

**CLAYTON COUNTY WATER AUTHORITY
MORROW, GA**



PROJECT MANUAL

FOR

BID NUMBER: 2023-WP-03

**TERRY R. HICKS WATER PRODUCTION PLANT (HICKS WPP)
BLOWER UPGRADE**

DECEMBER 2022

ISSUED FOR BID

**VOLUME 1 OF 3
DIVISIONS 00 – 01
PROCUREMENT, CONTRACTING, AND
GENERAL REQUIREMENTS**

ESI
ENGINEERING STRATEGIES, INC.

SECTION 00 01 01
PROJECT TITLE PAGE

PROJECT MANUAL
FOR
BID NUMBER: 2023-WP-03
TERRY R. HICKS WATER PRODUCTION PLANT (HICKS WPP)
BLOWER UPGRADE
DECEMBER 2022

Professional Engineer Certifications



John R. Fleck, PE

License No.: 24157

Divisions 01, 02, 03, 05, 07, 09, 10, 22, 40, and 43



S. N. Kulkarni, PE

License No.: 11265

Divisions 26 and 40

SECTION 00 01 10
TABLE OF CONTENTS

VOLUME 1 OF 3 – PROJECT MANUAL

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

Section	Title
00 01 01	Project Title Page
00 01 10	Table of Contents
00 01 15	List of Drawing Sheets
00 11 16	Advertisement for Competitive Sealed Bid
00 21 13	Instructions to Bidders
00 41 00	Bid Form
00 43 13	Georgia Bid Bond
00 43 39.02	SLBE Program – Bid Discount
00 45 13	Bidders Qualifications
00 45 19	Statement of Noncollusion
00 45 19B	Certification of Absence of Conflict of Interest
00 45 75	Georgia Security and Immigration Compliance Act of 2006
00 52 00	Agreement
00 61 13.13	Performance Bond
00 61 13.16	Payment Bond
00 72 00	General Conditions
00 73 00	Supplementary Conditions Exhibit 'A' – Additional Insurance Requirements

DIVISION 01 – GENERAL REQUIREMENTS

Section	Title
01 00 00	General Requirements
01 11 00	Summary of Work

Section	Title
01 14 19	Occupancy
01 21 16	Allowances
01 22 15	Measurement and Payment
01 25 00	Substitutions and Product Options
01 26 00	Contract Modification Procedures
01 29 73	Schedule of Values
01 29 76	Progress Payment Procedures
01 31 19	Project Meetings
01 32 16	Construction Schedule for Small Projects
01 32 33	Construction Photographs and Videos
01 33 23	Shop Drawings, Product Data, and Samples
01 35 13.53	Maintenance of Utility Operations During Construction
01 41 00	Regulatory Requirements
01 42 19	Codes and Standards
01 43 33	Manufacturer Services
01 45 00	Quality Control
01 45 29	Testing Laboratory Services
01 50 00	Temporary Facilities and Controls
01 56 16	Dust Control
01 57 00	Environmental and Property Protection
01 60 00	General Equipment Stipulations
01 65 00	Transportation and Handling
01 66 00	Storage and Protection
01 71 13	Mobilization
01 73 29	Cutting and Patching
01 74 23	Cleaning and Waste Management
01 77 00	Contract Closeout
01 78 23	Operation and Maintenance Data
01 78 33	Warranties and Bonds
01 78 39	Record Documents

Section	Title
01 78 43	Spare Parts
01 91 13	Equipment Testing and Facility Startup

VOLUME 2 OF 3 – TECHNICAL SPECIFICATIONS

DIVISION 02 – EXISTING CONDITIONS

Section	Title
02 41 16	Structure Demolition
02 42 11	Removal of Construction Material

DIVISION 03 – CONCRETE

Section	Title
03 11 00	Concrete Forming
03 15 00	Concrete Joint and Joint Accessories
03 21 00	Reinforcing Steel
03 30 00	Cast-in-Place Concrete
03 60 00	Grouting

