No.: F7500.042
Contract C

00500-9

PERFORMANCE BOND

CONTRACTOR (name and address):

SURETY (name and address of principal place of business):

OWNER (name and address): Fort Valley Utility Commission
500 Anthoine Street
Fort Valley, GA 31030

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description (name and location): Water System Improvements to serve Fort Valley State University:
Contract C-Water Main Extensions

BOND

Bond Number:

Date (not earlier than the Effective Date of the Agreement of the Construction Contract):

Amount:

Modifications to this Bond Form: ☐ None ☐ See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

(seal)

Contractor's Name and Corporate Seal

(seal)

Surety's Name and Corporate Seal

By: _____

Signature

By: _____

Signature (attach power of attorney)

Print Name

Print Name

President

Title

Title

Attest: _____

Signature

Attest: _____

Signature

Secretary/Treasurer

Title

Title

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be

secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by

the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows:

PAYMENT BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*: Fort Valley Utility Commission
500 Anthoine Street
Fort Valley, GA 31030

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*: Water System Improvements to serve Fort Valley State University:
Contract C-Water Main Extensions

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:

Amount:

Modifications to this Bond Form: ☐ None ☐ See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

President
Title

Title

Attest: _____
Signature

Attest: _____
Signature

Secretary/Treasurer
Title

Title

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2 Pay or arrange for payment of any undisputed amounts.
 - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.

11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

16.1 **Claim:** A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

18. Modifications to this Bond are as follows:

Notice of Award

Date: _____

Project: Water System Improvements to serve Fort Valley State University

Owner: Fort Valley Utility Commission

Owner's Contract No.: C

Contract: C – Water Main Extensions

Engineer's Project No.: F7500.042

Bidder:

Bidder's Address:

You are notified that your Bid dated _____ for the above Contract has been considered. You are the Successful Bidder and are awarded a Contract for _____.

1 copy of the proposed Contract Documents (except Drawings) accompanies this Notice of Award.

1 set of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within [15] days of the date you receive this Notice of Award.

1. Deliver to the Owner 5 fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract Performance and Payment Bonds as specified in the Instructions to Bidders (Article 20), and General Conditions (Paragraph 5.01).
3. Deliver with the executed Contract Documents the Contract Certificate of Insurance as specified in the General Conditions (Paragraph 5.03) and Supplementary Conditions (Part 8).

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Contract Documents.

Fort Valley Utility Commission

Owner

By: _____
Authorized Signature

Title

END OF SECTION

Fort Valley Utility Commission
Water System Improvements to serve
Fort Valley State University

C & S No.: F7500.042
Contract C

00621-1

Notice to Proceed

Date: _____

Project: Water System Improvements to serve Fort Valley State University

Owner: Fort Valley Utility Commission

Owner's Contract No.: C

Contract: C – Water Main Extensions

Engineer's Project No.: F7500.042

Contractor:

Contractor's Address: [send Certified Mail, Return Receipt Requested]

You are notified that the Contract Times under the above Contract will commence to run on _____.
On or before that date, you are to start performing your obligations under the Contract Documents. In accordance with
Article 4 of the Agreement, the date of Substantial Completion is _____.

Before you may start any Work at the Site, Paragraph 2.01.B of the General Conditions provides that you and Owner
must each deliver to the other (with copies to Engineer and other identified additional insureds and loss payees)
certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

Fort Valley Utility Commission

Owner

Authorized Signature

Title

Date

Accepted By:

Contractor

Authorized Signature

Title

Date

Fort Valley Utility Commission
Water System Improvements to serve
Fort Valley State University

C & S No.: F7500.042
Contract C

00622-1

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

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Endorsed by



CONSTRUCTION SPECIFICATIONS INSTITUTE

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor (EJCDC C-520 or C-525, 2007 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the Narrative Guide to the EJCDC Construction Documents (EJCDC C-001, 2007 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (EJCDC C-800, 2007 Edition).

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
6. *Bidder*—The individual or entity who submits a Bid directly to Owner.
7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
9. *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 Times, issued on or after the Effective Date of the Agreement.
10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work*—See Paragraph 11.01 for definition.
17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *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.
19. *Engineer*—The individual or entity named as such in the Agreement.
20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements*—Sections of Division 1 of the Specifications.
22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.
27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *PCBs*—Polychlorinated biphenyls.

31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.
40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.
46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.
48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
49. *Unit Price Work*—Work to be paid for on the basis of unit prices.
50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
51. *Work Change Directive*—A written statement 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 subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive 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 Times.

1.02 Terminology

- A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. Intent of Certain Terms or Adjectives:

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. Day:

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. Defective:

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. 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 14.04 or 14.05).

E. Furnish, Install, Perform, Provide:

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
2. a preliminary Schedule of Submittals; and
3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. 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 labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

- A. Standards, Specifications, Codes, Laws, and Regulations
 - 1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the 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 in the Contract Documents.
 - 2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

- 1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. Resolving Discrepancies:

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 Amending and Supplementing Contract Documents

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
 1. A Field Order;
 2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or
 3. Engineer's written interpretation or clarification.

3.05 Reuse of Documents

- A. Contractor and any Subcontractor or Supplier shall not:

1. 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 or its consultants, including electronic media editions; or
 2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

- 1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the and those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities)

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

- 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
- 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
- 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

- 1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
- 2. is of such a nature as to require a change in the Contract Documents; or
- 3. differs materially from that shown or indicated in the Contract Documents; or
- 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

- B. *Engineer's Review*: After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. *Possible Price and Times Adjustments*:

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
 - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
 - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *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, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and
2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all such information and data;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents;
 - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and
 - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated:*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

- A. 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, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument 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 or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.

- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list 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 Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.
- C. 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 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain. Engineer shall be listed as additional insured on the COI.
- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of

insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
 - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
 - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
 - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
 - b. by any other person for any other reason;
 - 5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
 - 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
6. include completed operations coverage:
 - a. Such insurance shall remain in effect for two years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof

(subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
 2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.
 3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
 4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
 5. allow for partial utilization of the Work by Owner;
 6. include testing and startup; and
 7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.
- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the

Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

- E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:
 - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any 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 permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, 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. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably 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.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner’s written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, 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 performance, testing, start-up, and completion of the Work.
- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.
 - 1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
 - 3) it has a proven record of performance and availability of responsive service.
 - b. Contractor certifies that, if approved and incorporated into the Work:

- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
- 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.
- d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - 1) shall certify that the proposed substitute item will:
 - a) perform adequately the functions and achieve the results called for by the general design,
 - b) be similar in substance to that specified, and
 - c) be suited to the same use as that specified;
 - 2) will state:
 - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,
 - b) whether use of the proposed substitute item 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 other work on the Project) to adapt the design to the proposed substitute item, and
 - c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
 - 3) will identify:
 - a) all variations of the proposed substitute item from that specified, and

- b) available engineering, sales, maintenance, repair, and replacement services; and
 - 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.
- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner'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 individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
 - 2. shall 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 individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. 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.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

- A. 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.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to 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 specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to 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.

6.08 *Permits*

- A. 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. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the 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.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all

court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

- A. 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.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas:*

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas 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 adjacent land or areas resulting from the performance of the Work.
2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading Structures:* 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.

6.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved 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.

6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 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.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property 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 other 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.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.

- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform 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 any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for 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 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor 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 or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

- A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

- a. Submit number of copies specified in the General Requirements.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:*

- a. Submit number of Samples specified in the Specifications.
- b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Submittal Procedures:*

1. Before submitting each Shop Drawing or Sample, Contractor shall have:

- a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
- b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
- c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
- d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop

Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review:

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures:

1. 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 and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

- A. 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 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 4. use or occupancy of the Work or any part thereof by Owner;
 5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
 6. any inspection, test, or approval by others; or
 7. any correction of defective Work by Owner.

6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor,

Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
 - 1. written notice thereof will be given to Contractor prior to starting any such other work; and
 - 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' 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.
- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
 - 1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
 - 2. the specific matters to be covered by such authority and responsibility will be itemized; and
 - 3. the extent of such authority and responsibilities will be provided.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

- A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. 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.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations,

Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site 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 generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

- A. 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 Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by 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 Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the 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 decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, 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.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any

authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. 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).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefore as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
 - 1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
 - 2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
 - 3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; 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 6.18.A.

10.04 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety 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 Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data

shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. deny the Claim in whole or in part;
 2. approve the Claim; or
 3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. 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 not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:

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. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. 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' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
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 returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any 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 and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
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.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. 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.
 - c. 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, assembly, dismantling, and removal thereof. All such costs shall be in accordance with

the 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.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
- e. Deposits lost for causes 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.
- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than 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. 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.
- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 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.
- 4. 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.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.
- C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.
- D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

- A. 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 performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:*
 1. Contractor agrees that:
 - a. the cash 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
 - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance:*
 1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. 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.

11.03 Unit Price Work

- A. 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 unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

- B. 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 subject to the provisions of Paragraph 9.07.
- C. 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.
- D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
 - 1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
 - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
 - 3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the

Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. 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 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount

equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
 - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
 - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
 - 3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.
- F. Uncovering Work as provided in Paragraph 13.03.E 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.

13.04 *Uncovering Work*

- A. 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.
- B. 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.
- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys,

and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, 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, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed 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, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or

2. correct such defective Work; or
 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution 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 for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. 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, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, 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, or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or 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, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, 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. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A 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.

14.02 *Progress Payments*

A. Applications for Payments:

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. Review of Applications:

1. Engineer will, within 10 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.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
 - d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due:

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment:

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
 - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
 - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - c. there are other items entitling Owner to a set-off against the amount recommended; or
 - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 Contractor's Warranty of Title

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any 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.

14.04 Substantial Completion

- A. 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.
- B. Promptly after Contractor's notification, 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.

- C. If Engineer considers the Work substantially complete, Engineer will 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 14 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 14 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.
- D. 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, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing 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.
- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed 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 for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.
 - 2. 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.

3. 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 14.04 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.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly 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 complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
 - b. consent of the surety, if any, to final payment;
 - c. a list of all Claims against Owner that Contractor believes are unsettled; and
 - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid

or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. Engineer's Review of Application and Acceptance:

1. 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 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 for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment 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 for Payment.

C. Payment Becomes Due:

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 Final Completion Delayed

- A. 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 (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, 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 5.01, 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.

14.09 Waiver of Claims

- A. The making and acceptance of final payment will constitute:

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 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees

specified therein, or from Contractor's continuing obligations under the Contract Documents;
and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive 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 granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:
 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
 2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
 3. Contractor's repeated disregard of the authority of Engineer; or
 4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
 1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);
 2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and
 3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price

exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 - 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
 - 4. reasonable expenses directly attributable to termination.
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

- A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
 - 1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agrees with the other party to submit the Claim to another dispute resolution process; or
 - 3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
 - 1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
 - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

- A. 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.

17.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto 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. 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.

17.04 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

END OF SECTION

SECTION 00800

Supplementary Conditions

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. C-700, 2007 Edition) and other provisions of the Contract Documents as indicated below. All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

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SC-1.01.A.2. Add the following language to the end of Paragraph 1.01.A.2:

The Project is financed in whole or in part by USDA Rural Utilities Service pursuant to the Consolidated Farm and Rural Development Act (7 USC Section 1921 et seq.). The Rural Utilities Service programs are administered through the USDA Rural Development offices; therefore, the Agency for these documents is USDA Rural Development.

SC-1.01.A.3. Add the following language to the end of Paragraph 1.01.A.3:

The Application for Payment form to be used on this Project is EJCDC No. C-620. The Agency must approve all Applications for Payment before payment is made.

SC-1.01.A.9. Add the following language to the end of Paragraph 1.01.A.9:

The Change Order form to be used on this Project is EJCDC No. C-941. Agency approval is required before Change Orders are effective.

SC-1.01.A.19 Add the following language to the end of Paragraph 1.01.A.19

The Engineer's consultants on this project are: None

SC-4.02. Add the following new paragraphs immediately after Paragraph 4.02.B:

- C. In the preparation of Drawings and Specifications, Engineer relied upon the following reports of exploration and test of subsurface conditions at the Site:
 - 1. NONE

SC-4.06. Delete Paragraphs 4.06.A and 4.06.B in their entirety and insert the following:

- A. No reports or drawings of Hazardous Environmental Conditions at or contiguous to the Site are known to the Owner or Engineer.
- B. Not used.

SC-5.04. Add the following new paragraph immediately after Paragraph 5.04.B:

- C. The limits of liability for insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
 - 1. Workers' Compensation, and related coverages under Paragraphs 5.04.A.1 and A.2 of the General Conditions:
 - a. State: Statutory
 - b. Applicable Federal (e.g., Longshoremen's) Statutory
 - c. Employer's Liability \$ 500,000
 - 2. Contractor's General Liability under Paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverages

and eliminate the exclusion with respect to property under the care, custody, and control of the Contractor:

- a. General Aggregate *\$ 2,000,000*
- b. Products - Completed Operations Aggregate *\$ 1,000,000*
- c. Personal and Advertising Injury *\$ 1,000,000*
- d. Each Occurrence (Bodily Injury and Property Damage) *\$ 1,000,000*
- e. Property Damage liability insurance will provide Explosion, Collapse, and Underground coverages where applicable.
- f. Excess or Umbrella Liability
 - 1) General Aggregate *\$ 5,000,000*
 - 2) Each Occurrence *\$ 5,000,000*

3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:

- a. Bodily Injury:
 - Each Person *\$ 1,000,000*
 - Each Accident *\$ 1,000,000*
- b. Property Damage:
 - Each Accident *\$ 1,000,000*
- c. Combined Single Limit of *\$ 1,000,000*

4. The Contractual Liability coverage required by paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:

- a. Bodily Injury:
 - Each Person *\$ 2,000,000*
 - Each Accident *\$ 2,000,000*
- b. Property Damage:
 - Each Accident *\$ 2,000,000*
 - Annual Aggregate *\$ 2,000,000*

SC-6.05.C. Amend the paragraph by making two subparagraphs under the title C. Engineer's Evaluation. The paragraph text is retitled, 6.05.C.2. After Effective Date of Agreement. A new paragraph is added before this paragraph to read as follows:

- 1. During Bidding. The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or "or-equal" materials

and equipment as defined in paragraph 6.05 of the General Conditions, or those substitute materials and equipment approved by the Engineer and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function, and quality to be met by any proposed substitute or “or-equal” item. Request for Engineer’s clarification of materials and equipment considered “or-equal” prior to the Effective Date of the Agreement must be received by the Engineer at least 5 days prior to the date for receipt of Bids. No item of material or equipment will be considered by Engineer as a substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids. Each request shall conform to the requirements of Paragraph 6.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon the Bidder. Engineer’s decision of approval or disapproval of a proposed item will be final. If Engineer approves any proposed substitute item, 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.

SC-6.06 Add a new paragraph immediately after Paragraph 6.06.G:

The Contractor shall not award work valued at more than fifty (50%) percent of the Contract Price to Subcontractor(s), without prior written approval of the Owner.

SC-7.01.A. Delete Paragraph 7.01.A in its entirety and insert the following in its place:

- A. Related work at the project site includes the construction of a 500,000 gallon elevated tank by a direct contract between the Owner and another Prime Contractor. The location for the elevated tank is shown on the Project Plans.

SC-7.02.A.1. Delete paragraphs 7.02.A.1-3 in their entirety and insert the following:

1. The Division I Contractor shall have the authority and be responsible for coordination of the activities among the other prime contractors and subcontractors on the Site to ensure a safe, efficient working environment. This authority covers scheduling delivery of materials, storage of materials, sequencing of construction involving different crafts, resolving interface issues between crafts, scheduling testing, and all other aspects of the Work that do not impact the design or function of the Work.

SC-9.03.A. Add the following language at the end of paragraph 9.03.A:

The Engineer will provide Resident Project Representative services for this project. The Duties, Responsibilities, and Limitations of Authority of the Resident Project Representative will be as stated in Exhibit D of the Agreement Between Owner and Engineer, E-500, 2008 Edition, as amended and executed for this specific Project.

SC-12.2. Add the following sub-Paragraphs to Paragraph 12.2:

- 12.2.1 For the purposes of this contract, abnormal weather conditions shall be defined as wet weather conditions that exceed the normal, reasonably expected adverse weather days for that particular place at that particular time of year. Extension of time for abnormal weather conditions will be granted for those days where precipitation is one-eighth (0.125) inches or greater and where the number of such days exceed the normal, reasonably expected adverse weather days in that particular month. No reduction in Contract Time will be required for calendar months with less than the normal adverse weather days.
- 12.2.2 The determination of normal adverse weather days will be based on the average number of calendar days over the last five years in which more than one-eighth (0.125) inches of rain fell as measured by the Fort Valley, Georgia "Georgia Automated Environmental Monitoring Network" station for that particular month. This data may be accessed via the following website:
- <http://www.weather.uga.edu>
- 12.2.3 For this purposes of this contract, normal adverse weather days, as calculated by the method described in 12.2.2 are listed below by month:
- | | | | |
|----------|---|-----------|---|
| January | 5 | July | 7 |
| February | 6 | August | 7 |
| March | 5 | September | 5 |
| April | 7 | October | 2 |
| May | 4 | November | 4 |
| June | 6 | December | 9 |
- 12.2.4 Requests for extension of Contract Time due to abnormal weather conditions must be submitted to Engineer with the monthly pay request for the month in which the delays occurred. Failure to request such extension with the pay request may invalidate the Contractor's right to an extension for these delays.

SC-12.3.1. Add the following sub-Paragraph to Paragraph 12.3:

- 12.3.1 If the Contractor fails to prosecute the work with such diligence as will insure the completion of each portion of the work within the Contract Time, plus any extensions made in accordance with Article 12 of the

General Conditions, and if the Owner does not exercise his reservations as set forth in Article 13 of the General Conditions, the Contractor shall continue the work, in which event, liquidated damages for the delay will be impossible to determine. In lieu thereof, liquidated damages in the amount of \$500 per calendar day for each day that the work is delayed beyond the contract completion will be assessed to the Contractor until the work is completed.

SC-14.02.A.3 Add the following language at the end of paragraph 14.02.A.3:

No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage, or invest the retainage for the benefit of the Contractor.

SC-14.02.A.4 Add the following new Paragraph after Paragraph 14.02.A.3:

The Application for Payment form to be used on this project is EJCDC No. C-620. The Agency must approve all Applications for Payment before payment is made.

SC-14.02.C.1. Delete Paragraph 14.02.C.1 in its entirety and insert the following in its place:

1. The Application for Payment with Engineer's recommendations will be presented to the Owner and Agency for consideration. If both the Owner and Agency find the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 14.02.D will become due ten days after the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

SC-18 Add a new Article 18, "Federal Requirements," after Article 17.

SC-18.01 Add the following language at the beginning of Article 18 with the title "Agency Not a Party."

- A. This Contract is expected to be funded in part with funds provided by Agency. Neither Agency, nor any of its departments, entities, or employees is a party to this Contract.

SC-18.02 Add the following language after Article 18.01.A with the title "Contract Approval."

- A. Owner and Contractor will furnish Owner's attorney such evidence as required so that Owner's attorney can complete and execute the following "Certificate of Owner's Attorney" (Exhibit GC-A) before Owner submits the executed Contract Documents to Agency for approval.
- B. Concurrence by Agency in the award of the Contract is required before the Contract is effective.

SC-18.03 Add the following language after Article 18.02.B with the title "Conflict of Interest."

- A. Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the plans and specifications has a corporate or financial affiliation with the supplier or manufacturer. Owner's officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest in Contractor. Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from Contractor or subcontractors.

SC-18.04 Add the following language after Article 18.03.A with the title "Gratuities."

- A. If Owner finds after a notice and hearing that Contractor, or any of Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of Owner or Agency in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, Owner may, by written notice to Contractor, terminate this Contract. Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.
- B. In the event this Contract is terminated, as provided in paragraph 18.04.A, Owner may pursue the same remedies against Contractor as it could pursue in the event of a breach of this Contract by Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, Owner may pursue exemplary damages in an amount (as determined by Owner) which shall not be less than three nor more than ten times the costs Contractor incurs in providing any such gratuities to any such officer or employee.

SC-18.05 Add the following language after Article 18.04.B with the title "Audit and Access to Records."

- A. Owner, Agency, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the Engineer which are pertinent to the Agreement, for the purpose of making audits, examinations, excerpts, and transcriptions. Engineer shall maintain all required records for three years after final payment is made and all other pending matters are closed.

SC-18.06 Add the following language after Article 18.05.A with the title “Small, Minority and Women’s Businesses.”

- A. If Contractor intends to let any subcontracts for a portion of the work, Contractor shall take affirmative steps to assure that small, minority, and women’s businesses are used when possible as sources of supplies, equipment, construction, and services. Affirmative steps shall consist of: (1) including qualified small, minority and women’s businesses on solicitation lists; (2) assuring that small, minority and women’s businesses are solicited whenever they are potential sources; (3) dividing total requirements when economically feasible, into small tasks or quantities to permit maximum participation of small, minority, and women’s businesses; (4) establishing delivery schedules, where the requirements of the work permit, which will encourage participation by small, minority and women’s businesses; (5) using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the U.S. Department of Commerce; (6) requiring each party to a subcontract to take the affirmative steps of this section; and (7) Contractor is encouraged to procure goods and services from labor surplus are firms.

SC-18.07 Add the following after Article 18.06.A with the title “Anti-Kickback.”

- A. Contractor shall comply with the Copeland Anti-Kickback Act (18 USC 874 and 40 USC 276c) as supplemented by Department of Labor regulations (29 CFR Part 3, “Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States”). The Act provides that Contractor or subcontractor shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled. Owner shall report all suspected or reported violations to Agency.

SC-18.08 Add the following after Article 18.07.A with the title “Clean Air and Pollution Control Acts.”

- A. If this Contract exceeds \$100,000, Compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h) and 42 USC 7401 et.seq.), section 508 of the Clean Water Act (33 U.S.C. 1368) and Federal Water Pollution Control Act (33 USC 1251 et seq.), Executive Order 11738,

and Environmental Protection Agency regulations (40 CFR part 15) is required.
Contractor will report violations to the Agency and the Regional Office of the EPA.

SC-18.09 Add the following after Article 18.08 with the title “State Energy Policy.”

- A. Contractor shall comply with the Energy Policy and Conservation Act P.L. 94-163). Mandatory standards and policies relating to energy efficiency, contained in any applicable State Energy Conservation Plan, shall be utilized.

SC-18.10 Add the following after Article 18.09 with the title “Equal Opportunity Requirements.”

- A. If this Contract exceed \$10,000, Contractor shall comply with Executive Order 11246, “Equal Employment Opportunity,” as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and as supplemented by regulations at 41 CFR part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”
- B. Contractor’s compliance with Executive Order 11246 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative active obligations required by the Standard Federal Equal Employment Opportunity Construction Contract Specifications, as set forth in 41 CFR Part 60-4 and its efforts to meet the goals established for the geographical area where the Contract is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the Contract, and in each trade, and Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting Contractor’s goals shall be a violation of the Contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.
- C. Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 of any tier for construction work under the Contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number; estimated dollar amount of subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the Contract is to be performed.

SC-18.11 Add the following after Article 18.10.C with the title “Restrictions on Lobbying.”

- A. Contractor and each subcontractor shall comply with Restrictions on Lobbying (Public Law 101-121, Section 319) as supplemented by applicable Agency regulations. This

Law applies to the recipients of contracts and subcontracts that exceed \$100,000 at any tier under a Federal loan that exceeds \$150,000 or a Federal grant that exceeds \$100,000. If applicable, Contractor must complete a certification form on lobbying activities related to a specific Federal loan or grant that is a funding source for this Contract. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 USC 1352. Each tier shall disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Certifications and disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms shall be provided by Owner.

SC-18.12 Add the following after Article 18.11.A with the title “Environmental Requirements.”

When constructing a project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental constraints:

- A. Wetlands – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.
- B. Floodplains – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert 100 year floodplain areas delineated on the latest Federal Emergency Management Agency Floodplain Maps, or other appropriate maps, i.e., alluvial soils on NRCS Soil Survey Maps.
- C. Historic Preservation – Any excavation by Contractor that uncovers an historical or archaeological artifact shall be immediately reported to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the State Historic Preservation Officer (SHPO).
- D. Endangered Species – Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presences of endangered and/or threatened species or their critical habitat be brought to the attention of Contractor, Contractor will immediately report this evidence to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the U.S. Fish and Wildlife Service.
- E. Mitigation Measures – If the project has an Environmental Report, Environmental Assessment, or Environmental Impact Statement to meet the requirements of the

National Environmental Policy Act, compliance with the mitigation measures, if any, in that document are hereby included as a condition of this contract.

EXHIBIT GC-A

Certificate of Owner's Attorney

I, the undersigned, _____, the duly authorized and acting legal representative of The Fort Valley Utility Commission to hereby certify as follows:

I have examined the attached Contract(s) and performance and payment bond(s) and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements is adequate and has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with the terms, conditions, and provisions thereof.