DIVISION 05 – METALS

Section	Title
05 05 23	Metal Fastening
05 57 00	Miscellaneous Metals

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

Section	Title
07 92 01	Sealants and Caulking

DIVISION 09 – FINISHES

Section	Title
09 91 00	Painting

DIVISION 22 – FINISHES

Section	Title
22 04 00	Basic Materials and Methods
22 05 29	Hangers and Supports for Plumbing and Equipment

DIVISION 26 – ELECTRICAL

Section	Title
26 00 01	General Electrical Provisions
26 00 02	Basic Materials and Methods
26 05 19	Wire and Cable
26 05 26	Grounding
26 05 33.13	Conduit

DIVISION 40 – PROCESS INTERCONNECTIONS

Section	Title
40 12 13.21	Stainless Steel Air Piping
40 27 01	Process Piping Specialties

DIVISION 43 – PROCESS GAS AND LIQUID HANDLING, PURIFICATION, AND STORAGE EQUIPMENT

Section	Title
43 11 33.13	Positive Displacement Blower Packages

VOLUME 3 OF 3 – DRAWINGS

END OF SECTION

SECTION 00 01 15
LIST OF DRAWING SHEETS

Sheet	Title
G0	Cover
G1	General Notes, Legend & Abbreviations
C1	Overall Plan
M1	Existing Blower Plan
M2	Existing Blower Section
M3	Proposed Blower Plan
M4	Proposed Blower Section
E1	Electrical Layout and Single-Line Diagram
E2	Electrical Layout

END OF SECTION

SECTION 00 11 16
ADVERTISEMENT FOR COMPETITIVE SEALED BID

Clayton County Water Authority
1600 Battle Creek Road
Morrow, Georgia 30260

Name of Project: **Hicks WPP Blower Upgrade**

Separate sealed Bids for the construction of the **Hicks WPP Blower Upgrade** project will be received by the Clayton County Water Authority (CCWA) at 1600 Battle Creek Road, Morrow, Georgia 30260 until 10:00 a.m. local time, the **26th day of January 2023**, and then at said office opened and read aloud. Any bids received after the specified time will not be considered.

A non-mandatory pre-bid conference for the Project will be held on **Wednesday, January 11, 2023** at 10:00 a.m. local time at the Hicks WPP located at 1693 Freeman Road, Jonesboro, GA 30236 to discuss the Project. Attendance at the pre-bid conference is encouraged but not required.

Bidders are required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. A mandatory site visit for the Project will be held on **Wednesday, January 11, 2023** at 11:00 a.m. local time at the Hicks WPP located at 1693 Freeman Road, Jonesboro, GA 30236 to allow prospective bidders to see the existing conditions for the Project. Bids will not be accepted from Bidders who do not attend the Site visit. It is each Bidder's responsibility to sign in at the Site visit to verify their participation. Bidders must sign in using the name of the organization that will be submitting a Bid. During the visit, the Bidder must not disturb any ongoing operations at the Site.

The Project includes, but is not limited to, the following upgrades:

- A: Demolition of the existing blower
- B: Installation of two new blowers
- C: Modification to existing and installation of new air piping
- D: Modifications to existing MCC
- E: Installation of new blower control panel
- F: Connection to and modification to existing control system

The Bidding Documents, consisting of Advertisement for Competitive Sealed Bid, Instructions to Bidders, Bid Form, Bid Bond, Construction Contract, Performance Bond, Payment Bond, General and Supplementary Conditions, Specifications, Drawings, and Addenda may be examined at the main offices of the Owner at 1600 Battle Creek Road, Morrow, Georgia.

Copies of Bidding Documents are available from Engineering Strategies, Inc. by contacting Christine Lemoine at cleo@esi-ga.com and upon payment of \$50.00, nonrefundable, for download and printing access. All Bidders are required to purchase a set of the Bidding Documents. No partial sets will be sold. Hard copies of Bidding Documents are the responsibility of the Bidders.