Date: _____

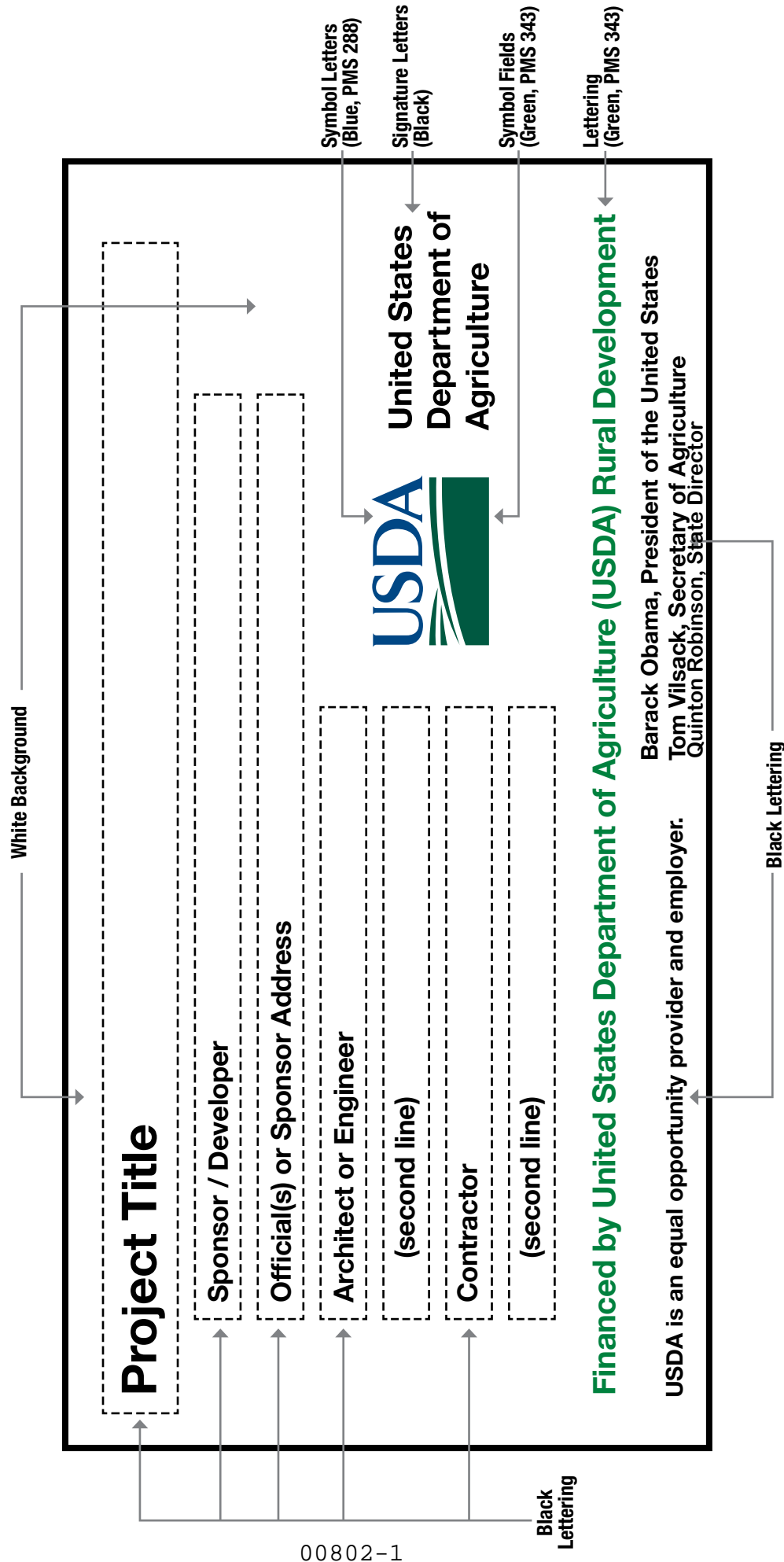
AGENCY CONCURRENCE

As lender or insurer of funds to defray the costs of this Contract, and without liability for any payments thereunder, the Agency hereby concurs in the form, content, and execution of this Agreement.

By: _____ Date: _____

Type Name: _____

TEMPORARY CONSTRUCTION SIGN FOR RURAL DEVELOPMENT PROJECTS



SIGN DIMENSIONS: 1200 mm x 2400 mm x 19 mm (approx. 4' x 8' x 3/4")
PLYWOOD PANEL (APA RATED A-B GRADE-EXTERIOR)

SECTION 00840
ADMINISTRATIVE AND PROCEDURAL ITEMS AND FORMS

PART 1. GENERAL

- 1.1 This section of the CONTRACT DOCUMENTS references the various forms and other documents that will become a part of these CONTRACT DOCUMENTS during the course of the WORK.

PART 2. MATERIALS

2.1 FORMS AND DOCUMENTS

- A. Application for Payment
- B. Certificate of Substantial Completion
- C. Work Change Directive
- D. Change Order
- E. Field Order

PART 3. EXECUTION

- 3.1 ENGINEER shall provide CONTRACTOR with sufficient copies of the above listed forms and/or documents where applicable for submittal by CONTRACTOR during course of the WORK. (Examples of the listed forms are included in this Section. CONTRACTOR may use these and/or Xerox copies of same for submittal).
- 3.2 ENGINEER shall use these forms for administrative and procedural duties. (Examples of the listed forms are included in this section).

APPLICATION FOR PAYMENT

INSTRUCTIONS

A. GENERAL INFORMATION

This standard form is intended as a guide only. Many projects require a much more extensive form with space for numerous items, descriptions of Change Orders, identification of variable quantity adjustments, summary of materials and equipment stored at the site and other information. It is expected that a separate form will be developed by Engineer or Contractor at the time Contractor's Schedule of Values is finalized. Note also that the format for retainage must be changed if the Agreement permits (or the Law provides), and Contractor elects, the deposit of securities in lieu of retainage. Refer to Article 14 of the General Conditions for provisions concerning payments of Contractor.

B. COMPLETING THE FORM

The Schedule of Values, submitted and approved as provided in paragraphs 2.05A and 2.07A of the General Conditions should be copied in the space indicated on the Application For Payment form. Note that the cost of materials and equipment is often listed separately from the cost of their installation. All Change Orders affecting the Contract Price should be identified and include such supplemental Schedules of Values as required for progress payments.

The form is suitable for use in the final Application for Payment as well as for Progress Payments; however, the required accompanying documentation is usually more extensive for final payment. All accompanying documentation should be identified in the space provided on the form.

C. ENGINEER'S REVIEW

Engineer must review all Applications for Payment with care to avoid recommending any payments not yet earned by Contractor. All accompanying documentation of legal nature, such as lien waivers, should be reviewed by Owner's attorney, and Engineer should so advise Owner.

EJCDC ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE		Contractor's Application for Payment No. _____	
To (Owner):		Application Period:	
Project:		From (Contractor):	Via (Engineer):
Owner's Contract No.:		Contract:	
		Contractor's Project No.:	Engineer's Project No.:

Application For Payment Change Order Summary		
Approved Change Orders	Additions	Deductions
Number		
TOTALS		
NET CHANGE BY CHANGE ORDERS		

1. ORIGINAL CONTRACT PRICE..... \$ _____ 2. Net change by Change Orders..... \$ _____ 3. Current Contract Price (Line 1 + 2)..... \$ _____ 4. TOTAL COMPLETED AND STORED TO DATE (Column F on Progress Estimate)..... \$ _____ 5. RETAINAGE: a. <input type="checkbox"/> Work Completed..... \$ _____ b. <input type="checkbox"/> Stored Material..... \$ _____ c. Total Retainage (Line 5a + Line 5b)..... \$ _____ 6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5c)..... \$ _____ 7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)..... \$ _____ 8. AMOUNT DUE THIS APPLICATION..... \$ _____ 9. BALANCE TO FINISH, PLUS RETAINAGE (Column G on Progress Estimate + Line 8 above)..... \$ _____	Payment of: \$ _____ (Line 8 or other - attach explanation of the other amount) is recommended by: _____ (Date) (Engineer) Payment of: \$ _____ (Line 8 or other - attach explanation of the other amount) is approved by: _____ (Date) (Owner) Approved by: _____ (Date) Funding Agency (if applicable)
--	---

Contractor's Certification

The undersigned Contractor certifies that to the best of its knowledge: (1) all previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to Owner indemnifying Owner against any such Liens, security interest or encumbrances); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

By: _____ Date: _____

Progress Estimate - Lump Sum Work

[illegible]

Progress Estimate - Unit Price Work

[illegible]

Stored Material Summary

Totals

Certificate of Substantial Completion

Project:	
Owner:	Owner's Contract No.:
Contract:	Engineer's Project No.:

This [tentative] [definitive] Certificate of Substantial Completion applies to:

- ☐ All Work under the Contract Documents: ☐ The following specified portions of the Work:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby declared and is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

A [tentative] [definitive] list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as provided in the Contract Documents except as amended as follows:

- ☐ Amended Responsibilities ☐ Not Amended

Owner's Amended Responsibilities:

Contractor's Amended Responsibilities:

EJCDC C-625 Certificate of Substantial Completion
Prepared by the Engineers Joint Contract Documents Committee and endorsed by the Construction Specifications Institute.

Page 1 of 2

SECTION 00840-8

ADMINISTRATIVE AND PROCEDURAL ITEMS AND FORMS

The following documents are attached to and made part of this Certificate:

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

Executed by Engineer

Date

Accepted by Contractor

Date

Accepted by Owner

Date

Work Change Directive

No. _____

Date of Issuance: _____ Effective Date: _____

Project: Water System Improvements to serve Fort Valley State University	Owner: Fort Valley Utility Commission	Owner's Contract No.:
Contract: C – Water Main Extensions		Date of Contract:
Contractor:		Engineer's Project No.: F7500.042

Contractor is directed to proceed promptly with the following change(s):

Item No.	Description

Attachments (list documents supporting change):

Purpose for Work Change Directive:

Authorization for Work described herein to proceed on the basis of Cost of the Work due to:

- ☐ Nonagreement on pricing of proposed change.
- ☐ Necessity to expedite Work described herein prior to agreeing to changes on Contract Price and Contract Time.

Estimated change in Contract Price and Contract Times:

SECTION 00840-10

ADMINISTRATIVE AND PROCEDURAL ITEMS AND FORMS

Contract Price \$ _____ (increase/decrease) Contract Time _____ (increase/decrease)
days

Recommended for Approval by Engineer:	Date
Authorized for Owner by:	Date
Received for Contractor by:	Date
Received by Funding Agency (if applicable):	Date:

SECTION 00840-11
ADMINISTRATIVE AND PROCEDURAL ITEMS AND FORMS

Change Order

No. _____

Date of Issuance: _____ Effective Date: _____

Project:	Owner:	Owner's Contract No.:
Contract:	Date of Contract:	
Contractor:	Engineer's Project No.:	

The Contract Documents are modified as follows upon execution of this Change Order:

Description:

Attachments (list documents supporting change):

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price: \$ _____	Original Contract Times: <input type="checkbox"/> Working days <input type="checkbox"/> Calendar days Substantial completion (days or date): _____ Ready for final payment (days or date): _____
[Increase] [Decrease] from previously approved Change Orders No. _____ to No. _____: \$ _____	[Increase] [Decrease] from previously approved Change Orders No. _____ to No. _____: Substantial completion (days): _____ Ready for final payment (days): _____
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial completion (days or date): _____ Ready for final payment (days or date): _____
[Increase] [Decrease] of this Change Order: \$ _____	[Increase] [Decrease] of this Change Order: Substantial completion (days or date): _____ Ready for final payment (days or date): _____
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial completion (days or date): _____ Ready for final payment (days or date): _____

RECOMMENDED: By: _____ Engineer (Authorized Signature) Date: _____ Approved by Funding Agency (if applicable): _____	ACCEPTED: By: _____ Owner (Authorized Signature) Date: _____	ACCEPTED: By: _____ Contractor (Authorized Signature) Date: _____ Date: _____
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Change Order
Instructions

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

END OF SECTION

TECHNICAL SPECIFICATIONS

SECTION 01025
MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. This Section describes the methods by which measurement will be made of the quantities for which payment will be made for the Project.
- B. The project is to be bid as three contracts.
- C. Defect assessment and non-payment for rejected work- See Article 13 of General Conditions.

1.02 MEASUREMENT OF WORK

- A. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.
- B. 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.
- C. 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.
- D. 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.
- E. Work completed shall be measured for completion against the schedule of values provided by the Contractor in accordance with the General Conditions. No work that is shown or inferred on Plans or in Specifications will receive additional payments to the lump sum bid price given on the BID FORM. The Contractor is responsible for providing a total and complete system and shall provide a price for said system on the Bid Form.

1.03 ESTIMATED QUANTITIES

- A. OMITTED

1.04 MEASUREMENT OF QUANTITIES

- A. Measurement by Weight – Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
- B. Measurement by Volume – Measured by cubic dimension using mean length, width and height or thickness.
- C. Measurement by Area – Measured by square dimension using mean length and width or radius.
- D. Linear Measurement – Measured by linear dimension, at the item centerline or mean chord.
- E. Stipulated Sum/Price Measurement – Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.

1.05 PROGRESS PAYMENTS

- A. Progress payments shall be based on percentage of work complete on a lump sum project. Payment will be made based on percent complete of lump sum breakdowns in the BID FORM.
- B. 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 lump sum price.
- C. All items listed for measurement and payment shall include all machinery, plant, materials and labor, etc., to successfully and satisfactorily complete Work specified.
- D. Payment – The Contractor will receive payment only for the items listed in the Bid Schedule of his 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 the 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.

- E. 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 not more than 10 days after effective date of agreement 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

- A. 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 and shop drawings for said materials have been approved.

PART 3 – EXECUTION

NOTE TO CONTRACTOR: The contractor is expected to provide all Items not described specifically below or in the **BID FORM**, but that are shown, described, or inferred in the **Plans and Specifications**. Such items are deemed “incidental” and should be included in the item of the Contractor’s choice or in the item to which it pertains. “Incidental” items include but are not limited to all required bonds, removal & replacement of fence, and removal & replacement of mailboxes and signs. Items that are not considered “incidental” are called out and described below.

3.01 WATER DISTRIBUTION

- A. Measurement:
1. Water Mains: Water Mains and Fire Hydrant Leads will be measured along the pipe from center of fitting to center of fitting or center of fitting to end of pipe in place, without deduction from the length of intermediate fittings or valves.
 2. Fire Hydrants: Measurement of fire hydrants will be on the basis of each installed.
 3. Gate Valves: Measurement of gate valves will be on the basis of each installed.
 4. Connect to Existing Water Main: Measurement for connection to an existing water main shall be on the basis of each connection made. All connections to existing water mains are outlined in the Plans.

5. Tapping Sleeve with Valve & Box: Measurement of tapping sleeve with valve and box will be on the basis of each installed for the sizes listed in the BID FORM.

B. Payment:

1. Water Mains: Water mains measured as described above will be paid for at the unit price bid per linear foot for the types and sizes of pipe shown in the BID FORM. Payment shall include all labor, equipment, and materials necessary to complete the work as specified. Payment for water mains shall also include any clearing and grubbing associated with the installation of the water main.
2. Fire Hydrants: Fire hydrants shall be paid for at the unit price per each shown in the BID FORM. The price shall include all labor, equipment, materials, and incidentals necessary for a complete installation. No separate payment will be made for gravel, strapping, adjustments of hydrant to grade, blocking, or other incidentals normally provided for a hydrant installation.
3. Gate Valves: Gate valves will be paid for at the unit price per each shown in the BID FORM for various sized valves. The price shall include all labor, equipment, materials (including valve markers and boxes), concrete blocking, concrete pad, and other incidentals required for a complete installation.
4. Connect to Existing Water Main: Payment for connection to an existing water main shall be on the basis of the price given in the BID FORM. Payment shall include location of the main and all labor, equipment, fittings, concrete blocking, and other incidental materials necessary to make the connection.
5. Tapping Sleeve with Valve & Box: Tapping sleeve with valve & box will be paid for at the unit price per each shown in the BID FORM for various sized taps. The price shall include all materials, labor, equipment, tapping sleeve, valve, valve box, concrete blocking, concrete pad, and all other incidentals required for a complete installation.

3.02 JACK & BORE

- A. Measurement: Measurement of jack and bore shall be on the basis of linear feet jacked and bored for each size casing.
- B. Payment: Payment for jack and bore of steel casing shall be on the basis of the unit price per linear foot for each size casing as specified in the BID FORM. Payment shall include all materials, labor and necessary extras to jack and bore the required size steel casing. Carrier pipe will be measured and paid for separately.

3.03 CLEARING & GRUBBING

- A. Measurement: No separate measurement for clearing and grubbing will be made as it will be considered a part of the water main pay item. Large diameter tree removal is considered part of clearing and grubbing. The Contractor is advised to make a field visit to the site prior to determining his price for water main installation.

3.04 NPDES SAMPLING/MONITORING

Payment for NPDES Monitoring shall be paid at the monthly price shown in the BID FORM and shall include all items as specified in Section 02373 (NPDES Storm Water Permitting). Two separate representative upstream/downstream sampling locations have been outlined in the plans.

3.05 EROSION CONTROL

- A. Measurement: Measurement for erosion control shall be on a lump sum basis. This shall include all silt fence, hay bales, erosion control matting and blankets, temporary and permanent grassing, seeding, mulching, and any other measures necessary for proper erosion control.
- B. Payment: Payment for sediment and erosion control shall be on the basis of the lump sum price in the BID FORM.

3.06 TRAFFIC CONTROL

Payment for traffic control shall be at the lump sum price given in the BID FORM and shall include all labor, materials, and equipment required to adhere to the latest MUTCD standards published by the D.O.T. during construction.

3.07 GRAVEL DRIVE REPLACEMENT

- A. Measurement: Measurement of gravel driveway removed and replaced shall be on the basis of the linear footage of gravel drive that is actually removed & replaced. Measurement will be made along the line of the pipe from edge of gravel drive to edge of gravel drive.
- B. Payment: Payment for gravel driveway removed and replaced shall be on the basis of the unit price given in the BID FORM. Payment shall include the removal of gravel for construction purposes and replacement upon completion. Finished gravel should match existing conditions. Existing gravel may be replaced if it is kept clean of dirt and matches pre-existing conditions when replaced.

3.08 TRAFFIC CONTROL

Payment for traffic control shall be at the lump sum price given in the BID FORM and shall include all labor, materials, and equipment required to adhere to the latest MUTCD standards published by the D.O.T. during construction.

3.09 ASPHALT REMOVAL & REPLACEMENT

- A. Measurement: Measurement for Asphalt Removal & Replacement shall be on the basis of the square yardage of asphalt removed and replaced.
- B. Payment: Payment for Asphalt Removal & Replacement shall be on the basis of the unit price bid in the BID FORM. Payment shall include all materials, labor, and equipment necessary for the removal of asphalt for construction purposes and replacement upon completion. Finished asphalt should match existing conditions. Any hauling and disposal costs shall also be included under this pay item.

3.10 DUCTILE IRON FITTINGS

- A. Measurement: Measurement of fittings will be on the basis of the weight installed. Weights will be based on compact weight, short body fittings.
- B. Payment: Ductile Iron fittings shall be paid for at the unit price bid per pound as shown in the BID FORM. The price will be based on compact weight and shall include all appurtenances, labor, equipment, and materials necessary for installation as specified.

3.11 CUT IN CAP (LABOR ONLY)

- A. Measurement: Measurement for cutting and capping existing water mains shall be on the basis of the number of locations in which the existing water main is cut and capped.
- B. Payment: Payment for cutting and capping existing water mains shall be made at the unit price per each given in the BID FORM. Payment shall include all equipment, labor, and incidental materials necessary to cut and cap the existing main. Pavement removal and replacement required will be paid for separately. Caps required to complete the task have been included in the weight of ductile iron fittings and shall be paid for under the ductile iron fittings item.

3.12 ASPHALT OVERLAY

- A. Measurement: Measurement of asphalt overlay shall be on the basis of the square yardage of asphalt resurfacing as shown on the plans.
- B. Payment: Payment for asphalt overlay shall be on the basis of the unit price per square yard given in the BID FORM. Payment shall include all labor, materials, and

equipment necessary to install asphalt and bituminous tack coat as specified. Payment shall include any temporary tapered edges and joints that are required when overlay is stopped at an intermediate point in the project limits and any tapered edges required to transition from asphalt overlay to existing asphalt edge at overlay limits.

3.13 COMBINATION AIR VALVES

- A. Measurement: Measurement of combination air valves shall be on the basis of each installed for the various sizes given in the BID FORM.
- B. Payment: Payment for combination air valves shall be made at the unit price for each size valve as given in the BID FORM. The price shall include all labor, materials, and equipment specified and items indicated on the Plans and including incidentals necessary for a complete installation.

More specifically, the unit price shall include installation of a precast manhole with required hatch and any fittings associated with the combination air valve. Payment for ductile iron pipe used through the manhole section shall also be made under the unit price for each valve.

END OF SECTION

**SECTION 01030
SPECIAL PROJECT PROVISIONS**

PART 1 – GENERAL

1.01 SUBSTANTIAL COMPLETION

- A. For this Project, Substantial Completion will not be certified until all water mains, water services, hydrants, valves, etc. have been installed, disinfected (for potable mains only) and pressure tested. All disturbed areas must be sufficiently stabilized and acceptable record drawings must be provided to the Engineer.

1.02 QUALIFICATIONS/QUALITY CONTROL

- A. All equipment furnished shall consist of standard equipment of proven ability, modified as required for the requirements of these Contract Documents.
- B. All suppliers and installers shall be fully experienced, reputable, qualified and regularly engaged in the manufacturing of the equipment to be furnished.
- C. All equipment shall be designed, constructed and installed in accordance with best practices and methods and shall operate satisfactorily as determined by the Engineer when installed as shown on the Drawings and/or specified.
- D. The Contractor shall have the sole responsibility for proper functioning of the equipment.

1.03 SUBMITTALS

- A. Reference is made to Section 01300 and the submittal data required herein under various paragraphs.

1.04 USE OF EXISTING PREMISES

The Contractors work force shall not use any of the Owner's existing facilities including rest rooms, break rooms, vending machines and/or other facilities unless permission is given by the owner. The Contractor shall provide all such facilities for the use of his personnel.

Protect all existing roads from damage by construction equipment and activity. All existing roads shall remain open and usable by the public at all times. Any damage to existing roads shall be repaired immediately to a condition equal to or better than the original condition at the Contractor's expense.

1.05 PROVISIONS FOR CONTROL OF EROSION

- A. Sufficient precautions as outlined in Section 02370 shall be taken during construction to minimize the run-off of polluting substances such as silt, clay, fuels, oils, bitumens, calcium chloride, or other polluting materials harmful to humans, fish, or other life, into the supplies and surface waters of the State. Control measures must be adequate to assure that turbidity in the receiving water will not be increased more than 10 nephelometric turbidity units (NTU), or as otherwise required by the State or other controlling body, in water used for public water supply or fish unless limits have been established for the particular water. In surface water used for other purposes, the turbidity must not exceed 25 NTU unless otherwise permitted. Special precautions shall be taken in the use of construction equipment to prevent operations which promote erosion.

1.06 PROVISIONS FOR THE CONTROL OF DUST

- A. Sufficient precautions as outlined in Section 01560 shall be taken during construction to minimize the amount of dust created. Wetting down the site may be required or as directed by the Engineer to prevent dust as a result of vehicular traffic.

1.07 DISINFECTION

- A. The Contractor shall clean, disinfect and bacteriologically test and clear in accordance with AWWA 651 all water supply facilities affected by this project which shall come into contact with raw water, water being treated or treated water prior to placing the facility in operation. The above statement shall apply to both new facilities installed and existing facilities.
- B. The Contractor shall employ a disinfection method approved by the Engineer and Owner, and shall fully satisfy the Owner that adequate disinfection has been achieved prior to placing a facility on-line.
- C. The cost of all disinfection work shall be included in the unit prices quoted in the Proposal.

1.08 CONNECTIONS TO EXISTING SYSTEMS OR MAIN INSTALLED BY OTHERS

- A. The Contractor shall perform all work necessary to locate, excavate and prepare for connections to the terminus of the existing mains or to mains installed by others as shown on the Drawings or where directed by the Owner. The cost for this work and for the actual connections to the existing pipelines or pipelines installed by others shall be included in the bid for the project and shall not result in any additional cost to the Owner. Said connections shall be made only after

approval by the Engineer.

1.09 WARRANTIES

- A. All equipment supplied under these Specifications shall be warranted by the Contractor and the equipment manufacturers for a period of one (1) year. Warranty period shall commence on the date of Owner acceptance.
- B. The equipment shall be warranted to be free from defects in workmanship, design and materials. If any part of the equipment should fail during the warranty period it shall be replaced in the machine(s) and the unit(s) restored to service at no expense to the Owner.
- C. The manufacturer's warranty period shall run concurrently with the Contractor's warranty or guarantee period. No exception to this provision shall be allotted. The Contractor shall be responsible for obtaining equipment warranties in accordance with Section 01740 from each of the respective suppliers or manufacturers.
- D. In the event that the manufacturer is unwilling to provide a one-year warranty commencing at the time of Owner acceptance, the Contractor shall obtain from the manufacturer a two (2) year warranty starting at the time of equipment delivery to the job site. This two-year warranty shall not relieve the Contractor of the one-year warranty starting at the time of Owner acceptance of the equipment.

1.10 SITE RESTORATION

- A. The Contractor shall remove all excess material and shall clean up the site as construction progresses. All damage, as a result of work under this Contract, done to existing structures, pavement, driveways, fences, paved areas, curbs and gutters, sidewalks, shrubbery, grass, trees, utility poles, utility pipelines, conduits, drains, catch basins, flagstones, rocked areas, graveled areas or otherwise stabilized areas or driveways and including all obstructions not specifically named herein, shall be repaired.

PART 2 – PRODUCTS

NOT USED

PART 3: - EXECUTION

NOT USED

END OF SECTION

SECTION 01050
SURVEYING AND FIELD ENGINEERING

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. Work covered in this Section includes the surveying and field engineering required to complete the project and meet the provisions of this document.

1.02 QUALITY CONTROL

- A. Contractor will employ a Land Surveyor registered in the State of Georgia and acceptable to the Owner/Engineer.

1.03 SUBMITTALS

- A. Submit name, address, telephone number and registration number of surveyor prior to beginning work.
- B. Upon request, submit documentation verifying accuracy of survey work. Documentation may include, but is not limited to, original field notes, worksheets, cutsheets, etc.
- C. Submit at least two sets of prints of “as-constructed” drawings with a surveyor’s certificate verifying that elevations and locations are in conformance with the contract drawings.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION

3.01 SURVEY REQUIREMENTS

- A. Construction Staking – The Contractor shall provide all construction staking using recognized surveying and engineering practices. The surveyor will locate lines, grades and locations called for in the contract drawings. The Owner will provide a suitable number of benchmarks and monuments for the Contractor to use as a reference.
- B. “As Built Drawings” – Contractor shall maintain record drawings for the project. All water mains (type and size) including valves, hydrants, casing locations, bends, etc. shall be located and tied to the Georgia State Plane Coordinates. All alignment of water pipe as it parallels streets, intersections, around cul-de-sacs, and easements

shall be shown. All relative information such as right-of-way, edge of pavement, centerline of road, centerline of railroad, state plane monuments, etc. shall be located and tied to Georgia State Plane Coordinates.

The As-Built plans shall be submitted in either the (.dxf) or the (.dwg) version 2012 or later on a non-rewritable (Read Only) CD, along with two (2) sets of plans in the same format as shown on the disk. The plans shall be submitted on a (24" x 36") sheet. The vertical and horizontal accuracy of the as-builts shall be within a 0.1-foot accuracy.

END OF SECTION

SECTION 01070 ABBREVIATIONS

PART 1 – GENERAL

1.01 GENERAL

- A. Wherever in these Specifications and Contract Documents the abbreviations, or pronouns in place of them are used, the intent and meaning shall be interpreted as specified herein.

1.02 ABBREVIATIONS

AA	Aluminum Association Incorporated
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AEIC	Association of Edison Illuminating Companies
AFBMA	Anti-Friction Bearing Manufacturer's association
AGA	American Gas Association
AGMA	American Gear Manufacturer's association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Movement and Control Association, Inc.
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
APHA	American Public Health Association
API	American Petroleum Institute
ARI	Air-Conditioning and Refrigeration Institute
ASA	American Standards Association
ASCE	American Society of Civil Engineers
ASCII	American Standard Code for Information Interchange United States of America Standards Institute
ASE CODE	American Standard Safety Code for Elevators, Dumbwaiters and Escalators American National Standards Institute
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association

BOCA	Building Officials and Code Administrators
CBM	Certified Ballast Manufacturers
CFR	Code of Federal Regulations
CMAA	Crane Manufacturers Association of America, Inc. (Formerly called: Overhead Electrical Crane Institute [OECI])
CRSI	Concrete Reinforcing Steel Institute
DEMA	Diesel Engine Manufacturer's Association
DHEC	Department of Health and Environmental Control
DHI	Door Hardware Institute
EEI	Edison Electric Institute
EIA	Electronic Industries Association
EJMA	Expansion Joint Manufacturer's Association
EPA	Environmental Protection Agency
EPD	Environmental Protection Division
FEDSPEC	Federal Specifications General Services Administration Specification and Consumer Information Distribution Branch
FEDSTDS	Federal Standards (see FEDSPECS)
FM	Factory Mutual Research
GDOT	State of Georgia Department of Transportation Standard Specifications Construction of Roads and Bridges
GDNR	State of Georgia Department of Natural Resources
HEI	Heat Exchange Institute
HI	Hydraulic Institute
IAPMO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronics Engineers, Inc.
IES	Illuminating Engineering Society
ISA	Instrument Society of America
JIC	Joint Industrial Council
MILSPEC	Military Specifications
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.
NAAMM	National Association of Architectural Metal Manufacturers
NACE	National Association of Corrosion Engineers
NEC	National Electric Code National Fire Protection Association
NBS	National Bureau of Standards
NEMA	National Electrical Manufacturer's Association
NESC	National Electric Safety Code American National Standards Institute
NFPA	National Forest Products Association (formerly National Lumber Manufacturer's Association)
NFPA	National Fire Protection Association
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Act U.S. Department of Labor Occupational and

	Health Administration
PCI	Prestressed Concrete Institute
SAE	Society of Automotive Engineers
SAMA	Scientific Apparatus Makers Association
SBC	Standard Building Code Published by SBCCI
SBCCI	Southern Building Code Congress International
SCDOT	South Carolina Department of Transportation
SDI	Steel Door Institute
SFPA	Southern Forest Products Association
SFPC	Standard Fire Prevention Code Published by SBCCI
SGC	Standard Gas Code Published by SBCCI
SMACNA	Sheet Metal and Air Conditioning Contractors National Association, Inc.
SMC	Standard Mechanical Code Published by SBCCI
SPC	Standard plumbing Code Published by SBCCI
SSPC	Steel Structures Painting Council
SSPWC	Standard Specifications for Public Works Construction Building News, Inc.
TEMA	Tubular Exchanger Manufacturer's Association
UBC	Uniform Building Code Published by ICBO
UL	Underwriters Laboratories, Inc.
UMC	Uniform Mechanical Code Published by ICBO
UPC	Uniform Plumbing Code Published by IAPMO
USBR	Bureau of Reclamation U.S. Department of Interior Engineering and Research Center
WEF	Water Environment Federation (formerly Water Pollution Control Federation)

PART 2 – PRODUCTS: - NOT USED

PART 3 – EXECUTION: - NOT USED

END OF SECTION

**SECTION 01200
PROJECT MEETINGS**

PART 1 – GENERAL

1.01 GENERAL

- A. Project meetings will be held on site as often as deemed necessary by the Engineer or his representative throughout the construction period. Meetings will normally be held monthly around the first of each month. Contractor's representatives shall attend.

The purpose of the meetings will be to discuss schedule, progress, coordination, submittals, and job-related problems and to approve Contractor's Pay Estimate.

- B. After Contractor has established utility locates, a field meeting will be scheduled between Contractor and Engineer to make necessary field adjustments.

PART 2 – PRODUCTS: - NOT USED

PART 3 – EXECUTION: - NOT USED

END OF SECTION

SECTION 01300 SUBMITTALS

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Submittal Procedures
- B. Construction Progress Schedules
- C. Product Data
- D. Shop Drawings
- E. Samples
- F. Design Data
- G. Test Reports
- H. Certificates
- I. Manufacturer's Instructions
- J. Manufacturer's Field Reports
- K. Erection Drawings

1.02 RELATED SECTIONS

- A. Section 01701 – Contract Closeout Procedures– Contract warranties, manufacturers' certificates, and closeout submittals.

1.03 SUBMITTAL PROCEDURES

- A. Deliver submittals to Engineer in acceptable form.
- B. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix. Resubmit as specified for initial submittal. Indicate on revised drawings all changes which have been made other than those requested by the Engineer.
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail

number, and specification section number, as appropriate.

- D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction work and coordination of information is in accordance with the requirements of the work and Contract Documents. Submittal without the Contractor's stamp will be returned to Contractor without Engineer's review.
- E. Make all submittals far enough in advance of scheduled dates for installation to provide all required time for reviews, for securing necessary approvals, for possible revision and resubmittal, and for placing orders and securing delivery. In scheduling, allow sufficient time for the Engineer's review following the receipt of the submittal. Coordinate submission of related items. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
- F. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed work.
- G. Provide space for Contractor and Architect/Engineer review stamps.
- H. When revised for resubmission, identify all changes made since previous submission.
- I. Distribute copies of reviewed submittals to concerned. Instruct recipients to promptly report any inability to comply with requirements.

1.04 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial schedule in triplicate within 15 days after date established in Notice to Proceed.
- A. After reviewed by the Engineer, revise and resubmit as required.
- C. Submit revised schedules with each Application for Payment, identifying changes since previous version.
- D. Submit a computer generated or horizontal bar chart with separate line for each major portion of work or operation, identifying first workday of each week.
- A. Show complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.
- B. Indicate estimated percentage of completion for each item of work at each submission.

- C. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates, including those furnished by Owner and required by Allowances.

1.05 PRODUCT DATA

- A. Product Data for Review:
 - 1. Submitted to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
 - 2. After review, provide copies and distribute in accordance with Submittal Procedures article above.
- B. Submit the number of copies which the Contractor requires, plus three copies which will be retained by the Engineer.
- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. Indicate Product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- E. After review, distribute in accordance with the Submittal Procedures article above.

1.06 SHOP DRAWINGS

- A. Contractor shall submit a minimum 6 copies of each shop drawing to the Engineer for review.
- B. Submitted to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents. Review of shop drawings by Engineer shall not relieve Contractor of his responsibility for the accuracy of the shop drawings for the furnishing of all materials and equipment required by the contract even though such items may not be indicated on the shop drawings reviewed by Engineer.
- C. Shop drawings shall include applicable technical information, drawings, diagrams, performance curves, schedules, templates, calculations, instructions, measurements and similar information as applicable to the specific item for which the shop drawing is prepared.

- D. Do not use Engineer's Drawings for shop or erection purposes.
- E. Each shop drawing copy shall bear a Contractor's stamp showing they have been checked. Shop drawings submitted to the Engineer without the Contractor's stamp will be returned to the Contractor without review.
- F. No review will be given to partial submittals of shop drawings for items which interconnect and/or are interdependent. It is the Contractor's responsibility to assemble the shop drawings for all such interconnecting and/or interdependent items, check them and then make one submittal to the Engineer.
- G. Schedule of Submittals – Within 30 days of Contract award and prior to any shop drawing submittal, the Contractor shall submit a schedule showing the estimated submittal date and the desired approval date for each shop drawing anticipated. Time lost due to unacceptable submittals shall be the Contractor's responsibility.

1.07 SAMPLES

- A. Samples for Review -
 - 1. Submitted to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
 - 2. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article above.
- B. Samples for Information –
 - 1. Submitted for the Engineer's knowledge as contract administrator or for the Owner.
- C. Include identification on each sample, with full Product information.
- D. Submit the number of samples specified in individual specification sections; one of which will be retained by Engineer.
- F. Review samples which may be used in the Work are indicated in individual specification sections.
- G. Samples will not be used for testing purposes unless specifically stated in the specification section.

1.08 DESIGN DATA

- A. Submit for the Engineer's knowledge as contract administrator or for the Owner.
- B. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.09 TEST REPORTS

- A. Submit for the Engineer's knowledge as contract administrator or for the owner.
- B. Submit test reports for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.10 CERTIFICATES

- A. When specified in individual specification sections, submit certification by the manufacturer, installation/application subcontractor, or the Contractor to Engineer, in quantities specified for product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer.

1.11 MANUFACTURER'S INSTRUCTION

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Engineer for delivery to Owner in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.12 MANUFACTURER'S FIELD REPORTS

- A. Submit reports for the Engineer's benefit as contract administrator or for the Owner.
- B. Submit report in duplicate within 15 days of observation to Engineer for information.
- C. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.13 REVIEWED SHOP DRAWINGS

A. Engineer Review –

1. Acceptable submittals will be marked “Approved.” A minimum of three copies will be retained by the Engineer for Engineer’s and the Owner’s use and the remaining copies will be returned to the Contractor.
2. Submittals requiring minor corrections before the product is acceptable will be marked “Furnish as Corrected.” The Contractor may order, fabricate and shop the items included in the submittals provided the indicated corrections are made.
3. Submittals marked “Revise and Submit” must be revised to reflect required changes and the initial review procedure repeated.
4. The “Rejected” notation is used to indicate products which are not acceptable. Upon return of a submittal so marked, the Contractor shall repeat the initial review procedure utilizing acceptable products.
5. Only two copies of items marked “Revise and Submit” and “Rejected” will be reviewed and marked. One copy will be retained by the Engineer and the other copy with all remaining unmarked copies will be returned to the Contractor for resubmittal.

B. No work or products shall be installed without a drawing or submittal bearing the “Approved” or “Furnish as Corrected” notation. The Contractor shall maintain at the job site a complete set of shop drawings bearing the Engineer’s stamp.

C. Substitutions – In the event the Contractor obtains the Engineer’s approval for the use of products other than those which are listed first in the Contract Documents, the Contractor shall, at the Contractor’s own expense and using methods approved by the Engineer, make any changes to structures, piping and electrical work that may be necessary to accommodate these products.

D. Use of the “Approved” or “Furnish as Corrected” notation on shop drawings or other submittals is general and shall not relieve the Contractor of the responsibility of furnishing products of the proper dimension, size, quality, quantity, materials and all performance characteristics, to efficiently perform the requirements and intent of the Contract Documents. The Engineer’s review shall not relieve the Contractor of the responsibility of errors of any kind on the shop drawings. Review is intended only to assure conformance with the design concept of the Project and compliance with the information given in the Contract Documents.

PART 2 – PRODUCTS: - NOT USED

PART 3 – EXECUTION: - NOT USED

END OF SECTION

SECTION 01516
TEMPORARY SANITARY FACILITIES

PART 1 GENERAL

1.01 SCOPE

- A. This section is intended to include requirements for temporary sanitary facilities provided by Contractor, including provisions for Contractor's use of existing and permanent facilities.

1.02 REQUIREMENTS INCLUDED

- A. Temporary Sanitary Facilities
- B. Maintenance and Service
- C. Removal
- D. Cleaning

1.03 USE OF EXISTING FACILITIES

- A. Use of the Owner's existing or new facilities is prohibited. The Contractor will be required to provide their own portable facilities.

1.04 USE OF PORTABLE FACILITIES

- A. Contractor shall provide portable sanitary facilities at such places as approved by the Owner.
- B. Contractor shall pay all costs for installation, maintenance, and removal of temporary sanitary facilities.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Materials may be new or used, adequate to the purpose, which will not create unsanitary conditions.

2.02 TOILET FACILITIES

- A. Enclosed portable self-contained units or temporary water closets and urinals, secluded from public view.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Provide facilities at time of site mobilization.
- B. Modify and extend service as work progresses.

3.02 MAINTENANCE AND SERVICE

- A. Clean areas of facilities weekly and maintain in a sanitary condition.
- B. Provide toilet paper, paper towels, and soap in suitable dispensers.

3.03 REMOVAL

- A. Remove portable units when other facilities are available or prior to Substantial Completion.

END OF SECTION

**SECTION 01560
ENVIRONMENTAL CONTROLS**

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Contractor shall furnish all material and labor for the installation and maintenance of the environmental control measurements throughout the project.

1.02 SITE MAINTENANCE

- A. The Contractor shall keep the work site clean and free from rubbish and debris. Materials and equipment shall be removed from the site when they are no longer necessary. Upon completion of the work and before final acceptance, the work site shall be cleared of equipment, unused materials, and rubbish to present a clean and neat appearance.

1.03 TEMPORARY DAMS

- A. Except in time of emergency, earth dams are not acceptable at catch basin openings, local depressions, or elsewhere. Temporary dams of sand bags, asphaltic concrete, or other acceptable material will be permitted when necessary to protect the work, provided their use does not create a hazard or nuisance to the public. Such dams shall be removed from the site as soon as they are no longer necessary.
- B. Dams shall not interfere with the existing storm drainage system.

1.04 AIR POLLUTION CONTROL

- A. The Contractor shall not discharge smoke, dust, and other contaminants into the atmosphere that violate the regulations of any legally constituted authority. The Contractor shall also abate dust nuisance by cleaning, sweeping, and sprinkling with water, or other means as necessary. The use of water, in amounts which result in mud on public streets, is not acceptable as a substitute for sweeping or other methods.

1.05 NOISE CONTROL

- A. Between 7:30 PM and 7:00 AM, noise from Contractor's operations shall not exceed limits established by applicable laws or regulations and in no event shall exceed 86 dBA at a distance of 50 feet from the noise source.

1.06 EROSION CONTROL

- A. All points of concentrated runoff from rainfall shall be visually monitored to determine that no eroded material from the construction site is being deposited in the adjacent ditches, lakes and streams. Measures shall be taken to promptly eliminate such a deposition if occurring, including the installation of detention ponds.
- B. Comply with all applicable requirements of Section 02370 – Soil Erosion and Sediment Control of these Specifications.

PART 2 PRODUCTS: - NOT USED

PART 3 EXECUTION: - NOT USED

END OF SECTION

SECTION 01570 TRAFFIC CONTROL

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. Contractor shall furnish all materials and labor for the installation and continuous maintenance of traffic control devices throughout the project.
- B. This item of work shall include furnishing, installing, maintaining, relocating and removing all traffic control devices used for the purpose of regulating, warning or directing traffic during the construction or maintenance of this project.
- C. Upon completion of work, warning devices are to be removed by the Contractor. If devices remain on site longer than ten (10) days after project completion, they shall be removed by the Owner and become his property.

1.02 SAFETY

- A. The governing factor in the execution and staging of work for this project is to provide the public with the safest possible travel conditions along the roadway through the construction zone. The contractor shall arrange his operation to keep the closing of any lane of a roadway to an absolute minimum.
- B. No work shall be started on any phase of the project until all appropriate traffic control devices are in place and in operation.
- C. Contractor is to take all practical precautions to maintain traffic flow, and provide safety of workers and the general public.
- D. At the end of each workday, contractor is to clear the roadway of all dirt and debris and add additional safety devices to maintain safe travel lanes.
- E. When not in use, all traffic control devices shall be removed, placed or covered so as not to be visible to traffic.

1.03 REFERENCES

- A. Manual for Uniform Traffic Control Devices (MUTCD) (latest edition).
- B. GDOT Standard Specifications for Construction of Roads and Bridges (latest edition), Section 150.
- C. GDOT Standard Construction Details (latest edition).

D. GDOT Construction Permits

PART 2 – PRODUCTS

2.01 PRODUCTS

- A. Traffic Control Devices include – signs and their supports, signals, pavement markings, barricades with sand bags, channelizing devices, warning lights, arrowboards, flaggers, or any other device used for the purpose of regulating, warning or guiding traffic through the construction zone.
- B. All Traffic Control Devices used on this project shall conform to the plans, GDOT Construction Permit requirements, DOT Construction Details and Specifications, and MUTCD. No modifications will be allowed without prior written approval of the Engineer.
- C. Traffic Control Devices shall be in proper, acceptable condition when in use. Devices which are unclear, damaged, or not correctly positioned shall be promptly restored to fully operational condition.

PART 3 – EXECUTION

3.01 EXECUTION

- A. Contractor is to *either* prepare and provide a traffic control plan for the Engineer's review prior to the Preconstruction Meeting, *or* utilize the prepared traffic control plan when provided with the drawings or when provided in the D.O.T. permit.
- B. The Contractor shall be responsible for the proper location, installation, and arrangement of all traffic control devices. Special attention shall be given to advance warning signs during construction operations in order to keep lane assignment consistent with barricade placement at all times. The Contractor shall cover all Traffic Control Devices which are inconsistent with detour or lane assignment patterns during the transition from one construction stage to another.
- C. Construction signs referring to daytime lane closures during working hours shall be removed or covered during non-working hours.
- D. When applicable the Contractor shall coordinate all traffic control work on this project with adjoining or overlapping projects, including barricade placement necessary to provide a uniform traffic detour pattern. When directed by the Engineer, the contractor shall remove all Traffic Control Devices which were

furnished, installed and maintained by him under this contract, and such devices shall remain the property of the Contractor.

- E. The Contractor shall ensure all Traffic Control Devices installed by him are operational 24 hours a day, including weekends and holidays. Provide additional inspections at regular intervals.
- F. When traveling in lanes open to public traffic, the Contractor's vehicles shall always move with and not against or across the flow of traffic. These vehicles shall enter or leave work areas in a manner which will not be hazardous to, or interfere with, traffic and shall not park or stop except within designated work areas. Personal vehicles shall not park within the right of way except in specific areas designated by the Engineer.
- G. Private driveways and parking areas shall be accessible at all times unless temporary closings are necessary for construction work and the contractor has notified the affected individuals and has approval from them.
- H. If trenches are to remain open overnight, or for an extended period of time, Contractor is to provide heavy-duty cover plates to allow vehicles access.
- I. Delays to the Contractor caused by complying with these requirements will be considered incidental to the item for traffic control and protection, and no additional compensation will be allowed.
- J. Where flaggers are required, they are to be adequately trained and qualified for the job.

END OF SECTION

SECTION 01701
CONTRACT CLOSEOUT PROCEDURES

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

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

1.02 RELATED REQUIREMENTS

- A. Section 01300 – Submittals
- B. Section 01720 – Project Record Documents
- C. Section 01740 – Warranties and Bonds

1.03 SUBSTANTIAL COMPLETION

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

1.04 FINAL COMPLETION

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

1.05 REINSPECTION FEES

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

1.06 CLOSEOUT SUBMITTALS

- A. Evidence of Compliance with Requirements of Governing Authorities –
 - 1. Completed "Project Close Out" form as presented at the end of this section.
 - 2. Project Record Documents – Under provisions of Section 01720.
 - 3. Operation and Maintenance Data – Under provisions of Section 01730.
 - 4. Warranties and Bonds – Under provisions of Section 01740.

5. Evidence of Payment and Release of Liens – In accordance with Conditions of the Contract.
6. Consent of Surety to Final Payment – Consent of Surety is to be sent by Surety directly to Engineer to the attention of the Project Engineer.

1.07 APPLICATION FOR FINAL PAYMENT

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

PART 2 PRODUCTS: - NOT USED

PART 3 EXECUTION: - NOT USED

PROJECT CLOSE OUT FORM

CHECK-OFF LIST

Document Received**	Number of Copies	Date
Contractor's Warranty		
Statutory Affidavit		
Non-Influence Affidavit		
Inspection Reports		
[EPD] Inspection		
Other Agencies		
County Building Inspector		
County Plumbing Inspector		
County Electrical Inspector		
State Fire Marshall-Occupancy Certificates		
Consent of Surety to Final Payment		
Contractor's Affidavit – Release of Liens		
Other as Specified – (fill in):		
Maintenance Manuals & Equipment Brochures		
(Required for All Equipment Items)		

Document Received**	Number of Copies	Date
Other as specified – (Fill in):		
Keys		
Schedule by door Locations		
Receipt for Keys		
Schedule of Value tags, Location & Function		

** Where applicable by Specification.

END OF SECTION

SECTION 01710 FINAL CLEAN-UP

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Final clean up of site, roadway and buildings.

1.02 DESCRIPTION

- A. Execute clean-up prior to inspection for Substantial Completion of the Work.

1.03 DISPOSAL REQUIREMENTS

- A. Remove and dispose of waste materials, rubbish, debris and trash in compliance with provisions of governing laws, codes, ordinances and regulations.
 - 1. Do not burn or bury rubbish, trash, debris and waste materials on Project site.

PART 2 – PRODUCTS

2.01 CLEANING MATERIALS

- A. Use materials which will not create hazards to health or property, and which will not damage surfaces.
- B. Use only materials and methods recommended by manufacturer of material being cleaned.

PART 3 – EXECUTION

3.01 PERIODIC CLEANING

- A. On a regular and frequent basis during progress of work, perform cleaning necessary to keep Project site and adjacent properties free from unsightly and unsafe accumulation of scrap and waste materials, debris, rubbish and trash resulting from construction operations.
 - 1. Provide sufficient trash bins and containers for collection of scrap and waste material, debris, rubbish and trash.
 - 2. Provide separate, closeable top metal containers for collection of oil and

paint soaked rags; empty volatile substance cans and other waste products subject to spontaneous combustion.

3. Designate approved eating areas and provide covered containers conforming to local health codes for collection of waste paper and leftover foodstuffs. Enforce usage of containers by workmen.
- B. Dispose of scrap and waste materials, debris, rubbish and trash by one of the following optional methods –
1. Provide services of company regularly engaged in refuse disposal operations, including usage of large metal dump-type trash containers.
 2. Use own forces and equipment for loading, hauling and disposal.
- C. Remove accumulations of scrap and waste materials as bins and containers are filled and not less than once per week.
1. Remove containers containing products subject to spontaneous combustion daily.
 2. Remove containers containing waste paper and leftover foodstuff daily.
 3. Legally dispose of all waste materials, rubbish, volatile materials and cleaning materials off Project site.
 4. Dispose of no materials in waterways.

3.02 DUST CONTROL

- A. Site Work – When working on unpaved or disturbed paved streets, Contractor shall maintain a water truck on site for dust control. All dusty work sites in residential areas shall be watered at least twice per day and whenever directed by the Owner's representative.
- B. Buildings – During application of finished surface materials, including painting and decorating, employ dust control methods during cleaning operations to prevent dust from contaminating wet and freshly coated surfaces.

3.03 FINAL CLEANING

- A. Site Work
1. All piles of dirt and rocks are to be removed from the work areas.

2. All disturbed areas are to be grassed and mulched according to these specifications.
3. All construction debris is to be removed to an approved disposal site.
4. All streets are to be swept with a mechanical sweeper.

B. Buildings

1. All construction debris shall be removed from the building and disposed of at an approved disposal site.
2. The exterior face of the building shall be cleaned of all mud or dirt that may have stuck to the building as a result of site work and landscaping. Touch up all chipped or smudged paint.
3. Clean all interior wall surfaces, fixtures, doors, windows and equipment.
4. Remove labels, tags, stickers and unauthorized identification markings from finished surfaces.
 - (a) Do not remove permanently affixed nameplates, instructions, markings, Underwriters Laboratories Labels and approval stickers, Factory Mutual approved stickers and other identifying markings required by federal, state and local codes, ordinances and regulations.
5. Remove broken, chipped and defective glass; remove stains, spots, marks, paint smears; dirt and foreign materials; clean and polish exterior and interior glass; clean and polish mirrors.
6. Remove temporary protective coatings, tapes and films from finished aluminum surfaces and ornamental metal surfaces, clean and polish aluminum and ornamental metal in compliance with manufacturer's instructions.
7. Remove paint smears, spots, marks, dirt, mud and dust from exposed interior and exterior finished surfaces.
8. Clean and polish finished hardware; remove marks, stains, scratches and blemishes.
9. Clean and polish ceramic floor and wall tile; clean and polish toilet

fixtures and trim, toilet accessories and toilet compartments.

10. Sweep concrete floors not less than broom clean; vacuum where necessary to remove excessive dust; thoroughly clean other hard surfaced floors.
 - (a) Remove mortar droppings, joint compound, plaster and cementitious material droppings from floors prior to final cleaning.
 - (b) Concrete floors of process areas shall be rinsed with water and broomed and allowed to dry before final inspection.
11. Sweep exterior paved surfaces broom clean; rake clean unpaved surfaces.
12. Thoroughly clean all items of mechanical and electrical equipment; remove excess oils and grease from exposed surfaces.
 - (a) Clean permanent filters and replace disposable filters if ventilating units were operated during construction.
 - (b) Clean ducts, blowers and coils if units were operated without filters during construction.
13. Vacuum clean carpeted and similar soft surfaces.
14. Clean, machine buff, wax and polish all resilient and hard-surfaced floors as specified.

3.04 INSPECTION

- A. Prior to occupancy by Owner of any designated portion of Work, conduct inspection in presence of Owner to verify work is properly clean and ready for acceptance by Owner.

END OF SECTION

SECTION 01720
PROJECT RECORD DOCUMENTS

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Maintenance of Record Documents and Samples.
- B. Submittal of Record Documents and Samples.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. In addition to requirements in General Conditions, Maintain at the site for Owner, two record copies of:
 - 1. Contract Drawings
 - 2. Specifications
 - 3. Addenda
 - 4. Approved Change Orders, field orders or other modifications to the Contract
 - 5. Approved shop drawings, product data, and samples
 - 6. Field test records
 - 7. Inspection Certificates
 - 8. Manufacturer's certificates
- B. Store Record Documents and samples in Field Office apart from documents used for construction. Provide files, racks, and secure storage for Record Documents and samples. Records should be stored in a clean dry area with easy access.
- C. Document Files –
 - 1. Contract Drawings shall be maintained in a hanging stickfile.
 - 2. Specifications, addenda and Change Orders shall be filed in a "Banker Box" type file with hanging file folders.
 - 3. Shop drawings shall be filed in "Banker Box" hanging file with a separate

file folder for each item. The Contractor shall maintain an index of shop drawings in the first folder. Each folder shall be labeled with the name of the item and the specifications and/or drawing number.

4. Field tests and inspection certificates shall be maintained in separate file folders.
 5. All labels or indexes shall be typed or printed.
- D. Maintain Record Documents in a clean, dry and legible condition. Do not use Record Documents for construction purposes.
- E. Keep Record Documents and samples available for inspection by Engineer.

1.03 RECORDING

- A. “As Built Drawings” – Contractor shall maintain record drawings for the project. All water mains (type and size) including valves, hydrants, casing locations, bends, etc. shall be located and tied to the Georgia State Plane Coordinates. All alignment of water pipe as it parallels streets, intersections, around cul-de-sacs, and easements shall be shown. All relative information such as right-of-way, edge of pavement, centerline of road, state plane monuments, etc. shall be located and tied to Georgia State Plane Coordinates.

The As-Built plans shall be submitted in either the (.dxf) or the (.dwg) version 2012 or later on a non-rewritable (Read Only) CD, along with two (2) sets of plans in the same format as shown on the disk. The plans shall be submitted on a (24” x 36”) sheet. The vertical and horizontal accuracy of the as-builts shall be within a 0.1-foot accuracy.

END OF SECTION

**SECTION 01740
WARRANTIES AND BONDS**

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Preparation and submittal.
- B. Time and schedule of submittals.

1.02 RELATED SECTIONS

- A. General Conditions – Warranties and correction of work.
- B. Section 01701 – Contract Closeout – Contract closeout procedures.
- C. Individual Specifications Sections – Warranties required for specific Products or Work.

1.03 FORM OF SUBMITTALS

- A. Bind in commercial quality, 8-1/2 x 11 inch three-ring side binders with hardback, cleanable, plastic covers.
- B. Label cover of each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible principal.
- C. Table of Contents – Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification Section in which specified, and the name of the product or work item.
- D. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- E. Provide plastic cardholder sleeve and insert business cards from all subcontractors and general contractors' personnel including on-site representative, project manager and owner of company. Insert into manual this "card file" after table of contents.

1.04 PREPARATION OF SUBMITTALS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within fifteen (15) days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Completion is determined. Provide three complete notebooks to the Engineer for distribution. The Owner will receive two copies and the engineer will retain one copy.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.

1.05 TIME OF SUBMITTALS

- A. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten (10) days after acceptance.
- B. Make other submittals within ten (10) days after Date of Substantial Completion, prior to final Application for Payment.
- C. For items of Work when acceptance is delayed beyond Date of Substantial Completion, submit within ten (10) days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION

SECTION 02220

DEMOLITION

PART 1 - GENERAL

1.01 SCOPE

- A. The Contractor shall furnish all labor, materials, equipment, and incidentals required for demolition, removal and disposal work as shown on the Contract Drawings and as specified herein.
- B. Included, but not limited to, are demolition and removals of existing materials, equipment, or work necessary to install the new work as shown on the Contract Drawings and as specified herein. Demolition includes structural concrete, foundations, walls, doors, windows, structural steel, metals, roofs, masonry, attachments, appurtenances, piping, electrical and mechanical equipment, paving, curbs, walks, fencing, and similar existing facilities.
- C. Demolitions and removals which may be specified under other Sections shall conform to requirements of this Section.

1.02 RELATED WORK

- A. Section 02315 – Excavation, Trenching and BF for Utilities
- B. Section 02370 – Soil Erosion Control
- C. Section 02372 – NPDES Stormwater Permitting

1.03 SUBMITTALS

- A. Schedule: Submit for approval proposed methods, equipment, and operations sequence.

1.04 JOB CONDITIONS

- A. Explosives:
 - 1. No blasting will be allowed.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

- A. All materials and equipment removed from existing work shall become the property of the Contractor except for those which the Owner has identified and marked for his use. All materials and equipment marked by the Owner to remain his shall be carefully removed by the Contractor so as not to be damaged, cleaned and stored on or adjacent to the site in a protected place specified by the Engineer or delivered to a location specified by the Owner.
- B. The Contractor shall dispose of all demolition materials, equipment, debris, and all other items not marked by the Owner to remain as his, off the site and in conformance with all existing applicable laws and regulations.
- C. Pollution Controls:
 - 1. Use water sprinkling, temporary enclosures, and other suitable methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level. Comply with governing regulations pertaining to environmental protection.
 - a. Do not use water when it may create hazardous or objectionable conditions such as flooding, pollution, and groundwater contamination.
 - b. Clean adjacent structures, facilities, and improvements of dust, dirt, and debris caused by demolition operations.
- D. The demolition work shall include removal to two (2) feet below proposed grades.
- E. All rails from railroad removal shall become the property of the Owner and be stored on site as designated by Owner.

3.02 STRUCTURAL REMOVALS

- A. The Contractor shall completely remove all structures as shown on the Contract Drawings or as specified herein unless otherwise directed by the Engineer.
- B. All concrete, brick, tile, concrete block, roofing materials, reinforcement, structural or miscellaneous metals, plaster, wire mesh and other items contained

in or upon the structure shall be removed and taken from the site, unless otherwise approved by the Engineer. Demolished items shall not be used in backfill.

3.03 DISCONNECTION OF UTILITY SERVICES

- A. Utilities shall be disconnected at the points indicated. Where such disconnection will interrupt the utility services to an area not included in the Contract, arrangements for such interruption shall be reviewed with the Engineer at least 72 hours in advance of the interruption. Where water and sewer lines are disconnected or removed the remaining utility shall be plugged and abandoned below grade.

3.04 BURNING

- A. The use of burning at the project site for the disposal of refuse and debris will not be permitted.

3.05 PROTECTION OF EXISTING WORK

- A. Existing work to remain shall be protected from damage. Work damaged by the Contractor shall be repaired or restored to its original condition or acceptable equivalent.

3.06 EXISTING UTILITIES

- A. Utility Services: Disconnections of utility services shall be coordinated so as not to affect service to other areas outside of the project limits. The owners of all utilities must be contacted prior to proceeding with work. See special project provisions for limitations on water outages.
- B. Utilities: Remove or abandon all existing utilities as indicated. When utility lines are encountered, that are not indicated on the drawings, they shall be removed or abandoned to the extent that they would project into or interfere with the new construction.

3.07 DISPOSITION OF MATERIAL

- A. Title to Materials: Title to all materials and equipment to be demolished, except railroad trackage, track hardware, crossties to be salvaged and historical items, is vested in the Contractor upon receipt of notice to proceed. The Owner will not be responsible for the condition, loss or damage to such property after notice to proceed.

- B. Material for Salvage: Material that is salvageable will be removed from the project site by the Contractor.
- C. Unsalvageable Materials: Concrete, masonry and other noncombustible materials, other than concrete permitted to remain in place, shall be disposed of by the Contractor off the property. Other materials such as nonuseable crossties, lumber, etc. shall be removed from the site by the Contractor.

3.08 HISTORICAL ITEMS

- A. There are no known historical items on the project site; however, if historical items are discovered, remove historical items in a manner to prevent damage.
- B. Turn over historical items, if found, to the Owner for disposition such as:
 - 1. Corner Stones
 - 2. Content of Corner Stones
 - 3. Document Boxes wherever located on the site.
 - 4. Belgian Block

3.09 CLEAN-UP

- A. Contractor shall remove from the site all debris resulting from the demolition operations as it accumulates. Upon completion of the work, all materials, equipment, waste and debris of every sort shall be removed and the premises shall be left clean, neat and orderly.
- B. All materials and debris resulting from demolition and removal operations shall be disposed of off-site in an authorized, permitted disposal site.

END OF SECTION

SECTION 02230

SITE CLEARING

PART 1 – GENERAL

1.01 WORK INCLUDED

- A. Furnish all necessary labor, equipment, material and transportation and performing all operations necessary for removal of surface debris, trees, shrubs, and other plant life.

1.02 RELATED WORK

- A. Section 02510 – Water Distribution

1.03 REFERENCED STANDARDS

- A. Coordinate clearing work with the appropriate utilities companies.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.01 PREPARATION

- A. Verify that existing plant life designated to remain is tagged or identified.

3.02 CLEARING & GRUBBING

- A. Clear areas required for access to site and execution of Work. Clearing shall consist of the felling and cutting of trees into sections, and the satisfactory disposal of the trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within the area to be cleared. Trees, slumps, roots, brush, and other vegetation in areas to be cleared shall be burned or removed completely from the site, except such trees and vegetation as may be indicated or directed to be left standing. Trees designated to be left standing within the cleared areas shall be trimmed of dead branches 1-1/2 inch or more in diameter. Limbs and branches to be trimmed shall be neatly cut close to the hole of the tree or main branches. Cuts more than 1-1/2 inch in diameter thus made shall be painted with approved treewound paint. Trees and vegetation to be

left standing shall be protected from damage incident to clearing, grubbing, and construction operations, by the erection of timber barriers or by such other means as the circumstances require. Such barriers must be placed and be approved by the OWNER before construction observations can proceed (See 3.03). Clearing shall also include the removal and disposal of structures that obtrude, encroach upon, or otherwise obstruct the work.

- B. Grubbing shall consist of the removal and disposal of stumps, roots larger than one (1) inch in diameter, and matted roots from the designated grubbing areas. This material, together with logs and other organic or metallic debris not suitable for building of pavement subgrade or building pads, shall be excavated and removed to a depth of not less than 18-inches below the original surface level of the ground in embankment areas and not less than 2-feet below the finished earth surface in excavated areas. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the original adjacent surface of the ground.

3.03 PROTECTION

- A. All trees on the site will be saved except those marked specifically on the site by the Owner’s representative for removal during construction. No trees, either those marked for removal on the site or any other tree, may be removed from the site prior to the preconstruction conference. All trees not to be removed will be protected from injury to their roots and to their tope to a distance of three (3’) feet beyond the drip-line and no grading, trenching, pruning, or storage of materials may go in this area except as provided by a stakeout by a Owner’s representative. The Contractor will pay a penalty for any tree removed from the site which has not been marked specifically for removal. The Contractor also will pay for any tree which dies due to damage during construction. This applies to all trees on the site whether or not they are shown on the plans.
- B. The Contractor shall not be held accountable for damages to trees resulting from placement of fill or removal of soils where such action is required by the contract documents. Any tree, the trunk of which is within 10 feet of any footing or trench, shall be exempt from these penalties except that the Contractor shall exercise all reasonable precautions to preserve even these trees. The contractor agrees to pay penalties as established below in the event that he or any of his subcontractors causes the loss or removal of trees designated to be saved under the provisions of the Agreement.

The penalty is as follows:

<u>Tree Diameter at a Point 4 Feet Above Existing Grade</u>	<u>Penalty</u>
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6" – 7"	\$300.00
7" – 8"	\$375.00
8" – 11"	\$550.00
12" – 20"	\$800.00
21" and larger	\$1,000.00

- C. Trees to be graded by the Owner's representative as to variety, condition and site importance with the above figures acting as a maximum penalty with the lowest assessment amount to be no less than one-half of the above penalty figures.
- D. Protect bench marks, survey control points, and existing structures from damage or displacement.
- E. Protect all utilities that remain.
- F. Clearing operations shall be conducted so as to prevent damage by falling trees to trees left standing, to existing structures and installations, and to those under construction, and so as to provide for the safety of employees and others.

3.04 REMOVAL

- A. Where indicated or directed, trees and slumps shall be removed from areas outside those areas designated for clearing and grubbing. The work shall include the felling of such trees and the removal of their stumps and roots. Trees shall be disposed of as hereinafter specified.
- B. Remove debris, rock, and other extracted plant life from site.
- C. Partially remove paving, curbs, and sidewalk; as indicated. Neatly saw cut edges at right angle to surface.

3.05 DISPOSAL

- A. Disposal of trees, branches, snags, brush, stumps, etc., resulting from the clearing and grubbing shall be the responsibility of the Contractor and shall be disposed of by removal from the site of this work. All costs in connection with disposing of the material will be at the Contractor's expense. All liability of any nature resulting from the disposal of the cleared and grubbed material shall become the responsibility of the Contractor. The disposal of all materials cleared and grubbed will be in accordance with the rules and regulations of the State of Georgia. No material will be burned on site.

END OF SECTION

SECTION 02315
EXCAVATION, TRENCHING AND BACKFILL FOR UTILITY SYSTEMS

PART 1 GENERAL

1.01 SCOPE

- A. Furnish all labor, materials, equipment and incidentals necessary to perform all excavation, trenching and back fill required to complete the work shown on the Drawings and specified herein. The work shall include, but is not limited to, excavation for manholes, vaults, electrical manholes, hand holes, conduits, cables, raceways and ducts and pipes; all backfilling, embankment and grading; disposal of waste and surplus materials; and all related work such as sheeting, bracing and dewatering.
- B. Obtain materials required for backfill, fill, or embankments in excess of that available on the site from other sources. Include all costs of obtaining off-site materials in the contract price for the work to which it pertains.

1.02 RELATED WORK

- A. Section 02510 – Water Distribution System
- B. Section 02920 – Grassing

1.03 REFERENCES

- A. American Society for Testing and Materials.

1.04 TESTING SERVICES

- A. The Contractor shall obtain the service of a certified testing service to perform compaction testing as outlined in this section. The cost of these services shall be at Contractor's expense. See Section 3.09 for details.
- B. Soil testing shall be performed by an accredited testing laboratory. Tests shall be performed in accordance with applicable ASTM or AASHTO standard methods, unless otherwise specified.
- C. If the Engineer determines, based on tests reports and inspections, that layers which have been placed are below the specified density, the Contractor shall provide additional compaction and testing at no additional expense to the Owner.

1.05 PROTECTION

A. Sheeting and Bracing

1. Furnish, put in place, and maintain such sheeting and bracing as may be required to support the sides of excavations, to prevent any movement which could in any way diminish the ridge of the excavation below that necessary for proper construction, and to protect adjacent structures from undermining or other damage. If the Engineer is of the opinion that at any points sufficient or proper supports have not been provided, he may order additional supports put in at the expense of the Contractor, and compliance with such order shall not relieve or release the Contractor from his responsibility for the sufficiency of such supports. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled and rammed. Where soil cannot be properly compacted to fill a void, lean concrete shall be used as backfill at no additional expense to the Owner. Sheeting and Bracing requirements are further defined in OSHA Standards, Subpart P, Part 1926 of the Code of Federal Regulations.
2. The Contractor shall construct the sheeting outside the neat lines of the foundation unless indicated otherwise to the extent he deems it desirable for his method of operation. Sheeting shall be plumb and securely braced and tied in position. Sheeting and bracing shall be adequate to withstand all pressures to which the trench will be subjected. Any movement or bulging which may occur shall be corrected by the Contractor at his own expense so as to provide the necessary clearances and dimensions.
3. Where sheeting and bracing is required to support the sides of excavations, the Contractor shall engage a Professional Engineer, registered in the State of Georgia to design the sheeting and bracing. The sheeting and bracing installed shall be in conformity with the design, and certification of this shall be provided by the Professional Engineer.
4. The Contractor shall leave in place to be embedded in the backfill all sheeting and bracing not shown on the Drawings but which the Engineer may direct him in writing to leave in place at any time during the progress of the work for the purpose of preventing injury to structures, utilities, or property, whether public or private. The Engineer may direct that timber used for sheeting and bracing be cut off at any specified elevation. The contractor will be paid for such sheeting directed by the Engineer to be left in place in accordance with the General Conditions. All timber sheeting to be left in place shall be treated.
5. All sheeting and bracing not left in place shall be carefully removed in

such manner as not to disturb utilities, or property. All voids left or caused by withdrawal of sheeting shall be immediately refilled with sand by ramming with tools especially adapted to that purpose, or otherwise as acceptable to Engineer and Owner.

6. The right of the Engineer to order sheeting and bracing left in place shall not be construed as creating any obligation on his part to issue such orders, and his failure to exercise his right to do so shall not relieve the Contractor from liability for damages to persons or property occurring from or upon the work on the part of the Contractor to leave in place sufficient sheeting and bracing to prevent any caving or moving of the ground.
7. No sheeting is to be withdrawn if driven below mid-diameter of any pipe, and under no circumstances shall any sheeting be cut off at a level lower than 1 ft above the top of any pipe. The cost of said sheeting shall be part of the base bid.

B. Dewatering and Drainage

1. The Contractor shall at all times during construction provide and maintain proper equipment and facilities to remove all water entering excavations, and shall keep such excavations dry so as to obtain a satisfactory undisturbed subgrade foundation condition until the fills, structures or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural levels. The Contractor shall engage a Geotechnical Engineer, Registered in the State of Georgia where required, to design the dewatering system. The Contractor shall submit to the Engineer for review the design of the dewatering systems prior to commencing work.
2. The Contractor shall furnish, install, maintain, operate and remove a temporary dewatering system consisting of trenches, sump pits, deep wells, well points, or other methods as required to lower and control the groundwater level so that the pipes may be installed in the dry. The Contractor shall assume full responsibility for the design and installation of an adequate dewatering system. The Contractor shall, at his own expense, correct all damage resulting from inadequacy of the dewatering system or from flooding of the construction site from other causes.
3. The Contractor shall maintain the water level below the excavated area for the various phases of the work continuously and shall make such provisions as may be necessary to avoid interruptions due to weather, labor strikes, power failures, or other delays. He shall provide and have ready for immediate use at all times diesel or gasoline powered standby pumping units to serve the system in case of failure of the normal

pumping units.

4. Piping and boiling, or any form of uncontrolled seepage, in the bottom or sides of the excavation shall be prevented at all times. If for any reason the dewatering system is found to be inadequate to meet the requirements set forth herein, the Contractor shall at his own expense make such additions, changes and/or replacements as necessary to provide a satisfactory dewatering system.
5. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation. Well or sump installations shall be constructed with proper sand filters to prevent drawing of finer grained soil from the surrounding ground.
6. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and pumped from the excavation to maintain a bottom free from standing water.
7. The Contractor shall take all additional precautions to prevent uplift during construction. The Contractor shall maintain the groundwater level below the pipe so flotation is prevented.
8. Drainage water shall be disposed of through a desilting basin which will prevent the discharge of sediment into any surface waters or existing drains, and to prevent flow or seepage back into the excavated area.
9. Flotation shall be prevented by the Contractor by maintaining a positive and continuous operation of the dewatering system. The Contractor shall be fully responsible and liable for all damages which may result from failure of this system.
10. Removal of dewatering equipment shall be required; the material and equipment constituting the system shall be removed by the Contractor.
11. The Contractor shall take all necessary precautions to preclude the accidental discharge of fuel, oil, etc. in order to prevent adverse effects on groundwater quality.

C. Culverts and Ditches

1. Protect drainage culverts from damage. If damaged, restore to satisfactory condition at no cost to the Owner.

2. If it is necessary to remove a culvert, do not replace until the proposed pipeline is installed and trench backfilled and compacted to the subgrade of the culvert. Replace culverts to the line and grade established by the Owner.
3. Backfill minor drainage ditches so that the upper one-foot of material between ditch banks is topsoil, loam, or clay.
4. Compact this material for the full ditch width to a minimum of 95% of maximum density as determined by ASTM D 1557.
5. Ditches steeper than 2:1 slope shall be protected and reinforced with a synthetic fiber or grid material. Contractor has the option not to use reinforcement for slopes 2:1 or flatter. Correct any ditch erosion occurring as a result of pipeline construction at no cost to the Owner.

D. Water, Gas, Telephone, Power, Cable

1. Protect all other utilities from damage. Notify utility owner prior to start of excavation as directed in section 4.3 of the General Conditions. If, during the work, the utility is damaged, notify the utility company and the Owner immediately. Do not attempt to repair or replace damaged utilities unless so directed by the utility company and approved by the Engineer. Payment for restoration of damaged utilities shall be the Contractor's responsibility.

1.06 JOB CONDITIONS

A. Soils

1. The contractor shall examine the site and review any available test borings or undertake his own soil borings prior to submitting his bid, taking into consideration all conditions that may affect his work. The Owner and Engineer will not assume responsibility for variations of subsoil quality or conditions at locations other than places shown and at the time the investigation was made. The Contractor shall accept the site in its existing condition, and shall assume the risk of encountering whatever materials as may occur. The soil borings, if furnished, are indicative of the soils encountered at the particular location of the borings at the time the borings were taken. The Contractor shall make his own determination of the soil structure and site conditions as it may affect the work.

B. Existing Utilities

1. Locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
2. Should uncharted, or incorrectly charted, piping appear in the excavation, consult the Engineer and the Owner of such piping or utility immediately for directions.
3. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
4. Demolish and completely remove from site existing underground utilities indicated on the Drawings to be removed.

C. Protection of Persons and Property

1. Barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights as recommended by authorities having jurisdiction.
2. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

1.07 SUBMITTALS

- A. Submit to the Engineer for review in accordance with Section 01300 the proposed methods of construction, including dewatering, excavation, filling, compaction, and backfilling for the various portions of the work. Review shall be for method only. The Contractor shall remain responsible for the adequacy and safety of the methods.
- B. Submit to the Engineer for review in accordance with Section 01300 representative samples of each type of proposed fill material weighing approximately 50 lbs at least 15 days prior to the date of anticipated use of such material.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Backfill materials shall be natural or processed mineral soils, blasted and crushed rock, or masonry rubble. Fill materials shall be free of all organic material, trash,

snow, ice, frozen soil or other objectionable materials. Clay soils having a natural in-place water content in excess of 30 percent are considered unsuitable for stockpiling and/or future use. Fill materials to be used have been classified under categories specified below.

B. Embedment materials listed here include a number of processed materials plus the soil types defined by the USCS Soil Classification Systems in ASTM D2487. These materials are grouped into categories according to their suitability for this application:

1. Class I: Angular 6 to 40 mm (1/4 to 1-1/2 inches), graded stone including a number of fill materials that have regional significance such as coral, slag, cinders, crushed stone, and crushed shells. Latest revision of ASTM C33 – Gradation #57 (ASTM #57) is acceptable.
2. Class II: Coarse sands and gravels with maximum particle size of 40 mm (1-1/2 inches), including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil types GW, GP, SW and SP are included in this class.
3. Class III: Fine sand and clayey gravels, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Soil types GM, GC, SM and SC are included in this class.
4. Class IV: Silt, silty clays and clays including inorganic clays and silts of medium to high plasticity and liquid limits. Soil types MH, CH and CL are included in this class. These materials are not to be used for bedding, haunching or initial backfill.
5. Class V: This class includes the organic soils OL, OH and PT as well as soils containing frozen earth, debris, rocks larger than 40 mm (1-1/2 inches) in diameter, and other foreign materials. These materials shall not be used for bedding, haunching or initial backfill.

C. Granular Fill, shall be sound, hard, durable crushed stone meeting the following gradation requirements and shall conform to ASTM C33, Size No. 57.

<u>Sieve Size</u>	<u>Percent Passing by Weight</u>
1-1/2-in	100
1-in	90-100
1/2-in	26-60
No. 4	0-7
No. 8	0-3

- D. Riprap shall be sound, durable rock which is roughly rectangular shape and of suitable quality to insure permanence in the condition in which it is to be used. Rounded stones, boulders, sandstone or similar soft stone will not be acceptable. Material shall be free from overburden, spoil, shale, and organic material. Each load of riprap shall be reasonably well graded from the smallest to the maximum size specified and shall conform to State of Georgia Department of Transportation Standard Specifications Section 805. Riprap shall consist of a durable field or quarry stone shaped roughly as rectangular blocks. Riprap shall weigh between 50-100 lbs. each with at least 60 percent weighing over 100 lbs. and no more than 10 percent shall weigh 50 lbs. or less. One dimension of each exposed riprap shall be not less than 12-in. The joints in the riprap shall be filled with spalls of suitable size to construct a solid, stable slope, free from large voids and defects.
- E. Sand shall conform to ASTM Standard C33 for concrete sand.

PART 3 – EXECUTION

3.01 EXCAVATION

- A. It is the responsibility of those performing excavation and trenching to conform to all State and Federal Laws and Regulations, and local ordinances in relation to safety, life, health and property including but not limited to OSHA regulations, 29 CFR PART 1926, Subpart P, Paragraph 1926.650 through 1926.652 during all excavations and trenching. All excavations shall be adequately guarded with barricades and light in compliance with all OSHA and Georgia Department of Transportation requirements so as to protect the public from hazard. Excavations adjacent to existing or proposed buildings and structures or in paved streets or alleys shall be sheeted, shored and braced adequately to prevent undermining or subsequent settlement of such structures or pavements. Underpinning of adjacent structures shall be done when necessary to maintain structures in safe condition.
- B. The Contractor shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground structures in the trench zone may be determined before being damaged. He shall be held responsible for the repair or replacement of such structures when broken or otherwise damaged because of his operations.
- C. The Contractor shall make explorations and excavations at no additional charge to the Owner to determine the location of existing underground structures.
- D. Utilities and other piping shall be laid in open trenches as shown and specified. Trenches shall be excavated to the designated lines and grades, beginning at the outlet end and progressing toward the upper end in each case. Trenches for pipe shall be shaped to the lower 1/3 of the pipe and provide uniform and continuous

bearing. Bell holes shall be dug to allow ample room for working fully around each joint.

- E. Trenches shall be of minimum width to provide ample working space for making joints and shall be not less than the outside diameter plus 8-inches or more than the outside pipe diameter plus 24-inches. Sides of trenches shall be closely vertical to top of pipe and shall be sheet piled and braced where soil is unstable nature. Above the top of the pipe, trenches may be sloped. The ridge of the trench above this level may be wider for sheeting and bracing and the performance of the work.
- F. Trenches shall be excavated on the alignments shown on the Plans, and to the depth and grade necessary to accommodate the pipes at the elevations shown. Where elevations of the invert or centerline of a pipe are shown at the ends of a pipe, the pipe shall be installed at a continuous grade between the two elevations.
- G. Excavation in excess of the depth required for proper shaping shall be corrected by bringing to grade the invert of the ditch with compacted coarse, granular material at no additional expense to the Owner. Bell holes shall be excavated to relieve bell of all load, but small enough to insure that support is provided throughout the length of the pipe barrel.
- H. Excavation in excess of the depths required for manholes and other structures shall be corrected by placing a subfoundation of 1500 psi concrete, at no additional expense of the Owner.
- I. If trenches are excavated to widths in excess of those specified, or if the trench walls collapse, the pipe shall be laid in accordance with the next better class of bedding at the expense of the Contractor.

3.02 TRENCHES

- A. Trenches shall be maintained in a safe condition to prevent hazardous conditions for persons working in or around the trench. It is the responsibility of those performing excavation and trenching to conform to all State and Federal Laws and Regulations, and local ordinances relating to safety, life, health and property including but not limited to OSHA regulations, 29 CFR PART 1926, Subpart P, Paragraph 1926.650 through 1926.652 during all excavations and trenching. All excavations shall be adequately guarded with barricades and light in compliance with all OSHA and Georgia Department of Transportation requirements so as to protect the public from hazard. Excavations adjacent to existing or proposed buildings and structures or in paved streets or alleys shall be sheeted, shored and braced adequately to prevent undermining of subsequent settlement of such structures or pavements. Underpinning of adjacent structures shall be done when

necessary to maintain structures in safe condition.

- B. The top portion of the trench may be excavated with sloping or vertical sides to any width which will not cause damage to adjoining structures, roadways, utilities, etc. The bottom of the trenches shall be graded to provide uniform bearing and support each section of the pipe on undisturbed soil every point along its entire length, except for the portions of the pipe sections excavated for bell holes and for the sealing of pipe joints. Bell holes and depressions for joints shall be dug after the trench bottom has been graded and in order that the pipe rests upon the trench bottom for its full length and shall be only of such length, depth and width for making the particular type of joints. The bottom of the trench shall be rounded so that at least the bottom one-third of the pipe shall rest on undisturbed earth for the full length of the barrel as jointing operations will permit. This part of the excavation shall be done manually only a few feet in advance of the pipe laying by workmen skilled in this type of work.
- C. The sides of all trenches and excavation for structures shall be held by stay bracing, or by skeleton or solid sheeting and bracing according to conditions encountered, to protect the excavation, adjoining property and for the safety of personnel. Bracing and shoring may be removed when the level of the backfilling has reached the elevation to protect the pipe work and adjacent property. When sheeting or shoring above this level cannot be safely removed, it may be left in place. Timber left in place shall be cut off at least 2 feet below the surface. No sheeting below the level of the top of the pipe may be removed.
- D. Trenches shall be kept free of water. No structure shall be built or pipe shall be laid in water, and water shall not be allowed to flow over or rise upon any concrete, masonry, or pipe until the same has been inspected and the concrete or joint materials has thoroughly set. All water pumped, bailed, or otherwise removed from the trench or other excavation shall be conveyed in a proper manner to a suitable place of discharge where it will not cause injury to the public health or to public or private property or to work completed or in progress, or to the surface of the streets or cause any interference with the use of same by the public.

3.03 PILING EXCAVATED MATERIALS

- A. All excavated material shall be piled in a manner that will not endanger the work and that will avoid obstructing roadways.

3.04 LIMIT TO LENGTH OF OPEN TRENCH

- A. Pipe trenches shall not be excavated more than 400 feet in advance of pipe laying and all work shall be performed to cause the least possible inconvenience to the public. Adequate temporary bridges or crossings shall be constructed and

maintained where required to permit uninterrupted vehicular and pedestrian traffic.

3.05 BEDDING OF PRESSURE PIPE

- A. A pipe for water lines and forcemains shall be laid on foundations prepared in accordance with ANSI/AWWA C600 for ductile iron pipe and AWSI/AWWA C605 for PVC Pipe as modified herein, and in accordance with the various classes of bedding required by the trench width and trench depth for the size of pipe to be laid. The minimum bedding allowed will be Type 2. Bedding shall be included in the appropriate unit price bid for the work in which it pertains. Blocking shall not be used to bring the pipe to grade.
- B. Bell Holes: Bell holes shall be provided in all classes of bedding to relieve pipe bells of all load, but small enough to insure that support is provided throughout the length of the pipe barrel.
- C. Class I materials as defined in Paragraph 2.01 shall be used for bedding and haunching for water mains when rock is encountered, over excavation occurs or subgrade stabilization is required. A minimum of 6" of granular crushed stone shall be used as bedding.
- D. Overwidth Excavation: If trenches are excavated to widths in excess of those specified or if trench walls collapse, pipe shall be laid in accordance with the requirements for at least the next better class of bedding at the expense of the Contractor.
- E. Borrow Backfill: Borrow backfill will be required if there is not sufficient suitable material available from other parts of the work to backfill the trenches. Borrow backfill from approved borrow pits shall be used. Only those soils in the borrow pits that meet the specified requirements for suitable material shall be used.
- F. Compaction of foundation, bedding, haunching and initial backfill shall extend to the trench wall.
- G. Embedment material in the area around the pipe shall be installed with care. Care shall be used to insure that sufficient material has been worked under the haunch of the pipe to provide adequate side support. Precautions must be taken to prevent movement of the pipe during placing of the material through the pipe haunch.
- H. Avoid contact between the pipe and compaction equipment. Compaction of haunching, initial backfill and backfill material shall be done in such a way so that compaction equipment will not have a damaging effect on the pipe.

- I. The trench depth shall be as shown on the plans or as required to provide the minimum depth of cover as required by the pipe manufacturer.

3.06 BACKFILLING

- A. Backfilling consists of placing suitable materials removed during the excavation into the excavated areas, placing embedment materials and compacting the same to a density equal to or greater than what exists before excavation or as specified herein.
- B. All backfill material shall be free of stones, concrete and clay lumps larger than 1/3 cubic foot. Roots, stumps and rubbish which will decompose will not be permitted in the backfill. Backfill material shall have its moisture content corrected, as may be necessary before being placed in the trench to bring the moisture content to approximately "optimum" for good compaction. Any rock, stone, concrete, clay lumps larger than 1/3 cubic foot in volume, rubbish and debris shall be removed from the site and disposed of by the Contractor in a lawful manner.
- C. Select Backfill: Select backfill material shall be placed below, around each side, and over the top of the pipe in approximately horizontal layers not exceeding 8-inches in thickness to a minimum height of 12-inches above the pipe crown or greater as detailed herein and on the Drawings. This initial backfill shall be placed immediately after the pipes are laid and joints have been observed by the Engineer to anchor and protect the pipe from damage by subsequent backfill and ensure the uniform distribution of the loads over the top of the pipe. Select Material shall include Class I, II, III and other approved materials. If suitable select materials are not available from trench excavation, the Contractor will be required to obtain select materials elsewhere at no additional cost to the Owner. The Contractor shall backfill both sides of the pipe simultaneously to prevent side pressures and each layer shall be compacted thoroughly with mechanical tamping equipment in such manner as not to damage the pipe, pipe joints or shift the pipe alignment. Workmen shall not be permitted to walk over the pipe until at least 12 inches of compacted fill has been placed over the pipe. The Contractor shall not use water to obtain compaction except for adding water to the backfill material before placing in the trench to bring the moisture content to approximately "optimum" for good compaction.
- D. General Backfilling: After initial, select backfill material has been placed and tamped, the remainder of the trench may be backfilled with general excavated material, except that no rock, unless in small shattered fragments, will be permitted to be mixed with other backfill material.
 1. Backfilling under buildings and structures: Backfilling a pipe trench

under structures and buildings consists of placing structural fill in the trench in 4 inch maximum loose lifts (if hand tamped) and 6" maximum loose lifts (if machine tamped) and compacting an area from the undercut level to the slab support level to 100% of the standard Proctor maximum dry density (ASTM D 698). No water shall be used to secure compaction except for adding water to the backfill material before placing in the trench to bring moisture content approximately "optimum" for good compaction. Each loose lift shall be tamped before additional backfill material is placed in the excavated area.

2. Street and Road Right – of – Way, Parking Areas, Yards and Other Traveled Areas: Backfill shall consist of placing structural fill in the trench in uniform layers not exceeding eight inches (8") in thickness, with each layer thoroughly compacted to 95% of the standard Proctor maximum dry density (ASTM D 698) with heavy duty mechanical tampers ("Whacker" or equal) to a height of at least thirty-six inches (36") or forty-eight inches (48") above the top of the pipe barrel.
3. The remainder of the ditch may be backfilled and tamped in the same manner, or if the Contractor so elects, he may place backfill in layers not exceeding twelve inches (12") and use wheel loading or heavy duty mechanical tamping equipment ("Hydra-Hammer" or equal). Pipe shall have at least thirty-six inches (36") of cover before wheel loading and at least forty-eight inches (48") of cover before using heavy duty tamping equipment ("Hydra-Hammer" or equal). The density of the backfilled material after compaction shall be equal to 95 percent of the maximum density obtainable at optimum moisture content as determined by the Standard Proctor Test (ASTM D698). Except in the upper 12 inches, water shall be added to backfill material only before being placed in the trench in order to bring the moisture content to approximately "optimum" for good compaction.
4. In other areas, including woodlands, fields, pastures, areas not open to vehicular travel, and areas where no structures are proposed or anticipated in the future, the remainder of the ditch may be backfilled by placing fill in ditch and "walking-in" with wheel loaded equipment. Backfill material may be windrowed and maintained in a suitable manner so as to concentrate and pond rainfall runoff over the trench. After sufficient settlement has been obtained, the Contractor shall complete surface dressing, remove surplus material and clean up in accordance with these Specifications. Wherever trenches have not been properly filled, or if settlement occurs, they shall be refilled, smoothed off and finally made to conform to the surface of the ground. Backfilling shall be carefully performed and the original surface restored as specified herein. Compaction in these areas shall not be less than 90% of the standard

Proctor maximum dry density. Surplus material shall be disposed of by the Contractor.

3.07 PROTECTION OF WATER SUPPLY PIPES

- A. Horizontal Separation: Sewers and force mains shall be laid at least 10 feet horizontally from any existing or proposed watermain. The distance shall be measured edge to edge. In cases where it is not practical to maintain a 10 foot separation, such deviation may allow installation of the sewer or force main closer to the watermain, provided that the watermain is in a separate trench or on a undisturbed earth shelf located on the side of the sewer or force main and at an elevation so the bottom of the watermain is at least 18 inches above the top of the sewer or force main.
- B. Crossings: Sewers and force mains crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the watermain and the outside of the sewer or force main. This shall be the case where the watermain is either above or below the sewer or force main. The crossing shall be arranged so that the sewer or force main joints will be equidistant and as far as possible from the watermain joints. Where a watermain crosses under a sewer or force main, adequate structural support shall be provided for the sewer or force main to prevent damage to the watermain.
- C. Special Conditions: When it is impossible to obtain proper horizontal and vertical separation as stipulated above, the sewer or force main shall be designed and constructed equal to water pipe, and shall be pressure tested to assure water tightness prior to backfilling.

3.08 UTILITY CONSTRUCTION IN OTHER EXCAVATION

- A. Where utilities are required to be constructed in areas also requiring excavation and backfill for other work, coordinate the work so that the parts come together properly and the construction of the various parts can be done without damage to other parts. Place bedding which will form bearing for pipes, using suitable material and shaping to the lower 1/3 of the pipe to provide uniform and continuous bearing. Compaction of backfill material which will form bearing shall be equal to that specified hereinbefore under "Backfilling".

3.09 TESTING

- A. General: The Contractor shall select and Owner shall approve a qualified independent testing laboratory for the purpose of identifying soils, checking

densities, and classifying soils materials during construction. All testing will be paid for by the Contractor. Copies of all test results shall be furnished to the Engineer in duplicate.

B. Moisture-Density Tests: Testing shall be in accordance with ASTM Methods D698 and D1557. A test shall be performed on each type of material used in the work regardless of source. Tests will be accompanied by particle-size analyses of the soils tested (ASTM Methods D421 and D422). Changes in color, gradation, plasticity or source of fill material will require the performance of additional tests. Copies of all test results shall be furnished to the Engineer.

C. Field Density Tests: Tests shall be made in accordance with ASTM Method D1556. Tests shall be made in accordance with the following schedule or as required by the soils technician or as may be directed by the Engineer:

1. One test per 1000 linear feet of trench for each 4' of depth.

D. Submittals

1. The soils technicians will submit formal reports of all compaction tests and retests. The reports are to be furnished to the Owner and the Engineer as soon as possible upon completion of the required tests.
2. This report information is to include but not be limited to the following:
 - a. Date of the test and date submitted.
 - b. Location of test.
 - c. Wet weight, moisture content and dry weight of field sample.
 - d. Description of soil.
 - e. Maximum dry density and moisture content of the lab sample which best matches the field sample in color, texture, grain size and maximum dry density.
 - f. Ratio of field dry density to maximum lab dry density expressed as a percentage.
 - g. Comments concerning the field density passing or failing the specified compaction.
 - h. Comments about recompaction if required.

E. Compaction Results

1. If any compaction tests reveal that fill or backfill is not compacted as specified, the Contractor shall scarify and recompact as required to achieve the specified density. Additional compaction tests shall be made to verify proper compaction. These additional tests, required due to failure of the original test shall be paid for by the Contractor without no

additional cost to the Owner..

2. The soils technician is to advise the Engineer and the Contractor's Superintendent immediately of any compaction tests failing to meet the specified minimum requirements. No additional lift is to be placed on a lift with any portion failing.

3.10 CONSTRUCTION ALONG HIGHWAYS, STREETS AND ROADWAYS

- A. Excavation, Trenching and Backfilling Operations: Excavation, trenching and backfilling along highways, streets and roadways shall be in accordance with the applicable regulations of the State Department of Transportation with reference to construction operations, safety, traffic control, road maintenance and repair.
- B. Protection of Traffic: Provide suitable signs, barricades and lights for protection of traffic, in locations where traffic may be endangered by construction operations. All signs removed by reason of construction shall be replaced as soon as condition which necessitated such removal has been cleared. No highway, street or roadway shall be closed without first obtaining permission from the proper authorities.
- C. Construction Operations: The Contractor shall construct all work along highways, streets and roadways using the following sequence of construction operations, so as to least interfere with traffic:
 1. Stripping: Where the pipe line is laid along road shoulders, sod, topsoil and other material suitable for shoulder restoration shall be stripped and stockpiled for replacement.
 2. Trenching, Laying and Backfilling: Excavate trenches, install pipe line and backfill. The trench shall not be opened any further ahead of pipe laying operations than is necessary for proper laying operations. Trenches shall be progressively backfilled and consolidated and excess material removed immediately.
 3. Shaping: Immediately after completing backfilling operation, reshape any damage to cut and fill slopes, side ditch lines, and shall replace top soil, sod and any other materials removed from shoulders.
- D. Excavated Material: Excavated material shall not be placed along highways, streets, and roadways in such manner as to obstruct traffic. Roadways and pavement will be maintained free of earth material and debris.
- E. Drainage Structures: All side ditches, culverts, cross drains and other drainage structures shall be kept clear of excavated material and be free to drain at all

times.

F. Maintaining Highways, Streets, Roadways and Driveways

1. The Contractor shall furnish a road grader which shall be available for use at all times for maintaining highways, streets and roadways. All such streets, highways and roadways shall be maintain in suitable condition until completion and final acceptance of the work.
2. Repair all driveways that are cut or damaged. Maintain them in suitable condition until completion and final acceptance of the work.

3.11 REMOVING AND RESETTING FENCES

- A. Where existing fences must be removed to permit construction, the Contractor shall remove such fences. As construction progresses, reset the fences in their original location and to their original condition. All costs of removing and re-setting fences and such temporary works as may be required shall be included in the prices for the utility line.

3.12 PROTECTING TREES, SHRUBBERY AND LAWNS

- A. Trees and shrubbery along trench lines shall not be disturbed unless absolutely necessary. Trees and shrubbery necessary to be removed shall be properly heeled-in and re-planted. Heeling-in and re-planting shall be done under the direction of an experienced nurseryman.
- B. Where utility trenches cross established lawns, sod shall be cut, removed, stacked and maintained in suitable condition until replaced. Topsoil underlying lawn areas shall likewise be removed and kept separate from general excavated materials. Removal and replacement of sod shall be done under the direction of an experienced nurseryman.

3.13 MEASUREMENT AND PAYMENT

- A. The work specified in this Section will not be measured for direct payment except those items specifically stated in this Section and for which bid prices are requested in the Bid Proposal.

END OF SECTION

SECTION 02370
SOIL EROSION AND SEDIMENT CONTROL

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Temporary erosion and sediment control measures shall be employed during the construction period and shall include all measures required to prevent soil erosion at the site until permanent erosion control measures are installed. Work shall be accomplished through the use of vegetative measures, such as mulching and grassing, and structural practices including, construction exits, sediment barriers, check dams, inlet sediment traps, etc.
- B. Erosion and sediment control measures described herein shall be continued until such time as permanent planting and restoration of natural areas has provided for final stabilization at project site.
- C. Failure to install and maintain temporary erosion and sediment control measures throughout the construction period may be cause to halt construction by governing authorities until such measures are correctly installed and operational. Activity covered in this contract is regulated by Georgia's Erosion and Sedimentation Act (O.C.G.A. 12-7-1, *et seq.*) and the NPDES General Permit for Storm Water Discharges Associated with Construction Activity For Infrastructure Construction Projects (**GAR 100002**).

1.02 RELATED SECTIONS

- A. Section 02373 – NPDES Storm Water Permitting
- B. Section 02920 – Permanent (Perennial) Grassing and Landscaping
- C. Construction Drawings.

1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM).
- B. Georgia's Erosion and Sedimentation Act (O.C.G.A. 12-7-1, *et seq.*)
- C. Georgia's NPDES General Permit for Storm Water Discharges Associated with Construction Activity.
- D. "Manual for Erosion and Sediment Control in Georgia" published by the State

Soil and Water Conservation Commission of Georgia. Contractor shall be responsible for the acquisition and utilization of the latest edition of the “Manual for Erosion and Sediment Control in Georgia”.

1.04 DEFINITIONS

- A. Final Stabilization: All soil disturbing activities at the site have been completed, and that for unpaved areas and areas not covered by permanent structures, at least 70% of the soil surface is uniformly covered in permanent vegetation or equivalent permanent stabilization measures (such as the use of rip rap, gabions, permanent mulches, or geotextiles) have been employed.
- B. Land-Disturbing Activity: Any activity which may result in soil erosion from water or wind and the movement of sediments into State waters or onto lands within the State, including, but not limited to clearing, grubbing, dredging, grading, excavating, transporting, and filling.
- C. Stabilization: 70% of the surface area of the site is covered in a uniform, vegetative cover (permanent or temporary) or anchored mulch of the appropriate thickness with 90% coverage.

1.05 REGULATORY REQUIREMENTS

- A. Contractor shall comply with applicable codes, rules, ordinances, regulations, and laws of local, municipal, state and/or federal authorities having jurisdiction over project.
- B. Engineer Shall Obtain a Land-Disturbing Activity (LDA) Permit in accordance with the requirements of Georgia’s Erosion and Sedimentation Act (O.C.G.A. 12-7-1, *et seq.*). Land-disturbing activities shall not commence until an LDA Permit has been issued for the Project.
- C. Contractor shall perform all inspection, monitoring/sampling, reporting, and record-keeping activities as required by the NPDES General Permit for Storm Water Discharges Associated with Construction Activity For Infrastructure Construction Projects (**GAR 1000002**). See Section 02373 – NPDES Storm Water Permitting.

PART 2 – PRODUCTS

2.01 STRUCTURAL PRACTICES

- A. All products used must satisfy specifications set forth by the Georgia Department

of Transportation and be included on the GDOT Qualified Products List.

2.02 MULCH

- A. Dry straw, hay, or wood cellulose fiber of good quality, free of weeds and foreign matter detrimental to plant life.

2.03 TEMPORARY GRASSING

- A. All grass seed shall be certified by the Georgia Department of Agriculture.
- B. All grass seed shall be in undamaged containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.

2.04 PERMANENT (PERENNIAL) GRASSING

- A. See Section 02920 – Permanent (Perennial) Grassing and Landscaping.

2.05 FERTILIZER AND LIME

- A. Fertilizer: Standard commercial grade grass fertilizer with a 10-10-10 (N-P-K) proportion.
- B. Lime: Natural, agricultural grade, ground or pulverized dolomitic limestone.

2.06 DUST CONTROL

- A. Water, calcium chloride, anionic asphalt emulsion, latex emulsion, resin-in-water emulsion or other approved by the Georgia Department of Transportation may be used.

PART 3 – EXECUTION

3.01 GENERAL

- A. The Contractor shall prevent the escape of sediment from the area under construction by installing erosion and sediment control measures and practices prior to, or concurrent with, land-disturbing activities.
- B. The Contractor shall maintain erosion and sediment control measures at all times.
- C. The Contractor shall complete mulching, temporary grassing, or permanent (perennial) vegetation on all exposed areas within 14 days after disturbance.

- D. All structural and vegetative erosion and sediment control measures shall be designed, installed and maintained according to the “Manual for Erosion and Sediment Control in Georgia”.
- E. As a minimum, structural practices shall be located and installed, and all disturbed soil areas shall be stabilized using mulching and/or grassing, as specified by the Drawings. If full implementation of the Drawings does not provide for effective erosion and sediment control, the Contractor shall be responsible for the implementation of additional erosion and sediment control measures to control or treat the sediment source.
- F. No runoff from disturbed areas shall leave the site untreated.
- G. Erosion Control Schedule
 - 1. Prior to the pre-construction conference, Contractor shall submit to the Engineer his proposed erosion control plan for the project in accordance with requirements of this section. The schedule shall be based on an analysis of the project conditions and shall be in written form. This schedule shall specifically indicate the sequence of clearing and grubbing, earthwork operations, including trenching and backfilling, construction of permanent erosion control features and the proposed uses of temporary erosion and sediment control features. Schedule shall also include proposed methods to prevent pollution of streams, lakes and rivers and other water resources.
 - 2. Contractor shall outline his proposed methods of controlling erosion and preventing pollution on public and construction access roads, staging areas and waste disposal areas.
 - 3. Construction shall not commence until the Engineer has accepted the aforementioned plans and schedules. Contractor will be responsible for accomplishment of work in accordance with accepted plans and schedules. Engineer may approve changes made necessary by unforeseen circumstances that are beyond the control of Contractor.
- H. Engineer has the authority to limit the surface area of erodible earth materials exposed by clearing and grubbing, the surface area of erodible earth exposed by excavation and backfill operations, and to direct Contractor to provide immediate permanent or temporary erosion and pollution control measures to prevent contamination of adjacent land or water courses.
- I. Clearing and grubbing operations shall be so scheduled and performed that

grading operations and permanent erosion control features can immediately follow thereafter, if the project conditions permit. Otherwise, temporary erosion control measures will be required between successive construction stages.

- J. Engineer will require Contractor to limit the area of excavation, trenching and pipe laying operations in progress commensurate with Contractor's capability and progress in keeping finish grading, mulching, seeding and other permanent and/or temporary measures current with accepted schedule.

3.02 STRUCTURAL PRACTICES

- A. All structural practices shall be designed, installed and maintained in accordance with specifications set forth in Chapter 6, Section III of the "Manual for Erosion and Sediment Control in Georgia".
- B. Sediment accumulation at structural practices shall not exceed 50% of structure capacity or height.
- C. All structural practices shall be inspected frequently and materials promptly repaired or replaced as necessary to allow proper function of the device.
- D. Any construction vehicle passing from a disturbed area onto any paved area or public right-of-way shall pass over a gravel construction exit. If the gravel construction exit cannot adequately remove soil from the vehicle, the vehicle shall be washed and runoff routed to a sediment trap or basin. Any mud or debris tracked or spilled onto roadway shall be immediately removed.

3.03 MULCHING

- A. All mulch used as a singular method for erosion control shall be applied and anchored in accordance with specifications set forth in Chapter 6, Section II of the "Manual for Erosion and Sediment Control in Georgia".
- B. Mulch can be used for erosion control for up to six months provided that the mulch is applied at the appropriate depth (depending on the type of mulch used), anchored, and maintains a continuous 90% or greater cover of the soil surface.
- C. Where staged construction or other conditions not controlled by Contractor prohibit the completion of work in a continuous manner, Engineer may order Contractor to apply mulch to an erodible area.
- D. If the area being mulched will eventually support a cover of perennial vegetation, 20-30 pounds of nitrogen per acre shall be added in addition to the normal nitrogen application rate specified in Section 02920 – Permanent (Perennial)

Grassing and Landscaping.

- E. Mulch can be applied to areas at rough grade. With the use of an appropriate anchoring method, mulch may be applied to areas as steep as 2:1 (H:V).
- F. All mulch shall be anchored. Install commercial netting according to manufacturer's specifications.
- G. Wood waste shall be anchored with netting consisting of openings no larger than the average size of the wood waste chips.

3.04 TEMPORARY GRASSING

- A. Temporary grassing shall be applied in accordance with specifications set forth in Chapter 6, Section II of the "Manual for Erosion and Sediment Control in Georgia".
- B. Temporary grassing can be employed instead of mulch if an area will remain undisturbed for less than six months.
- C. Where staged construction or other conditions not controlled by Contractor prohibit the completion of work in a continuous manner; Engineer may order Contractor to apply temporary grassing to an erodible area.
- D. Temporary grassing shall consist of sowing a quick growing species of grass suitable to the area and season. Certified temporary grass seed shall be applied at the rates and dates as indicated in the Plans

3.05 PERMANENT (PERENNIAL) GRASSING

- A. See Section 02920 – Permanent (Perennial) Grassing and Landscaping.

3.06 GRADING OPERATIONS

- A. Grading operations shall be scheduled so that ground surface will be disturbed for the shortest possible time before permanent construction is installed. Large areas shall be maintained as flat as possible to minimize soil transport through surface flow.
- B. Wherever steeper slopes or abrupt changes in grade are required, a compacted diversion or berm shall be constructed at the top of slope to cause surface water to flow along the diversion to a control point to be transported down slope in a slope drain. In no case shall surface water be allowed to flow uncontrolled down slopes.

- C. Unless otherwise approved in writing by Engineer, construction operations in rivers, streams and impoundments shall be restricted to those areas that must be entered for the construction of temporary or permanent structures, or at locations shown on the Drawings.
- D. Mechanized equipment shall not be operated in live streams except as may be minimally required, unless otherwise approved in writing by Engineer.
- E. Frequent fording of live streams with construction equipment shall not be permitted. Temporary bridges or other structures, designed in accordance with specifications by the "Manual for Erosion and Sediment Control in Georgia", shall be used whenever an appreciable number of stream crossings are necessary.

3.08 DUST CONTROL

- A. Dust raised from vehicular traffic shall be controlled by wetting down the access road with water. The use of a deliquescent chemical, such as calcium chloride, may be used if the relative humidity is over 30%. Chemicals shall be applied in accordance with the manufacturer's recommendations.

3.09 CLEAN-UP AND REMOVAL

- A. Temporary erosion and sediment control measures shall be removed and bare areas stabilized when all areas draining to the control(s) are no longer under construction and have reached final stabilization.
- B. All sediment accumulated at erosion and sediment control structures shall be removed and properly disposed of before the structure is removed.
- C. Sediment deposits shall be uniformly spread at an appropriate location and stabilized with mulch and grassing.
- D. All false-work, sheeting or piling which are to be removed, debris, and other obstructions shall be promptly cleared from rivers, streams and impoundments as soon as conditions permit.

END OF SECTION

SECTION 02373
NPDES STORM WATER PERMITTING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

General Permit No. GAR100002 – Georgia Department of Natural Resources
Environmental Protection Division

Manual for Erosion and Sediment Control in Georgia – State Soil and Water
Conservation Commission

1.02 RELATED WORK

A. Section 02370 – Soil Erosion Control

1.03 SCOPE OF WORK

Comply with requirements of State of Georgia Department of Natural Resources
Environmental Protection Division General Permit No. GAR100002. Permit governs
storm water discharges associated with construction activity specifically construction
projects under the National Pollutant Discharge Elimination System.

1.04 SUBMITTALS

Contractor shall submit a copy of the Notice of Intent (N.O.I.) to the local EPD's District
Office and the local Soil and Water Conservation Service/EPD Water Protection Branch
(depends on local permitting authority) in accordance with the permit on behalf of Owner
a minimum of 14 days prior to the start of construction activities.

Contractor shall assume responsibilities and requirements of Primary Permittee once
awarded the contract.

1.05 QUALITY ASSURANCE

A. Regulatory Requirements:

1. Contractor shall obtain required permits and licenses in accordance with
requirements of Federal Clean Water Act (CWA) and Water Quality Act
(WQA). Contractor shall file Notice of Intent (NOI) with Georgia
Environmental Protection Division. General Contractor shall be
Operator/Primary Permittee on Notice of Intent. Contact GA. EPD at 404-
362-2671 for additional information and permit forms.

2. Contractor shall provide temporary and permanent erosion control systems as indicated on Drawings and as necessary to protect adjacent properties and water resources from erosion and sedimentation.
3. CWA (1972) and WQA (1987) Requirements:
 - a. Where Work on this project will disturb 1 or more acres, do not start Work without obtaining a “National Pollution Discharge Elimination System” (NPDES) permit governing discharge of storm water from project site for duration of Contract. Obtain approved Erosion, Sedimentation, and Pollution Control (ES&PC) Plan from Owner/Engineer prior to construction.
 - b. Provide storm water management in accordance with NPDES permit and for any enforcement action taken or imposed by Federal or State agencies, including cost of fines, construction delays and remedial actions resulting from failure to comply with all provisions of NPDES permit and SWP3.
 - c. Keep NOI and ES&PC Plan on site and make available for inspection by appropriate authority having jurisdiction at any time.

PART 2 – RESPONSIBILITIES OF THE PRIMARY PERMITTEE (GENERAL CONTRACTOR):

2.01 GENERAL

The following information generally summarizes certain requirements of the General Permit No. GAR100002. This information is not intended to represent the complete requirements to comply with the Permit for this project. The General Contractor shall assume the responsibilities and requirements of the Primary Permittee and Operator for the project.

2.02 NOTICE OF INTENT (NOI)

Contractor shall submit the Notice of Intent (NOI) and any necessary supporting documentation to Georgia Environmental Protection Division (EPD) 14 days prior to the start of construction activities. General Contractor shall be the Operator/Primary Permittee on Notice of Intent.

2.03 EROSION, SEDIMENTATION, AND POLLUTION CONTROL (ES & PC) PLAN

The ES & PC Plan shall be amended if a significant change in the design, construction, operation, or maintenance of the Best Management Practices (BMPs) is needed. The Primary Permittee shall be responsible for amending the plan and shall have it certified

by a licensed professional. The certification and any necessary supporting documentation shall be sent to EPD.

2.04 SAMPLING

- A. The Primary Permittee shall sample in accordance with the following rainfall events:
 - 1. The first rainfall event greater than or equal to 0.5-in. and allows for monitoring during normal business hours that occurs after all clearing and grubbing operations are complete in the drainage area of the location selected as the representative sampling location.
 - 2. First rain event greater than or equal to 0.5 in. that follows either 90 days after initial sampling event or after mass grading is complete in said area.
- B. If BMPs have not been properly designed, installed, or maintained, corrective action shall be defined and implemented within 2 days and samples shall be taken for each subsequent rain event greater than or equal to 0.5 in. during normal business hours until selected turbidity is attained or until post-storm event inspections determine that BMP's are properly designed, installed, and maintained.
- C. One representative outfall sampling location shall be selected by the Engineer prior to beginning construction. The Contractor is responsible for contacting Engineer to determine the location for the representative outfall sample.

2.05 ANALYSIS

- A. Samples collected manually shall be collected within 45 minutes following the rain event.
- B. Samples should be analyzed immediately as required by the permit, but shall be analyzed no later than 48 hours after collection.
- C. All samples that have been analyzed shall be documented.

2.06 SITE INSPECTIONS BY LICENSED PROFESSIONAL (ENGINEER OF RECORD)

- A. Within one week after initial construction begins, the licensed professional (Engineer of Record) who prepared the ES&PC Plan shall inspect the execution of the ES & CP Plan and determine if BMP's have been installed and maintained as designed. The Primary Permittee shall notify the licensed professional that the Plan has been implemented and his/her inspection is required.

- B. The Primary Permittee shall correct any deficiencies identified by the licensed professional within two business days of inspection.

2.07 SITE INSPECTIONS BY PRIMARY PERMITTEE

- A. Qualified personnel, individuals who have successfully completed an approved E&SC short course approved by EPD, shall perform all site inspections.
- B. Site inspections shall be conducted in accordance with the following schedule:
 - 1. Each day when any type of construction activity has taken place, qualified personnel shall inspect (a) all areas where petroleum products are stored, used or handled and (b) all locations where vehicles enter or exit the site; and (c) measure rainfall once each twenty-four hour period at the site.
 - 2. A site inspection shall be conducted at least every fourteen (14) calendar days and within 24 hours of the end of any rainfall event that is greater than or equal to 0.5-in.
 - 3. Qualified personnel shall inspect at least once per month (until NOT is received by EPD) the areas of the site that have undergone final stabilization.
 - 4. A report summarizing each inspection should be kept on site for documentation.
- C. Any deficiencies identified during the inspection of BMPs shall be corrected within seven (7) days of the inspection.
- D. Amendments to the ES & PC Plan resulting from inadequate BMP design shall be developed and resubmitted (ES & PC Plan to EPD) by a certified professional hired by the Contractor.
- E. Any additional erosion and sedimentation control measures necessary during construction to prevent silt and sediment from leaving the site shall be the responsibility of the Contractor.

2.08 PERMIT VIOLATIONS AND PENALTIES

- A. Permit violations are grounds for an enforcement action, permit termination (stop work order), or denial of a permit renewal application.
- B. Failure to properly design, install or maintain BMPs shall constitute a violation of the Permit for each day on which such a failure occurs.

- C. If BMPs are not properly designed, installed and maintained, the following will result in a second violation of the Permit:
 - 1. If monitoring receiving waters: an increase in the turbidity of downstream waters by 10 Nephelometric Turbidity Units (NTUs) for waters classified as trout streams or 25 NTUs for waters supporting warm water fisheries; or
 - 2. If monitoring outfalls: turbidity measurements that exceed the value set forth by the NTU Tables presented in Appendix B of Permit No. GAR100001.
- D. A fine or imprisonment or both shall, upon conviction, punish any person who falsifies, tampers with or knowingly renders inaccurate monitoring information, any record, or document.
- E. The Primary Permittee is not excused from compliance with the Permit even if a local government authority has approved the ES&PC Plan or failed to take enforcement action.

2.09 RECORD KEEPING AND REPORTING REQUIREMENTS

- A. The Primary Permittee shall submit to EPD by the 15th of each month, a summary of storm water discharge monitoring (turbidity) results. A summary of all known violations of the Permit at the site shall be included.
- B. The following records are required by the Permit and shall be retained by the Primary Permittee at the construction site or a readily available designated alternate location:
 - 1. Copy of NOI and delivery receipt
 - 2. Copy of ES&PC (Erosion, Sedimentation, and Pollution Control (ES &PC) Plan
 - 3. Inspection report from the licensed professional that prepared the ES&PC Plan stating that BMPs have been installed as designed
 - 4. Daily rainfall log
 - 5. Daily inspection logs of entrances and exits (when construction activity has taken place)

6. Bi-weekly inspection logs of all disturbed areas indicating whether or not BMPs identified in the ES&PC Plan are operating correctly. The Primary Permittee shall document any and all known violations.
 7. Sampling records including date, place, and time of sampling and analyses, quality assurance program and turbidity readings.
 8. Inspection results of all areas that have undergone final stabilization
- C. For at least three years, copies of all records must be maintained at the Primary Permittee's place of business.
 - D. Upon request, the Primary Permittee shall make the ES&PC Plan, CMP and/or records available to EPD or the local government within three days.

2.10 NOTICE OF TERMINATION (NOT)

- A. The Primary Permittee may submit a Notice of Termination (NOT) and any necessary supporting documentation to EPD when the site has undergone final stabilization and all storm water discharges associated with construction have ceased.
- B. A NOT shall be filed if the Owner or Operator of the site changes. The Primary Permittee shall notify subsequent owners of the requirements of the Permit.

END SECTION

SECTION 02505
VALVES, HYDRANTS AND APPURTENANCES

PART 1 – GENERAL

1.01 SCOPE

- A. Furnish and install valves, hydrants, and appurtenances complete as shown on the Drawings and specified herein.
- B. This section generally includes valves, hydrants, and appurtenances for water mains.

1.02 RELATED WORK

- A. Excavation, backfill, fill and grading including bedding material is included in Section 02315.
- B. Buried piping is included in Section 02510.

1.03 DESCRIPTION OF SYSTEMS

- A. All of the equipment and materials specified herein is intended to be standard for use in controlling the flow of drinking water.

1.04 QUALIFICATIONS

- A. All of the types of valves and appurtenances shall be products of well established, reputable firms who are fully experienced and qualified in the manufacture of the particular equipment to be furnished. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these specifications as applicable.

1.05 SUBMITTALS

- A. Submit to the Engineer for review in accordance with Section 01300 complete shop drawings working drawings and product data for all materials and equipment furnished under this Section.

1.06 TOOLS

- A. Furnish three (3) T-handle operating wrenches. The wrenches shall vary in length so they extend between 2 and 4 feet above grade while on the valve operating nut.

Additional wrenches shall be supplied if this requirement cannot be met with 3 wrenches.

PART 2 – PRODUCTS

2.01 GENERAL

- A. All valves and appurtenances shall be of the size shown on the Drawings and as far as possible, all equipment of the same type shall be from one manufacturer.
- B. All valves and appurtenances shall have the name of the maker and the working pressure for which they are designed cast in raised letters upon some appropriate part of the body.

2.02 GATE VALVES

- A. Shall be Ductile iron body, bronze mounted, resilient wedge design, with non-rising stems, conforming to AWWA C-509. They shall have mechanical joint ends and shall be left open. Valves shall be provided with a 2" square wrench nut complying with AWWA C-509. Valves shall have a maximum working pressure of 250 psi and be tested at 500 psi. Gate valves shall be Mueller No. A2360-20, M&H C509, or approved equal.
- B. Valves shall be furnished with "O" ring packing. Two (2) "O" rings shall be located above the thrust collar and one (1) "O" ring below. The thrust collar shall be permanently lubricated and have an anti-frication washer on top of the thrust collar.
- C. Valves installed in pits or above ground shall be furnished with hand wheels.
- D. Valve boxes and markers shall be provided for all buried valves. Boxes shall be mounted flush with ground surface.

2.03 TAPPING SLEEVES WITH GATE VALVES

- A. Tapping valves shall meet the requirements of AWWA C500. The valves shall be flanged by mechanical joint outlet with nonrising stem, designed for vertical burial and shall open left or counterclockwise. Stuffing boxes shall be the "O-Ring" type. Operating nut shall be AWWA Standard 2 inches square. The valve shall be provided with an overload seat to permit the use of full size cutters. Gaskets shall cover the entire area of flange surfaces.
- B. Tapping sleeves shall be the mechanical joint type sized to fit the cast iron, ductile iron or pvc pipe intercepted. They shall be designed for 200 psi minimum working pressure with cadmium plated cast iron nuts and bolts. They shall have

duck-tipped end gaskets and shall be Clow F5205, Mueller H-615/715, or approved equal with a tapping valve attached. The outlet end of the valve shall have a joint suitable for the type of pipe to be used in the new branch. The Sleeve/Cross shall be sized to fit the intercepted pipe without leaking. Sleeve flanges shall be fitted with gaskets covering the entire surface area of each flange.

2.04 VALVE BOXES

- A. All buried valves shall have cast iron two or three piece valve boxes with cast iron covers. Valve boxes shall be provided with suitable heavy bonnets and to extend to such elevation at or slightly above the finished grade surface as directed by the Engineer. The barrel shall be one or two-piece, screw type, having 5-1/4-inch shaft. The bottom of the lower section shall enclose the operating nut of the valve. Covers shall have "WATER" cast into the top for all water mains and "DRAIN" cast into the top of all drain line. All valves shall have actuating nuts extended to within six inches of the top of valve box cover.
- B. Valve boxes shall be provided with concrete base and valve nameplate with suitable anchors for casting in concrete. Nameplate shall be 3-inch diameter bronze disk with raised lettering 1/8-inch high as shown on the Drawings and manufactured by Mueller Company, M&H, or approved equal.

2.05 HYDRANTS

- A. General – Hydrants shall be manufacturer's current model design and construction. Hydrants shall comply with AWWA C-502, latest revision. The main valve opening shall be 5 1/4" diameter. Fire hydrant shall be dry barrel, dry top design. Nozzle section shall consist of two (2) hose nozzles and one (1) pumper nozzle. Hydrants shall be suitable for working pressure of 250 psi. Inlet connection shall be mechanical joint. Hydrants shall be Mueller Super Centurion 250 A-423, M & H Model 929 or approved equal.
- B. Bonnet – Bonnet may have oil filled or dry reservoir. If oil filled, bonnet must have "O" ring packing so that all operating parts are enclosed in a sealed oil bath. Oil filter plug shall be provided in bonnet to permit checking of oil level and adding oil when required. If dry type, hydrant top must have lubricating hole or nut for ease of lubrication. All parts must be removed through top of hydrant without moving entire barrel section from safety flange.
- C. Nozzles and Caps – The hydrant shall have two (2) 2-1/2 inch connections and one (1) 4-1/2" steamer connection, National standard threads. Nozzles shall be bronze and have interlocking lugs to prevent blowout. Nozzle caps shall be secured to fire hydrant with non-kinking type chain with chain loop on cap ends to permit free turning of caps.

- D. Seat Ring – Seat ring shall be bronze.
- E. Drain Valves and Openings – Positive operating drain valves shall be provided to assure drainage of fire hydrant when the main valve is closed. Drain openings shall have bronze bushings.
- F. Main Valve – Valve shall be designed to close with the pressure and remain closed. Valve shall be made from material that will resist rocks or other foreign matter. Valve shall have a full 5-1/4-inch opening.
- G. Barrel and Safety Flanges – Hydrants shall have a safety-type vertical barrel with 3-1/2 foot bury and be designed with safety flanges and/or bolts to protect the barrel and stem from damage and to eliminate flooding when hydrant is struck. Bury depth shall be cast on barrel of hydrant. Hydrant shall be installed with hydrant tee and 14” ductile anchor coupling.
- H. Operating Stop and Nut – Hydrant shall have a positive stop feature to permit opening of hydrant without over travel of stem. Operating nut shall be bronze, 1-1/2”, point to flat, pentagon.
- I. Bolts and Nuts – Bolts, washers and nuts shall be corrosion resistant.
- J. Inlet – Bottom inlet of hydrant shall be provided with mechanical joint connection as specified and shall be 6-inch nominal diameter.
- K. Direction of Opening – Hydrant shall be designed to close “right” or clockwise and open “left” or counter-clockwise.
- L. Coatings – All inside and outside portions of hydrant shall be coated in accordance with AWWA C-502. The exterior portion of hydrant above ground level shall be painted with two (2) coats of best grade zinc chromate primer paint and with two (2) coats of approved hydrant enamel. Color shall be Red unless otherwise designated by Owner.
- M. Joint Assemblies – Complete joint assemblies consisting of gland, gasket, bolts, and nut shall be furnished for mechanical joint inlets.

2.06 BUTTERFLY VALVES

- A. Butterfly valves and operators shall conform to the AWWA Standard for Rubber Seated Butterfly Valves, Designation C504, except as hereinafter specified. Valves, except as specified hereinafter, shall be Class 150A or B and equal to those manufactured by Val-Matic, M&H, or approved equal. The valve discs shall be constructed of alloy cast iron ASTM A-436, Type I (NiResist) or if solid disc is used, of cast iron conforming to ASTM A-48, Class 40 or ductile iron

conforming ASTM A536, Grade 65-45-12. All ferrous surfaces to be fusion bonded epoxy, 12 mils. No spray on coatings will be allowed.

- B. Valves shall have integrally cast mechanical joint ends or flanged ends. The face to face dimensions of flanged end valves shall be in accordance with Table 3 of above mentioned AWWA Standard for short-body valve. Adequate two-way thrust bearings shall be provided. Flange drilling shall be in accordance with ANSI B16.1.
- C. Valve seats shall be a natural rubber or synthetic rubber compound. Valve seats 30 inches and larger shall be field adjustable and replaceable without dismounting operator disc or shaft and without removing the valve from the line. All retaining segments and adjusting devices shall be of corrosion resistant material with stainless Nylock screws and be capable of a 1/8-inch adjustment. Valves 24 inches and smaller shall have bonded or mechanically restrained the valve body or disc, the mating edge of the valve disc shall be 18-8 stainless steel or NiResist, ASTM A-436, Type I.
- D. The valve body shall be constructed of close grain cast iron per ASTM A126, Class B with integrally cast hubs for shaft bearing housings of the through boss-type. Permanently self-lubricating corrosion resistant sleeve type bearings shall be provided and shall be sized to withstand bearing loads. Bearing loads shall not exceed 1/5 of the compressive strength of the bearing or shaft material and shall not exceed 2,500 psi.
- E. The valve shaft shall be turned, ground and polished constructed of 18-8 stainless steel and designed for both torsional and shearing stresses when the valve is operated under its greatest dynamic or seating torque. Shaft shall be of either a one piece unit extending full size through the valve disc and valve bearing or it may be of a stub shaft design.
- F. Unless otherwise shown on the construction plans, all butterfly valves shall be Class 150B. Joints shall be the same as for the pipeline in which the valve is installed or as indicated on the Drawings.
- G. Each butterfly valve shall be furnished with a manual operator equipped with a two inch square operating nut. The operator shall open the valve when the operating nut is turned to the left or counterclockwise. The valve and operator shall be assembled for installation in a horizontal line with the main valve shaft horizontal and the operator shaft and operating nut aligned vertically to accept a valve key operated from the surface. Stainless steel (type 304) extension stems shall be furnished where shown.
- H. Butterfly valves shall be shop painted for buried service in accordance with AWWA C504.

- I. Prior to installation of butterfly valves, the manufacturer shall submit certified drawings showing the principal dimensions, general construction, and materials used for all parts of the valves and operators. The valves shall be furnished in accordance with these drawings after they have been approved by the Engineer. In addition to the certified drawings, the manufacturer must submit written certification that the valves furnished comply with all applicable provisions of AWWA C504.

2.07 COMBINATION AIR VALVES

- A. Combination air valves shall be automatic float operated valves designed to exhaust large quantities of air during the filling of a piping system and close upon liquid entry. The valve shall open during draining or if a negative pressure occurs. The valve shall also release accumulated air from a piping system while the system is in operation and under pressure. The valve shall perform the functions of both Air Release and Air/Vacuum Valves and shall be furnished as a single body type.

The valve body and cover shall be constructed of ASTM A126 Class B cast iron. The floats, guide shafts, and bushing shall be constructed of Type 316 stainless steel. Resilient seats shall be Buna-N.

The exterior of the valves shall be coated with a universal alkyd primer.

Valves shall be Series 201C.2 as manufactured by Valmatic, Series "C" as manufactured by Crispin or approved equal.

2.08 ELECTRIC ACTUATORS

- A. All electric actuators shall conform to the requirements of AWWA Standard C540-93.
- B. Actuators shall contain motor, gearing, manual over-ride, limit switches, torque switches, drive coupling, integral motor controls, position feedback transmitter, and mechanical dial position indicator (where required).
- C. The motor shall be specifically designed for actuator service. The motor will be of the induction type with class F insulation and protected by means of thermal switches imbedded in the motor windings. Motor enclosure will be totally enclosed, nonventilated. Motors will be capable of operating on 460 volt - 3 phase - 60 hertz power

- D. Actuator enclosure shall be NEMA 4 (watertight). All external fasteners on the electric actuator will be stainless steel. Fasteners on limit switch and terminal compartments shall be captured to prevent loss while covers are removed.
- E. All gearing shall be grease lubricated and designed to withstand the full stall torque of the motor. Manual over-ride shall be by handwheel. Manual operation will be via power gearing to minimize required rimpull and facilitate easy change-over from motor to manual operation when actuator is under load. Return from manual to electric mode of operation will be automatic upon motor operation. A seized or inoperable motor shall not prevent manual operation.
- F. Limit switches shall be furnished at each end of travel. Limit switch adjustment shall not be altered by manual operation. Limit switch drive shall be by countergear. Limit switches must be capable of quick adjustment requiring no more than five (5) turns of the limit switch adjustment spindle. One set of normally open and one set of normally closed contacts will be furnished at each end of travel where indicated. Contacts shall be of silver and capable of reliably switching low voltage DC source from the control system furnished by others.
- G. Mechanically operated torque switches shall be furnished at each end of travel. Torque switches will trip when the valve load exceeds the torque switch setting. The torque switch adjustment device must be calibrated directly in engineering units of torque.
- H. All wiring shall be terminated at a plug and socket connector. Actuator must be capable of the following valve closing times/operating speeds: 12 inches per minute operating speed.
- I. Actuators will be capable of operating in an ambient temperature range of -20 to +175 degrees F (without motor controls) and -20 to +160 degrees F (with motor controls).
- J. Actuators in modulating service will be selected such that the required dynamic valve torque is no more than 60% of the electric actuator's maximum rated breakaway torque. Power gearing in modulating actuators shall have zero backlash between the motor and actuator output.
- K. All actuators in modulating service will be furnished with a feedback potentiometer in addition to the following motor controls: reversing starters, control transformer, phase discriminator, monitor relay, positioner, "open-stop-close" pushbuttons, "local-off remote" selector switch in addition to red and green indicating lights. The positioner shall be capable of accepting a 4-20mADC command signal and positioning the valve by comparing the command signal with the present valve position as indicated by the feedback potentiometer

mounted inside the actuator. The positioner shall be field adjustable to fail to the "open", "closed" or "last" position on loss of 4-20Madc command signal.

- L. All actuators shall be manufactured by AUMA Actuators, Limitorque, or approved equal.

2.09 VALVE MARKERS

- A. Valve Markers shall be provided for all valves located on the distribution main. Valve Markers shall be equipped with two (2) terminals enabling the marker to be used as a tracer wire access post. Terminals shall be located beneath a removal cap on top of the valve marker. Valve Markers shall be Rhino TriView Flex Test Stations or equal. The Contractor will be required to connect tracer wire to valve markers, providing a fully operational pipe locating system.

PART 3 – EXECUTION

3.01 VALVES

- A. Valves and valve boxes shall be set with the operating stem vertically aligned in the center of the valve box. Valves shall be set on a firm foundation and supported by tamping Type 1 Common Fill under and at the sides of the valve.

3.02 VALVE BOXES

- A. Valve boxes shall be installed vertically, centered over the operating nut, and the elevation of the top shall be adjusted to conform with the finished surface of roadway, concrete pad where shown on the Drawings or other surface at the completion of the contract. Boxes shall be adequately supported during backfilling to maintain vertical alignment.

3.03 HYDRANTS

- A. Fire hydrants, yard hydrants, and post hydrants shall be set at the locations shown on the Drawings, and shall be bedded on a firm foundation. A drainage pit as detailed on the Drawings shall be filled with granular fill and be thoroughly compacted. During backfilling, additional screened gravel shall be brought up around and 6-inch over the drain ring. Each hydrant shall be set in true vertical alignment and shall be properly braced. Concrete thrust blocks shall be placed between the back of the hydrant inlet and undisturbed soil at the end of the trench. Minimum bearing area shall be as shown on the Drawings. Felt paper shall be placed around the hydrant elbow prior to placing concrete. Care must be taken to insure that concrete does not plug the drain ports. Concrete used for backing shall be no leaner than 1 part cement, 2-1/2 parts sand and 5-1/2 part stone.

- B. If directed, the hydrant shall be tied to the pipe with suitable rods or clamps, galvanized, painted, or otherwise rustproof treated. Hydrants shall be touched up with paint as required after installation.

3.04 PAINTING

- A. The exterior surfaces of all unburied valves and appurtenances shall be thoroughly cleaned of any scale, rust, dirt, grease, or other foreign matter and immediately thereafter shop painted with an approved rust-inhibitive primer.
- B. The exterior surfaces of all buried valves and appurtenances shall be shop coated with asphalt varnish, conforming to Federal Specification TT-V51e, especially formulated to protect the metal for buried service.
- C. Ferrous surfaces obviously not to be painted shall be given a shop coat of grease or other suitable rust-resistant coating. This coating shall be maintained as necessary to prevent corrosion during all periods of storage and installation and shall be satisfactory to the Engineer up to the time of final acceptance.

END OF SECTION

SECTION 02510 WATER DISTRIBUTION

PART 1 – GENERAL

1.01 SCOPE

- A. This section of the Specifications describes products to be incorporated into the water lines and requirements for the installation and use of these items. The Contractor shall furnish all products and perform all labor necessary to fulfill the requirements of these Specifications. It includes, but is not limited to the construction of the following items:
- B. This section generally includes water mains, fittings, and necessary appurtenances.
- C. Piping
- D. Valves
- E. Fittings
- F. Connect to Existing System
- G. All necessary appurtenances to convey potable water to the locations shown on the plans.

1.02 RELATED WORK

- A. Section 02315 – Excavation, Trenching and Backfill for Utility Systems
- B. Section 02370 – Soil Erosion Control
- C. Section 02920 - Grassing

1.03 REFERENCES

- A. ASTM D 3740-94a – Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
- B. ASTM E 329-93b – Agencies Engaged in the Testing and/or Inspection of Materials as Used in Construction.

- C. ASTM D 3034-94 – Type PSM PVC Sewer Pipe and Fittings.
- D. ASTM D 2321-89 – Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Installations.
- E. ANSI/AWWA C 150/A 21.50-96 – Thickness Design of Ductile Iron Pipe.
- F. ANSI/AWWA C 151/A 21.51-91 – Ductile Iron Pipe, Centrifugally Cast, for Water or Other Liquids.
- G. ASTM A 746-95 – Ductile Iron Gravity Sewer Pipe.
- H. ASTM D 3212-92 – Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
- I. ASTM F 477-95 – Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
- J. ASTM D 2241-94 – PVC Pressure-Rated Pipe (SDR – Series).
- K. ASTM D 3139-95 – Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seams.
- L. ASTM A 139-93a – Electric-Fusion (Arc) Welded Steel Pipe (NPS 4 and Over).
- M. ASTM C 478-94 – Precast Reinforced Concrete Manhole sections.
- N. ASTM C 443-94 – Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
- O. ACI 318-89 – Building Code Requirements for Reinforced concrete.
- P. ASTM C 39-94 – Compressive Strength of Cylindrical Concrete Specimens.
- Q. ASTM C 890-91 – Minimum Structural Design Loading for Monolithic or Sectional Precast Concrete Water and Wastewater Structures.
- R. ASTM C 891-90 – Installation of Underground Precast Concrete Utility Structures.
- S. ASTM C 913-89 – Precast Concrete Water and Wastewater Structures.
- T. ASTM A 615/A 615 M-95b – Deformed and Plain Billet – Steel Bars for Concrete Reinforcement.
- U. ANSI/AWWA C-500-93 – Metal-Seated Gate Valves for Water Supply Service.

- V. ANSI/AWWA C-509-94 – Resilient-Seated Gate Valves for Water Supply Service.
- W. AASHTO T 191-91 – Density of Soil In-Place by the Sand-Cone Method.
- X. ASTM D-2922-91 – Test methods for Density of Soil and Soil Aggregate In-Place by Nuclear Methods (Shallow Depth).
- Y. ASTM D-1557-91 – Laboratory Compaction Characteristics of Soil Using Modified Effort.
- Z. ASTM D 1556-90 – Density and Unit Weight of Soil In-Place By The Sand-Cone Method.
- AA. ASTM D 71-87 (reapproved 1994) – Evaluation Degree of Blistering of Paints.
- BB. ASTM D 2794-93 – Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- CC. ASTM E 96-95 – Water Vapor Transmission of Materials.
- DD. ASTM G 53-95 – Operating Light and Water-Exposure Apparatus (Fluorescent UV – Condensation Type) for Exposure of Nonmetallic Materials.
- EE. ANSI/AWWA C 111/A 21.11-95 – Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings.
- FF. ASTM A 377-95 – Index of Specifications for Ductile Iron Pressure Pipe.
- GG. ANSI/AWWA C 600-93 – Installation of Ductile Iron Water Mains and their appurtenances.
- HH. AWWA C-651 – Disinfecting Water Mains

1.04 OPTIONS

- A. The specifications describe several materials. Where manufacturers and models of equipment are named in the specification, it is intended that these are to describe the quality and function required. The Contractor may use equipment or materials of other manufacturers provided they are reviewed and accepted by the Engineer and the Owner as meeting the specifications.
- B. The Contractor will furnish the Engineer and the Owner a description of all

materials before ordering. The Engineer will review the Contractor's submittals and provide in writing an acceptance or rejection of material. However, an acceptance of any material by the Engineer does not relieve the Contractor of this responsibility to meet the requirements of the construction plans or these specifications.

1.05 QUALITY ASSURANCE

- A. Material and equipment shall be the standard product of a manufacturer who has manufactured them for a minimum of 2 years and who provides published data on the quality and performance of the project.
- B. A Subcontractor for any part of the work must have experience on similar work and if required, furnish the Engineer with a list of projects and the Owners or Engineers who are familiar with his competence.
- C. Devices, equipment, structures, and systems not designated by the Engineer that the Contractor wishes to furnish shall be designed either by a registered professional engineer or by someone the Engineer approved as qualified. If required, complete design calculations and assumptions shall be furnished to the Engineer or the Owner before acceptance.
- D. All testing of the piping shall be made by the Contractor with equipment qualified by the Owner, Engineer, or utility company and in the presence of the Engineer, Owner and utility company. The Engineer or his representative reserves the right to accept or reject testing equipment.
- E. Soil testing shall be done by a testing laboratory regularly engaged in soil testing, and shall be approved by the engineer prior to engagement. Mill certificates of test on materials made by manufacturers will be accepted provided the manufacturer maintains an adequate testing laboratory, makes regularly scheduled tests that are spot checked by an outside laboratory, and furnishes satisfactory certificates with the name of the one making the test.
- F. The details of all welded joints shall comply with all of the requirements for joints, which are accepted without qualification test under the "Code of Arc and Gas Welding in Building Construction of the American Welding Society". Workmanship shall conform to A.I.S.C. Specifications for Fabrication and Erection. All work shall be executed by skilled workmen under experienced supervision. All welding shall be done by welders who have been previously qualified by tests as prescribed in the "American Welding Society Standard Qualification Procedure" to perform the type of work required. Welders shall have passed the qualification test (Qualification tests using procedures covered in AWSS B3.0 Part II) within the preceding 12 months.

1.06 PRODUCT DELIVERY, STORAGE & HANDLING

- A. Furnish equipment and facilities for unloading, hauling, distributing, and storing pipe, fittings, valve, hydrants, and accessories.

1.07 SEQUENCING, SCHEDULING

- A. The Contractor shall arrange his work so that sections of mains between valves are tested, sterilized, placed in service as soon as reasonable after it is placed.

1.08 ALTERNATIVES

- A. The intention of these specifications is to produce the best system for the Owner. If the Contractor suggests that alternate material, equipment or procedures will improve the results at no additional cost, the Engineer and the Owner will examine the suggestion and if it is accepted, it may be used. The basis upon which acceptance of an alternate will be given is its value to the Owner, and not for the convenience of the Contractor.

1.09 GUARANTEE

- A. The Contractor shall guarantee the quality of the materials, equipment, and workmanship for 12 months after acceptance of the completed Project. Defects discovered during that period shall be repaired by the Contractor, at no cost to the Owner. The Performance Bond shall reflect this guarantee.
- B. The manufacturers of equipment, valves, pumps, controls, measuring devices and special equipment shall test the equipment at field conditions for compliance with the specifications. The manufacturer shall guarantee his product to be free from defects in material and factory workmanship for a period of 1 year from date of acceptance of the completed project, provided the product is properly installed, serviced and operated under normal conditions and according to the manufacturer's instructions. The manufacturer shall furnish a replacement for any component that proves defective during the guarantee period, except such items which are seals.

1.10 EXISTING UTILITIES

- A. The Contractor should expect to encounter utility lines during construction that are not shown on the plans. The Contractor shall contact all utility companies prior to beginning the work and request an accurate field location of their respective utility lines. If existing utilities are discovered that interfere with

installation of the water main and appurtenances as indicated on the Plans, the field engineer will attempt to make adjustments during construction to minimize conflicts with the existing utility lines.

- B. Damage to any part of the existing water system and facilities by the Contractor or Subcontractors, that is required by the User's and Owner's forces, shall be charged to the Contractor on the basis of time and material, plus 30% for overhead and administration.

1.11 REQUIREMENTS OF REGULATORY AGENCIES

- A. Water mains shall be sterilized to meet the requirements of the appropriate Regulatory Agency. Sterilization shall be in accordance with AWWA Standards C-651, latest revision.

1.12 CONNECT NEW MAIN TO EXISTING SYSTEM

- A. The Contractor shall furnish the necessary pipe and perform all excavation, dewatering, shoring, backfilling, etc. necessary to make the connection of a new main to the existing water system. The Contractor shall contact the Superintendent of the Water Utility a minimum of 48 hours in advance of construction. The Contractor shall be responsible for coordinating his construction with the utility operator.

1.13 ACCEPTANCE OF PORTIONS OF WORK

- A. The Owner reserves the right to accept and use any portion of the work whenever it is considered in the public interest to do so.

1.14 RECORD DATA

- A. It will be required of the Contractor to keep accurate, legible records of the location of any deviations from the construction drawings, any additional items or structures to the construction drawings, and all utilities encountered which are not shown on the construction drawings. These records must be maintained as installation is taking place and will be available on-site for inspection by Engineer during periodic site visits. See Section 01720 for specifics on "As-Built" requirements.

PART 2 – PRODUCTS

Products and materials used in the work shall conform to the following:

2.01 PIPE

- A. Ductile Iron Pipe – Shall conform to ANSI A21.50 (AWWA C-150) and ANSI A21.51 (AWWA C-151) latest revisions. Ductile iron pipe shall be a minimum of Class 350, and shall be cement lined in accordance with ANSI A21.4 or AWWA C-104.
- B. PVC Pipe - PVC Pipe shall be AWWA C-900, DR-18 and contain the Sanitation Foundation (NSF) seal for potable water.
- C. HDPE Pipe – HDPE Pipe shall be DIPS, DR-13 and conform to PE 4710.

2.02 JOINTS

- A. Flanged Joints – Shall conform to ANSI A21.15 (AWWA C-151) latest revision. Bolts shall conform to ANSI B18.2.1 and nuts shall conform to ANSI B18.2.2. Gaskets shall be rubber, either ring or full face, and shall be 1/8 inch thick. Gaskets shall conform to the dimensions recommended by AWWA C-151 latest revision.
- B. Mechanical Joints – In ductile iron pipe shall conform to ANSI A21.11 (AWWA C-111) latest revision.
- C. Push-On-Joints – In ductile iron pipes shall conform to ANSI A21.11 latest revision.
- D. Plastic Pipe – Joints in plastic pipe 4-inches and larger shall meet all requirements of AWWA C-900 latest revision. Joints in plastic pipe with a diameter less than 4-inches shall conform to ASTM D-3139 latest revision.
- E. Restrained Joints – Restrained joints for pipe, valves and fittings shall be mechanical joints with ductile iron retainer glands or push-on type joints and shall have a minimum rated working pressure of 250 psi. The joints shall be in accordance with the applicable portions of AWWA C111. The manufacturer of the joints shall furnish certification, witnessed by an independent laboratory, that the joints furnished have been tested at a pressure of 500 psi without signs of leakage or failure. Restrained joints shall be capable of being deflected after assembly.
- F. Heat Fusion Joining: Joints between plain end pipes and fittings shall be made by butt fusion.

2.03 FITTINGS

- A. Fittings for Ductile Iron – Shall be short body ductile iron, manufactured in accordance with ASA 21.53 (AWWA C-153) latest revision. They shall be cement lined in accordance with ANSI A-21.4 (AWWA C-104) latest revision. Fittings shall be designed to accommodate the type of pipe used.
- B. Fittings for Flanged Pipe – Shall be manufactured in accordance with ASA B 16.1, Class 125 flanges.
- C. Fittings for HDPE Pipe – HDPE fittings shall be manufactured in accordance to ASTM D-3261 and AWWA C 906.

2.04 FIRE HYDRANTS

- A. Fire Hydrants shall meet the requirements of Section 02505.

2.07 TAPPING SLEEVES AND VALVES (TS & V)

- A. Tapping Sleeves & Valves shall meet the requirements of Section 02505.

2.08 METAL DETECTOR TAPE

- A. Detection tapes will be installed over all pipes. The tape shall consist of 0.35 mils thick solid foil core encased in a protective plastic jacket that is resistant to alkalis, acids, and other destructive elements found in the soil. The lamination bond shall be strong enough that the layers cannot be separated by hand. Total composite thickness to be 5.0 mils. Foil core to be visible from unprinted side to ensure continuity. The tape shall have a minimum 3” width and a tensile strength of 84 pounds per three-inch wide strip.
- B. A continuous warning message repeated every 16” to 36” shall be imprinted on the tape surface. The tape shall contain an opaque color concentrate designating the color code appropriate to the line being buried (Water Systems – Safety Precaution Blue).

2.09 TRACING WIRE

- A. Tracing wire shall be #14 gauge insulated single strand copper wire.

PART 3 – EXECUTION

3.01 ON-SITE OBSERVATION

- A. The Engineer shall have the right to require that any portion of the work be done in his presence and if any work is covered up after such instruction, it shall be exposed by the Contractor for observation. However, if the Contractor notifies the Engineer that such work is scheduled and the Engineer fails to appear within 48 hours, the Contractor may proceed without him. All work done and materials furnished shall be subject to review by the Engineer or Project Representative. All improper work shall be reconstructed and all materials which do not conform to the requirements of the specifications shall be removed from the work upon notice being received from the Engineer for the rejection of such materials. The Engineer shall have the right to mark rejected materials so as to distinguish them as such.

The Contractor shall give the Project Engineer or project Representative a minimum of 48 hours notice for all required observations or tests.

It will also be required of the Contractor to keep accurate, legible records of the location of all water lines, service laterals, valves, fittings, and appurtenances. These records will be prepared in accordance with the paragraph on "Record Data" in the Supplementary Conditions. Final payment to the Contractor will be withheld until all such information is received and accepted.

3.02 HANDLING MATERIALS

- A. Unloading: Furnish equipment and facilities for unloading, handling, distributing and storing pipe, fittings, valves and accessories. Make equipment available at all times for use in unloading. Do not drop or dump materials. All materials dropped or dumped will be subject to rejection without additional justification.
- B. Handling: Handle pipe, fittings, valves and accessories carefully to prevent shock or damage. Handle pipe by rolling on skids, forklift, or front loader. Do not use material damaged in handling.
- C. Distribution: Distribute and place pipe and materials to not interfere with traffic. Do not string pipe more than 300 feet beyond the area where pipe is being laid. Do not obstruct drainage ditches.
- D. Storage: Store all pipe which cannot be distributed along the route. Make arrangements for the use of suitable storage areas. Do not interfere with other contractors right to access.

3.03 CONSTRUCTION ALONG HIGHWAYS, STREETS AND ROADWAYS

Install pipelines and accessories along highways, streets and roadways in accordance with

the applicable regulations of the County, City, and/or the Department of Transportation with reference to construction operations, safety, traffic control, road maintenance and repair. Comply with all requirements of Section 01570 – Traffic Control.

- A. Protection of Traffic: Provide and maintain suitable signs, barricades and lights for protection of traffic.

Replace all highway signs removed for construction as soon as possible. Do not close or block any highway, street, or roadway without first obtaining permission from the proper authorities.

Provide flagmen to direct and expedite the flow of traffic.

- B. Construction Operations: Perform all work along highways, streets and roadways to least interfere with traffic.

1. Stripping: Where the pipe line is laid along road shoulders, strip and stockpile all sod, topsoil and other material suitable for shoulder restoration.

2. Trenching, Laying and Backfilling: Do not open the trench any further ahead of pipe laying operations than is necessary. Backfill and remove excess material immediately behind laying operations. Complete excavation and backfill for any portion of the trench in the same day.

3. Shaping: Reshape damaged slopes, side ditches, and ditch lines immediately after completing backfilling operations. Replace topsoil, sod and any other materials removed from shoulders.

- C. Excavated Materials: Do not place excavated material along highways, streets and roadways in a manner which obstructs traffic. Sweep all scattered excavated material off of the pavement.

- D. Drainage Structures: Keep all side ditches, culverts, cross drains, and other drainage structures clear of excavated material and free to drain at all times.

- E. Maintaining Highways, Streets, Roadways and Driveways: Maintain streets, highways, and roadways in suitable condition for movement of traffic until completion and final acceptance of the work. Use steel running plate to maintain traffic until pavement replacement is completed.

NOTE: Traffic must be maintained at all times. When one lane is closed, flagmen must be utilized to maintain traffic flow.

Repair all driveways that are cut or damaged immediately. Maintain them in a

suitable condition for use until completion and final acceptance of the work.

3.04 EXISTING UNDERGROUND UTILITIES AND OBSTRUCTIONS

- A. It is the responsibility of the Contractor to locate all existing utilities along the path of his construction. Where unforeseen underground utilities are encountered, the location and alignment of the water main may be changed by the field engineer to avoid interference.

3.05 CONNECTIONS TO EXISTING PIPE LINES

- A. Before laying pipe, the Contractor shall locate the points of connection to existing pipe lines and uncover as necessary for the Engineer and Owner to confirm the nature of the connection to be made. The Contractor shall furnish materials and make the connection to all existing pipelines. The Contractor will be observed during construction of tie-ins by the Owner and the Engineer. The Contractor shall use all available practices and resources to minimize the time the customers are without water. The Contractor shall notify affected customers of a water outage at least 24 hours in advance.

3.06 LAYING PIPE

- A. General – Ductile iron pipe shall be laid in accordance with AWWA C-600; PVC pipe shall be laid in accordance with AWWA C 605, ASTM D 2774, UNI-Bell UNI-B 3 and the pipe manufacturer's recommendations; HDPE pipe shall be laid in accordance with the AWWA C 906, ASTM D2321, and the pipe manufacturer's recommendations.
- B. Construction Methods:
 - 1. Field Inspection: All pipe and accessories shall be laid, jointed, tested for defects and for leakage with pressure and chlorinated in the manner herein specified in the presence of the Engineer or his authorized representative and subject to their approval.
 - 2. Handling Pipe and Accessories:
 - (a) Care: Pipe, fittings, valves and other accessories shall be unloaded at the point of delivery, hauled to and distributed at the site of the project by the contractor; they shall at all times be handled with care to avoid damage. In loading and unloading they shall be lifted by hoists, slid, or towed on skid-ways in such a manner as to avoid shock. Under no circumstances shall they be dropped. Pipe handled on skidways must not be skidded or rolled against pipe already on the

ground.

- (b) At Site of Work: In distributing the material at the site of the work, each piece shall be unloaded opposite or near the place where it is to be laid in the trench and shall be laid on high ground so that it will not be in a drainage way.
- (c) Bell Ends, How Faced: Pipe shall be placed on the site of the work parallel with the trench alignment and with the bell ends facing the direction in which the work will proceed, unless otherwise directed by the Engineer.
- (d) Pipe Kept Clean: The interior of all pipe, fittings and other accessories shall be kept free from dirt and foreign matter at all times.
- (e) Detection Tape: Detection tape will be used over all pipe and tubing. The tape shall be laid 18" below finished grade.
- (f) Tracing Wire: Tracing wire will be installed on all water mains and water service laterals directly on top of the water line. The wire shall be secured to the pipe with tape or other acceptable methods at spacings of no more than 36" apart. The insulated wire must maintain electrical continuity. The tracing wire shall also be stubbed up into each valve box and at each fire hydrant. Stub up connections shall be stripped, joined and wrapped as previously described for water service laterals. This tracing wire system shall be tested following construction. If the tracing wire system is found not to be functioning in any areas, the contractor must repair the system prior to final payment. All equipment, meters, detectors, etc., needed for testing shall be furnished by the Contractor.

3. Alignment and Grade:

- (a) General: All pipe shall be laid and maintained in the required lines and grades, with fittings and valves at the required locations, with joints centered and spigots home, and with all valve stems plumb.
- (b) Depth of Pipe: Where pipe is laid in roadways and parkways of streets, the top of the barrel of the pipe shall have a minimum cover of forty-eight inches below the curb line of the street or where not curb line has been established, below the existing ground line. Where the pipe is laid in open, unsubdivided areas, a minimum of forty-eight inches of cover is required. A greater depth of cover is

required in certain sections of the main, such as railroad crossings, valve locations and other sections of special construction, and within State and Federal highway rights-of-way.

- (c) Prior Investigation – Prior to excavation, investigation shall be made to the extent necessary to determine the location of existing underground structures and conflicts. Care shall be exercised by the Contractor during excavation to avoid damage to existing structures. The pipe manufacturers recommendations shall be used when the water main being installed is adjacent to a facility that is cathodically protected.
- (d) Unforeseen Obstructions – When obstructions that are not marked by utility locators are encountered during the progress of work and interfere so that an alteration of the pipe alignment is required immediately, the Contractor will be paid for a utility line adjustment. This item must be approved by Engineer prior to installation or no payment will be made. No utility line adjustment will be paid for crossings where Contractor can adjust for grade gradually to avoid the conflict.
- (e) Clearance – When crossing existing pipelines or other structures, alignment and grade shall be adjusted as necessary, with the acceptance of the Owner, to provide clearance as required by federal, state, and local regulations or as deemed necessary by the Owner to prevent future damage or contamination of either structure. When crossing sanitary sewer lines, the water main must be installed a minimum of 18” above the sewer line.

4. Excavation and Preparation of Trench:

See Section 02315

5. Pipe Handling:

- (a) Manner of Hauling Pipe and Accessories: Proper implements, tools and facilities shall be provided and used by the contractor for the safe and convenient execution of the work. All pipe, fittings and valves shall be carefully lowered into the trench piece by piece by means of derrick ropes or other suitable tools or equipment, in such manner as to prevent damage to pipe or accessories. Under no circumstances will pipe, fittings, or valves be dropped or dumped into the trench.
- (b) Inspection: Before lowering and while still suspended, the pipe shall be inspected for defects. Any defective, damaged or unsound pipe

shall be rejected.

- (c) Pipe Kept Clean: All foreign matter or dirt shall be removed from the pipe, and it shall be kept clean by approved means during and after laying.
 - (d) Laying of the Pipe: The spigot shall be centered in the bell, the pipe forced "home" and brought into true alignment; it shall be secured there by earth carefully tamped under and on each side of it, excepting at the bell holes. Care shall be taken to prevent dirt from entering the joint space. No "blocking up" of pipe or joints will be permitted. The joint shall be made as hereinafter described.
 - (e) Trench Water Entering Pipe: At times when pipe laying is not in progress, the open ends of the pipe shall be closed by approved means and no trench water shall be permitted to enter the pipe.
 - (f) Cutting Pipe: Cutting of pipe for inserting valves, fittings or closure pieces shall be done in a neat workmanlike manner without damage to the pipe.
 - (g) Bell Ends Face Direction of Laying: Unless otherwise directed, pipe shall be laid with bell ends facing in the direction of laying; and for lines on an appreciable slope, bells shall, at the discretion of the engineer face up-grade.
 - (h) Permissible Deflections at Joints: Wherever necessary to deflect pipe from a straight line, either in the vertical or horizontal plane to avoid obstructions, the degree of deflection shall be according to manufacturer's recommendations.
 - (i) Unsuitable Conditions for Laying Pipe: No pipe shall be laid in water, or when the trench conditions or the weather is unsuitable for such work.
6. Joining Pipe-Mechanical Joints: The following steps shall be taken in making mechanical joints:
- (a) All lumps, blisters and excess coal-tar enamel shall be removed from socket and spigot of the pipe.
 - (b) Wash socket and plain end with soapy water containing chloride solution; then slip gland and gasket over plain end. The small side of gasket and lip gland shall face bell.

- (c) Paint gasket with soapy solution containing chlorine.
- (d) Push gasket into position, being sure it is evenly seated in socket.
- (e) Slide gland into position; insert bolts and run nuts up finger tight.
- (f) Tighten bolts to uniform tightness with correct ratchet wrench. The first bolt tightened shall be the bottom bolt, then top. All other bolts shall be tightened in sequence at 180 degrees apart.

7. Joining of HDPE Pipe

- (a) Pipes shall be joined to one another by means of thermal butt-fusion. Polyethylene pipe lengths to be joined by thermal butt-fusion shall be of the same type, grade, and class of polyethylene compound and supplied from the same raw material supplier.
- (b) Butt-fusion of pipes shall be performed in accordance with the manufacturer's recommendations as to equipment and technique. Butt-fusion joining shall be 100% efficient offering joint weld strength equal to or greater than the tensile strength of the pipe.

8. Setting, Hydrants, Valves, Valve Boxes and Fittings:

- (a) General: Hydrants, valves and pipe fittings shall be set and jointed to new pipe in the manner heretofore specified for cleaning, laying and jointing pipe. Hydrants and valves shall be installed plumb. Valve-operating stems shall be oriented in a manner to allow proper operation.
- (b) Valve Boxes: Cast iron valve boxes shall be firmly supported, and maintained centered and plumb over the wrench nut of the gate valve, with box cover.

9. Plugging Dead Ends: Standard plugs shall be inserted into the bells of all dead ends of pipes, tees or crosses and spigot ends shall be capped. Plugs or caps shall be jointed to the pipe or fittings in the manner specified above.

10. Thrust Blocking:

- (a) Concrete having compressive strength of not less than 3000 psi shall be used as a cradle or thrust blocking where shown on the plans or where directed by the Engineer. Bends exceeding 22-1/4 degrees, crosses with one opening plugged, and all tees shall be backed with

concrete as a thrust block. Blocking shall be placed between solid ground and the fitting to be anchored; the area of bearing on the pipe and on ground in each instance shall be that shown on the plans. The blocking shall be so placed that the pipe fitting joints will be accessible for repair. No extra payment will be made for the thrust blocks.

- (b) Anchorage for Hydrants – A concrete block 1' x 1' x 2' shall be poured between the back of the hydrant and undisturbed earth of the trench side without covering weep holes and bolts. Joint restraints equivalent to Megalugs manufactured by EBAA Iron may be used in lieu of concrete blocking.

11. Pressure and Leakage Tests:

- (a) Pressure During Test: Immediately after the pipe has been laid and backfilled, but prior to the placement of pavement, each valved section of newly laid pipe shall be subjected to a leakage and pressure test. For any section being tested the pressure applied shall be such that at the highest point in the section, the pressure shall be minimum of 150 pounds per square inch.
- (b) Duration of Test: The duration of each pressure test shall be two (2) hours.
- (c) Procedures: Each valved section of pipe shall be slowly filled with water and the specified test pressure, measured at the point of highest elevation shall be supplied by means of a pump connected to the pipe in a satisfactory manner. The pump, pipe connection, and all necessary apparatus, gauges, and meters shall be furnished by the contractor. The contractor shall furnish all necessary labor and assistance in conducting the tests. The Contractor will be required to furnish water for filling the lines for making the test. The Engineer & Owner must be notified of all pressure tests at least 48 hours in advance.
- (d) Expelling Air Before Tests: Before applying the specified test pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made, if necessary, at points of highest elevation and afterward tightly plugged.
- (e) Examination Under Pressure: At intervals during the test, the route of the pipeline shall be inspected to locate any leaks or breaks. Any cracked or defective joints, cracked or defective pipe, fittings or

valves discovered in consequence of this pressure test shall be removed and replaced with sound material in the manner provided and the test shall be repeated until satisfactory results are obtained.

- (f) Permissible Leakage: Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain the specified leakage test pressure after the pipe has been filled with water and the air in the pipeline has been expelled. No installation will be accepted if leakage is greater than that determined by the following:

$$\text{For HDPE Installations:} \quad L = \frac{SD(P)^{1/3}}{133,200} \quad \text{Where:}$$

L is the allowable leakage in gallons per hour; S is the length of pipe tested in feet; D is the nominal diameter of the pipe in inches; and P is the average test pressure during the leakage test in pounds per square inch gauge.

12. Backfilling, Cleaning Up and Maintaining Surfaces:

See Section 02315

13. Disinfection of Mains: The contractor shall disinfect all new mains, in accordance with AWWA C651 furnishing all labor, equipment and material necessary for the complete disinfection of the mains as hereinafter provided. Mains shall be disinfected by the application of a chlorinating agent into the water used for the initial filling of the mains. The chlorinating agent may be chlorine gas-water mixture, calcium hypochlorite in water, or chlorinated lime of known chlorine content in water and shall be fed through a suitable solution feed device. The chlorinating agent shall be applied at or near the beginning point from which the main is being filled and shall be injected into the main through a corporation cock tapped into the horizontal exit of the newly laid main. The water being used to fill the line shall be controlled to flow into the section to be sterilized very slowly and the rate of application of the chlorinating agent shall be in such proportion to the rate of the water entering the pipe that the chlorine dose applied to the water shall be at least 50 ppm. The chlorine treated water shall be retained in the new main at least 24 hours and a 10 ppm of residual chlorine shall remain after the 24-hour period. Following chlorination all treated water shall be flushed from the mains until replacement water shall have a chlorine content of not more than 0.1 ppm in excess of the residual in water from the supplying main and in any event not less than 0.2 ppm. Samples of the water shall be taken from several points in the new lines and submitted to a State Approved lab for

bacteriological analysis. Should the analysis show contamination, the system shall be re-chlorinated and further samples taken and submitted for analysis until no contamination is indicated.

Copies of all results will be provided to Owner and Engineer.

END OF SECTION

SECTION 02741

REMOVAL AND REPLACEMENT OF EXISTING PAVEMENT

PART 1 – GENERAL

1.01 SCOPE

- A. The Contractor shall furnish all labor, materials, equipment and incidental required to remove and replace existing pavements defined as Class “A” Pavement Replacement and Asphalt Patch as shown on the Drawings and as required for the construction of new pipelines and structures.
- B. The Contractor will be required to hose clean all road surfaces after backfilling and before any surfacing, but in no case will pavement be placed until the trench material is dry.
- C. The Contractor shall maintain pavement under this Contract during the guarantee period of one year and shall promptly refill and repave areas which have settled or are otherwise unsatisfactory for traffic.
- D. The Contractor shall furnish and spread calcium chloride on disturbed surfaces to allay dust conditions. Calcium chloride shall conform to AASHO M-144, except that the pellet or flake shall be equally acceptable.
- E. Permanent pavement shall be placed over a backfilled trench as soon as possible. Repaving may be delayed if the Engineer so directs, but in such case temporary pavement or crusher run placement shall be required.
- F. If, in the opinion of the Engineer, the placing of temporary pavement is necessary, the Contractor shall place the temporary pavement as described hereinafter.

1.02 RELATED WORK

- A. Not Applicable

1.03 SPECIFICATIONS

- A. Except as otherwise specified herein, the Standard Specifications for Highway Construction as issued by the State of Georgia, Department of Highways and Public Transportation, Section 400, shall apply to material requirements for

temporary and permanent replacement of pavements removed in excavation of trenches.

PART 2 PRODUCTS

2.01 CLASS “A” PAVEMENT REPLACEMENT (D.O.T. RIGHT-OF-WAY)

- A. Class “A” Pavement Replacement will consist of 8” of Class “A” Portland Cement Concrete over compacted subgrade with 2” of Type “E” asphaltic top coat that is equal or better than original paving. A bituminous tack coat must be applied before placement of asphaltic top coat.

2.02 ASPHALT REMOVAL & REPLACEMENT (CITY RIGHT-OF-WAY)

- A. An Asphalt Patch will consist of 6” of Class “A” Portland Cement Concrete over compacted subgrade with 2” of Type “E” asphaltic top coat that is equal or better than original paving. A bituminous tack coat must be applied before placement of asphaltic top coat.

2.03 TEMPORARY PAVEMENT

- A. Where directed by the Engineer, the Contractor shall place temporary pavement with top matching the grade of existing pavement. The material shall be 1-1/2” Asphaltic Concrete Surface Course.

PART 3 EXECUTION

3.01 CUTTING PAVEMENT

- A. The Contractor shall cut and remove pavement as necessary for installing the new pipe lines and appurtenances and for making connections to existing pipe lines.
- B. Before removing pavement, the pavement shall be marked for cuts nearly paralleling pipe lines and existing street lines. Asphalt pavement shall be cut along the markings with a rotary saw or other suitable tool. Concrete pavement, and asphalt pavement on concrete base, shall be scored to a depth approximately two (2) inches below the surface of the concrete along the pavement may be broken below the scoring with a jackhammer or other suitable equipment.
- C. No pavement shall be machine pulled until completely broken and separated along the marked cuts.

- D. The pavement adjacent to pipeline trenches shall neither be disturbed nor damaged. If the adjacent pavement is disturbed or damaged, irrespective of cause, the Contractor shall remove the damaged pavement and shall replace it at his own expense.
- E. No separate payment will be made for sawcutting as it shall be considered part of the pavement removal & replacement items.

3.02 HOT MIX ASPHALT PAVEMENT CONSTRUCTION, REPAIR AND REPLACEMENT

- A. All existing pavement cut or damaged by construction under this contract shall be repaired to match the original surface material and original grade unless otherwise specified or shown on the Drawings. Materials and construction procedures for base course and pavement repair shall conform to the GA DOT Specifications for the type of original surface.
- B. New pavements shall be placed at the locations as shown on the Drawings.
- C. The work for new or for repair of existing pavement shall include the placing and compacting of the base course, the placing of the Portland Cement Concrete at the thickness specified in the details, the application of prime and tack coats where required, the placing and maintaining of the hot mix asphalt surface course at the thickness specified in the details, and all special requirements specified herein.
- D. The backfill shall be thoroughly compacted prior to concrete base.
- E. The asphalt surface course shall be thoroughly rolled or tamped with a mechanical roller or tamper.

3.03 CONCRETE PAVEMENT

- A. Where the installation of pipe involves the cutting of concrete, the cutting shall be kept to a minimum. Once the pipe is installed, the Contractor shall compact the trench to 98% density according to the modified proctor. After compaction, Contractor shall install and compact a 6" thick graded aggregate base course. The base shall be poured and finished. Concrete shall be 3,000 psi and shall be equal or better than original pavement.
- B. When sidewalks are removed and replaced, match the existing finish and construct sidewalks as detailed on the plans.

3.04 CLEAN-UP

- A. After all repair and restoration or paving has been completed, all excess asphalt, dirt, rock and other debris shall be removed from the roadways. All existing storm sewers and inlets shall be checked and cleaned of any construction debris.

3.05 MAINTENANCE OR REPAIR

- A. All wearing surfaces shall be maintained by the Contractor in good order and be suitable for traffic at all times for a period of one year after completion and acceptance of the work. Approximately at the end of the maintenance period a final inspection will be made of the repaired surface and any settlement or of the repaired surface and any settlement or depression shall be adjusted as previously noted herein.

END SECTION

SECTION 02775

SIDEWALKS, DRIVEWAYS, & CURBS AND GUTTERS

PART 1 – GENERAL

1.01 SCOPE

- A. The work included in this section includes furnishing all materials, equipment, and labor necessary to construct Portland Cement Concrete curb and gutter, sidewalks, and driveways, as shown on the construction plans.

1.02 RELATED SECTIONS

- A. Section 02370 – Soil Erosion Control

1.03 REFERENCES

- A. ACI031 – Specifications for Concrete Buildings.
- B. ACI304 – Recommended Practice for Measuring, Measuring, Mixing, Transporting, and Placing Concrete.
- C. ASTM A 185-94 – Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
- D. ASTM A 497-94 – Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.
- E. ASTM A 615-95 – Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
- F. ASTM C 33-93 – Concrete Aggregates.
- G. ASTM C 39-94 – Compressive Strength of Cylindrical Concrete Specimens
- H. ASTM C 94-94 – Ready-Mixed Concrete.
- I. ASTM C 150-05 – Portland Cement
- J. ASTM C 260-94 – Air – Entraining Admixtures for Concrete.
- K. ASTM C 309-94 – Liquid Membrane – Forming Compounds for Curing Concrete.
- L. ASTM C 494-92 – Chemical Admixtures for Concrete

- M. ASTM D 1751-83 (1991) – Preformed Expansion Joint Filler for Concrete Paving and Structures Construction. (Nonextruding and Resilient Bituminous Type).
- N. ASTM D 1752-84 (1992) – Performed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- O. ASTM D 3740-94 – Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
- P. ASTM E 329-93 – Agencies Engaged in the Testing and/or Inspection of Materials used in construction.

1.04 REGULATORY REQUIREMENTS

- A. Perform work in accordance with Client, and the Department of Transportation, State of Georgia, Standard Specifications, Current Edition.
- B. Conform to applicable standards for paving work on public property.

1.05 TESTING

- A. Testing laboratory shall operate in accordance to ASTM D 3740 and E 329 and shall be accepted by the Engineer.
- B. The testing laboratory and Project Engineer/Project Representative shall be given a minimum of 48 hours notice prior to taking any of the tests.
- C. Testing shall be the responsibility of the Contractor and shall be performed at the Contractor's expense by a commercial testing laboratory that operates in accordance with subparagraph Number 1 above.
- D. The Contractor shall submit for review a design mix for "Class B" concrete proposed for use. The mix shall be prepared by an approved testing laboratory. Compressive strength of at least four (4) specimens of the design mix shall indicate 15% higher than 28 days strengths specified. During the work, the Contractor shall make 3 test cylinders for each 75 cubic yards, or fraction thereof, of concrete placed each day. One cylinder shall be tested at 7 days and the other two at 28 days in accordance with ASTM C-39. Copies of all test reports shall be furnished to the Engineer.

1.06 SUBMITTALS

- A. Product Data: Provide data on joint filler, admixtures, and curing compounds.

- B. Concrete Mix Design.

1.07 WEATHER CONDITIONS

- A. Do not place concrete when base surface temperature is less than 40° F, or surface is wet or frozen.

PART 2 – PRODUCTS

2.01 FORM MATERIALS

- A. Shall conform to ACI301.
- B. Shall be wood, plywood, metal or other accepted material and shall be of the grade or type suitable to obtain the finish specified. The material should be of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removed. Use straight forms, free of distortion and defects.
- C. Use flexible spring steel forms or laminated boards to form radius bends as required.
- D. Form Ties: Removable or snap-off type, galvanized metal, adjustable length, free of defects that could leave holes larger than 1-inch in concrete surface.
- E. Form Release Agent: Colorless mineral oil, which will not stain concrete, or absorb moisture, or impair natural bonding or color characteristics of coating intended for use on concrete.

2.02 REINFORCING STEEL

- A. Reinforcing Steel: ASTM A 615, Grade 60 billet steel deformed bars; uncoated finish.
- B. Welded Steel Wire Fabric: Plain type, ASTM A 185; uncoated finish.
- C. When specifically called for on the plans, reinforcing bars shall be epoxy-coated in accordance with ASTM A775.

2.03 CONCRETE MATERIALS

- A. Concrete Materials: “Class B” concrete as defined by the Standard Specifications of the Department of Transportation of Georgia.

- B. Fine and Coarse Mix Aggregates: ASSTM C33.
- C. Water: Potable, not detrimental to concrete
- D. Air Entrainment: ASTM C260.

2.04 JOINT SEALERS

- A. Joint Fillers: [ASTM D1751] Asphalt impregnated fiberboard or felt, tongue and grove profile.
- B. Sealant: Joints shall be sealed per detail on project drawings. ASTM C 920-94, Type S or M, Grade P or NS, Class 25.

2.05 CONCRETE MIX-BY PERFORMANCE CRITERIA

- A. Concrete mixed at the job site shall be mixed in a batch mixer in accordance with American Concrete Institution Standard A.C.I 318, and in a similar manner subject to acceptance. Ready-mixed concrete shall conform to A.S.T.M. Standard C-94. Mixing time for stationary mixers over 1 cubic yard in capacity shall be increased 15 seconds for each additional ½ cubic yard or fraction thereof materials mixed. Construction shall be in accordance with applicable portions of “Building Code Requirements for Concrete” (A.C.I. – 318).
- B. Provide concrete to the following criteria:
 - 1. Flexible Strength: 700 psi
 - 2. Compressive Strength: 3,500 psi @ 28 days.
 - 3. Slump: 2 to 3 inches.
- C. Use accelerating admixtures in cold weather only when approved by Engineer. Use of admixtures will not relax cold weather placement requirements.
- D. Use calcium chloride only approved by Engineer.
- E. Use set retarding admixtures during hot weather only when approved by Engineer.

2.06 SOURCE QUALITY CONTROL AND TEST

- A. All sampling and testing services shall be performed at the Contractor’s expense, by a testing laboratory which operates in accordance with ASTM D 3740 and E 329 latest edition and accepted by the Engineer.

- B. The Contractor shall submit for review a design mix for each class of concrete proposed for use. The mix shall be prepared by an approved testing laboratory. Compressive strength of a least four specimens of the design mix shall indicate 15% higher than 28 days strength specified. During the work, the Contractor shall make 3 test cylinders for each 30 cubic yards, or fraction thereof, of concrete placed each day. One cylinder shall be tested a 7 days and the other two at 28 days in accordance with ASTM C 39. Copies of all test reports shall be furnished to the Engineer in duplicate.

PART 3 – EXECUTION

3.01 CONSTRUCTION OBSERVATION

- A. Verify compacted subgrade & granular base are acceptable and ready to support paving and imposed loads.
- B. Verify gradients and elevations of base are correct.
- C. The Engineer will have the right to require that any portion of the work the done in his presence and if the work is covered up after such instruction, it shall be exposed by the Contractor for observation. However, if the Contractor notifies the Engineer that such work is scheduled, and the Engineer fails to appear within 48 hours, the Contractor may proceed without him. All work done and materials furnished shall be subject to review by the Engineer or Project Representative. Improper work shall be reconstructed. All materials, which do not conform to the requirements of the specifications, shall be removed from the work upon notice being received from the Engineer for the rejection of such materials. The Engineer shall have the right to mark rejected materials so as to distinguish them as such.

3.02 SUBBASE

- A. Prepare subbase in accordance with Section 300 - Standard Specifications for Base and Subbase Courses, Department of Transportation, State of Georgia, current Edition.
- B. Remove loose material from compacted subbase surface immediately before placing concrete.
- C. Proof-roll prepared subbase surface to check for unstable areas and need for additional compaction. Do not begin paving work until such conditions have been corrected and area is ready to receive paving.

3.03 PREPARATION FOR PLACEMENT

- A. Water shall be removed from excavations before concrete is deposited. Hardened concrete debris, and other foreign materials shall be removed from the interior of forms and from the inside of mixing and conveying equipment. The reinforcement shall be made secure in position and shall be subject to examination and acceptance.
- B. Moisten base to minimize absorption of water from fresh concrete.
- C. Notify Engineer minimum 48 hours prior to commencement of concreting operations.

3.04 FORMING

- A. Place and secure forms to correct location, dimension, profile, and gradient.
- B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- C. Place joint filler in position, in straight lines. Secure to formwork during concrete placement.
- D. Forms shall be constructed to the shape, form line, and grade required and shall be maintained sufficiently rigid to prevent deformation under load. Formwork and details of construction shall conform to ACI-318, Chapter 6.
- E. Check completed formwork for grade and alignment to following tolerances:

Top of forms not more than 1/8" in 10'.

Vertical face on longitudinal axis, not more than 1/4" in 10'.

3.05 REINFORCING

- A. Place Reinforcement as indicated.
- B. Interrupt reinforcement at expansion joints.

3.06 PLACING CONCRETE

- A. Placing of concrete shall conform to Chapter 5 of the American Concrete Institution Standard A.C.I. 318. Concrete having attained initial set or having contained water for more than 45 minutes shall not be used in the work. Concrete shall not be dropped freely more than 3 feet. Concrete shall be mixed and placed only when the temperature is at least 40 degrees F and rising. Concrete shall be

placed only upon surfaces that are free from frost, ice, mud and other detrimental circumstances. When placed on dry soil or previous materials, waterproof paper or polyethylene sheeting shall be laid over the surfaces that are to receive the concrete.

- B. Ensure reinforcement, inserts, embedded parts, and formed joints are not disturbed during concrete placement.
- C. Place concrete continuously over the full width of the panel and between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.

3.07 JOINTS

- A. Place expansion and/or contraction joints at 20 foot intervals. Align curb, gutter, and sidewalk joints.
- B. Place joint filler between paving components and building or other appurtenances. Recess to of filler $\frac{1}{4}$ inch.
- C. Provide swan joints at 3 feet intervals between sidewalks and curbs.
- D. Saw cut contraction joints $\frac{3}{16}$ inch wide at an optimum time after finishing. Cut $\frac{1}{3}$ into depth of slab.
- E. Finishing: After striking-off and consolidating concrete, smooth surface by screeding and floating. Use hand methods only where mechanical floating is not possible. Adjust floating to compact surface and produce uniform texture.

After floating, test surface for trueness with a 10' straightedge. Distribute concrete as required to remove subsurface irregularities, and refloat areas to provide a continuous smooth finish.

3.08 FINISHING

- A. Concrete Finishing: After striking-off and consolidating concrete, smooth surface by screeding and floating. Use hand methods only where mechanical floating is not possible. Adjust floating to compact surface and produce uniform texture.
- B. After floating, test surface for trueness with a 10' straightedge. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide a continuous smooth finish.

- C. Work edges of gutters, back top edge of curb, and formed joints with an edging tool, and round to ½" radius, unless otherwise indicated. Eliminate tool marks on concrete surface.
- D. Do not remove forms for 24 hours after concrete has been placed. After form removal, clean ends of joints and point-up any minor honeycombed areas. Remove and replace areas or sections with major defects, as directed by Architects.

3.09 CONCRETE CURING

- A. Immediately after placement and finishing, concrete shall be protected from moisture loss for not less than 7 days. For concrete surfaces not in contact with forms, white-pigmented curing compound shall be uniformly applied after water sheen disappears from the concrete surface. Formed surfaces shall receive and application of curing compound if forms are removed during the 7 day curing period. Curing compound shall not be applied during rainfall.
- B. Curing compound shall be applied under pressure at the rate of 1 gallon to not more than 150 square feet by mechanical sprayers. The spraying equipment shall be of the fully atomizing type. At the time of use, the compound shall be thoroughly mixed with white pigments uniformly dispersed throughout the sprayer. Care shall be taken to prevent application to joints where concrete bond is required, to reinforcement steel and to joints where joint sealer is to be placed. The compound shall form a uniform continuous coherent film that will not crack or peel and shall be free from pinholes and other imperfections. Concrete surfaces that are subjected to heavy rainfall within 3 hours after curing compound has been applied shall be resprayed by the above method and at the above coverage at no additional expense to the Owner.
- C. No pedestrian or vehicular traffic shall be allowed over the surface for seven days unless the surface is protected by planks, plywood, or sand. The protection shall not be placed until at least 12 hours after the application of the curing compound.
- D. Protect concrete by suitable methods to prevent damage by mechanical injury or excessively hot or cold temperatures.

3.10 FIELD QUALITY CONTROL

- A. Three concrete cylinders will be taken every 75 cubic yards of concrete placed each day.
- B. One additional test cylinder will be taken during cold weather and cured on site under same conditions as concrete it represents.

- C. One slump test will be taken for each set of test cylinders taken.
- D. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.11 PROTECTION

- A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury.
- B. Repair or Replace broken or defective concrete, as directed by Engineer.
- C. Allow testing company to drill test cores where directed by Engineer, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy adhesive.
- D. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
- E. Sweep concrete curb and gutter and wash free of stains, discolorations, dirt, and other foreign material just prior to final inspection.

END SECTION

SECTION 02920
PERMANENT (PERENNIAL) GRASSING AND LANDSCAPING

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Preparation of ground surface; furnishing and application of lime, fertilizer, seed, and mulch to establish a stand of permanent, mowable grass on all disturbed areas; and placement of all disturbed shrubs, trees, and miscellaneous plants.
- B. Seed Protection.
- C. Maintenance of seeded areas until final acceptance.

1.02 RELATED SECTIONS

- A. Section 02370 – Soil Erosion and Sedimentation Control

1.03 REFERENCES

- A. “Standard Specifications, Construction of Roads and Bridges” Section 700 and 702;1993 Edition; published by the Georgia Department of Transportation; hereinafter referred to as the “Standard Specifications.”
- B. “Manual for Erosion and Sediment Control in Georgia” published by the State Soil and Water Conservation Commission of Georgia; hereinafter referred to as the “Manual”. Contractor shall be responsible for the acquisition and utilization of the latest edition of the “Manual for Erosion and Sediment Control in Georgia”.
- C. Georgia’s NPDES General Permit for Storm Water Discharges Associated with Construction Activity For Infrastructure Construction Projects (**GAR 100002**)

1.04 SUBMITTALS

- A. Contractor shall submit list of grasses, lime, fertilizer, seeding and mulching rates; and seeding dates for Engineer’s review and approval prior to seeding.

1.05 DEFINITIONS

- A. Final Stabilization: All soil disturbing activities at the site have been completed, and that for unpaved areas and areas not covered by permanent structures, at least 70% of the soil surface is uniformly covered in permanent vegetation or

equivalent permanent stabilization measures (such as the use of rip rap, gabions, permanent mulches, or geotextiles) have been employed.

- B. Land-Disturbing Activity: Any activity which may result in soil erosion from water or wind and the movement of sediments into State waters or onto lands within the State, including, but not limited to clearing, grubbing, dredging, grading, excavating, transporting, and filling.
- C. Rolled Erosion Control Blanket (RECB): A temporary blanket consisting of degradable plastic netting that covers and is intertwined with a natural organic or manmade mulch; or, a jute mesh that is typically homogenous in design.
- D. Soil Reinforcement Matting: A permanent non-degradable, three dimensional plastic structure which can be filled with soil prior to planting; also known as turf reinforcement matting.

PART 2 – PRODUCTS

2.01 FERTILIZER AND LIME

- A. Fertilizer: Standard commercial grade grass fertilizer with a 10-10-10 (N-P-K) proportion.
- B. Lime: Natural, agricultural grade, ground or pulverized dolomitic limestone.

2.02 MULCH

- A. Dry straw, hay, or wood cellulose fiber of good quality, free of weeds and foreign matter detrimental to plant life.

2.03 GRASS SEED

- A. All grass seed shall be certified by the Georgia Department of Agriculture.
- B. All grass seed shall be in undamaged containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.
- C. Selected grasses shall be appropriate for the season and site as specified by the Manual.
- D. Selected seed shall be equal type and grade to the previously existing grass.
- E. The Engineer reserves the right to test, reject, or accept all seed before seeding.

2.04 BLANKETS AND MATTING

- A. All blanket and matting materials used shall be on the Georgia Department of Transportation Qualified Products List (QPL #62 for blankets, QPL #49 for matting).

2.05 SOD

- A. Sod shall be densely rooted, good quality grass, free from noxious weeds, and appropriate for the region it is to be planted.
- B. The sod shall contain practically all of the dense root system and not be less than one (1) inch thick.
- C. Sod shall be cut in uniform strips not less than twelve (12) inches in width and not less than twenty-four (24) inches in length.

2.06 TREES, SHRUBBERY, AND MISCELLANEOUS PLANTS

- A. All trees or shrubbery damaged by the Work shall be replaced with identical plants of the same general size and quality as previously existed.

2.07 PRODUCT REVIEW

- A. The Contractor shall provide the Engineer with a complete description of all products before ordering. The Engineer will review all products before they are ordered.

PART 3 – EXECUTION

3.01 GENERAL

- A. All areas that are disturbed by the Work, including trenches and ungraded cleared areas, except areas to be paved, shall be provided with a full stand of permanent grass.
- B. Concentrated flow areas, all slopes steeper than 2.5:1 and with a height of ten feet or greater, and cuts and fills within stream buffers, shall be stabilized with sod and/or the appropriate erosion control matting or blanket. Appropriate matting or blankets shall be specified by the Engineer on the Drawings.
- C. Where sod is required to match existing conditions, the Contractor shall install sod. No separate payment will be made for sod as it will be considered a part of

the final grassing bid item. Contractor will also be required to water sod until it is established.

- D. Important Note: The Contractor is expected to provide a full coverage of permanent grass before the project will be deemed complete. Substantial retainage will be withheld if the Contractor is not preparing seed bed, seeding, and watering throughout the project to ensure a substantial stand at project completion.**

3.02 PREPARATION

- A. Remove foreign materials, plants, roots, stones, and debris from surfaces to be seeded so that they are made smooth, uniform, and conform to the adjacent ground surface.
- B. Crusted soils shall be loosened to a minimum depth of 3 inches before fertilizer, lime, seed, or sod is applied.
- C. Apply fertilizer uniformly at a rate of 1,500 lbs./acre (35 lbs./1000 sq. ft.) unless otherwise directed by the Engineer.
- D. Apply lime uniformly at the rate of 2,000 lbs./acre (45 lbs./1000 sq. ft.) unless otherwise directed by the Engineer.
- E. Thoroughly mix lime and fertilizer with the first 2 to 4 inches of the soil.
- F. Roll to form a smooth, firm seedbed.

3.03 SEEDING

- A. Include both temporary and permanent (perennial) grasses in all seeding of permanent grass. For additional information regarding permanent (perennial) grassing or for mixtures with temporary grassing or other perennial grasses, see Chapter 6, Section II of the Manual.
- B. Apply seed evenly on freshly prepared and rolled seedbed with a cyclone seeder, drill, cultipacker seeder, or hydroseeder.
- C. Certified grass seed shall be applied at the rates and dates indicated in the following table:

Species	Rate Per 1,000	Rate Per Acre	PLANTING DATES
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	Sq. Ft.		Mountains Limestone Valley	Piedmont	Coastal
Bermuda, Hulled	0.2 lb.	10 lbs.	-----	4/1 – 5/31	3/15 – 5/31
Bermuda, Unhulled	0.2 lb.	10 lbs.	-----	10/15 – 2/28	11/1 – 1/31
Bermuda, Sprigs	0.9 cu. ft.	40 cu. ft.		4/1 – 6/15	4/1 – 5/31
	Sod plugs 3 ft. x 3 ft.				
Crown Vetch	0.3 lb.	15 lbs.	9/1 – 10/15	9/1 – 10/15	-----
Fescue, Tall	1.1 lbs.	50 lbs.	3/1 – 4/1 or 8/15 – 9/30	8/15 – 10/15 or 2/15 – 4/15	-----
Sericea Lespedeza, Scarified	1.4 lbs.	60 lbs.	4/1 – 5/31	3/15 – 5/31	3/1 – 5/15
Sericea Lespedeza, Unscarified	1.7 lbs.	75 lbs.	9/21 – 2/28	9/1 – 2/28	9/1 – 2/28
Weeping Lovegrass	0.1 lb	4 lbs.	4/1 – 5/31	3/15 – 5/31	3/1 – 5/31

PLEASE NOTE: The preceding grassing schedule indicated optimal planting dates. However, this schedule may be expanded by several weeks to indicate a permissible, but marginal, planting period.

- D. Cover seeds lightly with soil using a rake or cultipacker. On steep slopes, cover seeds by dragging spiked chains or other satisfactory method.

3.04 MULCHING

- A. Immediately apply mulch to all seeded areas that do not require matting or blankets.
- B. Apply mulch in accordance with Chapter 6, Section II of the Manual.
- C. Uniformly apply mulch so as to provide a 75% soil cover.
- D. Anchor all mulch. Acceptable anchoring methods include using a disk harrow, commercial tackifier, or netting with openings not exceeding the average size of the mulching material.

3.05 BLANKETS AND MATTING

- A. Contractor shall install blankets or matting according to manufacturer's specifications.

3.06 SODDING

- A. Sod shall be placed within 48 hours of cutting.
- B. Sod shall be moist when laid and placed on moist ground. Place sod by hand, beginning at the toe of slopes and working upwards. The length of the strips shall be perpendicular to the flow of surface water. All joints shall be tightly butted and end joints shall be staggered at least 12 inches. The sod shall be immediately pressed firmly into the ground by tamping or rolling. Fill all joints between strips with fine-screened soil.
- C. Anchor sod on slopes steeper than 3:1 with sod pegs or other approved method.

3.07 SHRUBBERY, TREES, AND MISCELLANEOUS PLANTS

- A. Plant shrubbery and trees in accordance with written recommendations of nursery supplying the plants, including mulching, fertilizing, and watering instructions.
- B. Provide an approved written guarantee from nursery for all transplanted shrubbery and trees for one year after final acceptance. Guarantee shall provide that failed plants be replaced. Guarantee shall provide for mulching, fertilizing and watering of replaced plants and shall extend the guarantee for one year from date of replacement.

3.08 WATERING

- A. Apply water with fine spray immediately after each area has been sown.
- B. Provide water as necessary to achieve final stabilization.

3.09 MAINTENANCE

- A. Maintenance shall consist of providing protection against traffic, watering to ensure uniform seed germination and to keep surface of soil damp, and repairing any areas damaged as a result of construction operations or erosion.
- B. If a poor stand of grass is present, re-seed as required to achieve final stabilization. Replace sod as needed.
- C. Control erosion at all times. Where damage occurs, repair landscaping work as quickly as practicable.

- D. After grass has been established, mow as often as needed to maintain height between 4 and 6 inches until final acceptance.

3.10 ACCEPTANCE

- A. Prior to acceptance, the Contractor shall produce a stand of perennial grass that has fully achieved “final stabilization” as defined in the latest edition of “The Manual for Erosion and Sediment Control in Georgia” and the NPDES General Permit for Stormwater Discharges Associated with Construction Activity.

END SECTION