By purchasing the Bidding Documents, purchaser agrees to allow company information (company name, address, phone and email) to be published as a "planholder". The Owner is not obligated to consider a Bidder's proposal if Bidder is not on record with Engineering Strategies, Inc. as having received a complete set of Bidding Documents from Engineering Strategies, Inc.

A list of planholders may be obtained by contacting Christine Lemoine at cleo@esi-ga.com.

Each Bid must be submitted on the prescribed Bid Form and accompanied by Bid Security as prescribed in the Instructions to Bidders, payable to the Owner in an amount not less than 5 percent of the Bid Amount, and a letter from a surety company stating they are licensed to conduct business in the State of Georgia. Failure to supply the bond or to sign the proposal will be grounds for rejection.

In order to perform public work, the Bidder and its subcontractors, prior to award of Contract, shall hold or obtain such licenses as required by state statutes, and federal and local laws and regulations. All firms must be licensed in Georgia and have a registered agent in Georgia.

CCWA encourages Small Local, Minority, and Women-Owned businesses to participate and respond to this bid request.

All questions related to the Project shall be submitted by email no later than 10:00 a.m., local time, on **Friday, January 13, 2023** to John Fleck at jfleck@esi-ga.com. Questions, if answered, will be addressed by Addenda to the Contract Documents distributed to all planholders by Engineering Strategies, Inc. Receipt of any Addenda or amendment to this Advertisement for Bids shall be acknowledged, in writing, and shall be submitted with the Bid.

Owner shall make an award, if an award is made, to the lowest responsible responsive Bidder.

The successful Bidder will be required to furnish the additional Bonds and Insurance prescribed in the Contract Documents.

Owner's right is reserved to reject all Bids or any Bid not conforming to the intent and purpose of the Bidding Documents.

Dated this 14th day of December 2022.

Clayton County Water Authority

Mr. Robin Malone, Chair

SECTION 00 21 13
INSTRUCTIONS TO BIDDERS

1.01 Instructions

- A. Bids will be received by the Clayton County Water Authority (herein called the “Owner”), at 1600 Battle Creek Road, Morrow, Georgia 30260 until 10:00 a.m., local time, 26th day of January 2023.
- B. Each Bid must be submitted in a sealed envelope, addressed to the Clayton County Water Authority, 1600 Battle Creek Road, Morrow, Georgia 30260.
- C. Each sealed envelope containing a Bid must be plainly marked on the outside as Bid for the Hicks WPP Blower Upgrade, and the envelope should bear on the outside the name and address of the Bidder, and the Bidder’s utility or general contractor’s license number if applicable. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed to the Owner at 1600 Battle Creek Road, Morrow, Georgia 30260.
- D. The Owner may reject any and all Bids. Any Bid may be withdrawn prior to the above-scheduled time for the opening of Bids or authorized postponement thereof. Any Bid received after the time and date specified shall not be considered. No Bidder may withdraw a Bid within 60 days after the actual date of the opening thereof. Should there be reasons why the Contract cannot be awarded within the specified period; the time may be extended by mutual agreement between the Owner and Bidder.
- E. The Advertisement for Competitive Sealed Bids is incorporated by reference as if fully set out herein.

1.02 Defined Terms

- A. Terms used in these Instructions to Bidder have the meanings assigned to them in the General Conditions.
- B. Certain additional terms used in the Bid Documents have the meanings indicated below which are applicable to both the singular and plural thereof:
 - 1. Bidder: One who submits a Bid to Owner as distinct from a subbidder, who submits a Bid to a Bidder. Throughout these Bidding Documents, the words Bidder and Bid will be used interchangeably with the terms Proposer and Proposal.
 - 2. Apparent Low Bidder: That Bidder whose Bids, as offered in the Bid Form, represent the lowest total as determined by the Base Bid.
 - 3. Total Base Bid Price: Includes Bid for the Lump Sum Work plus extended total for the Allowances.
 - 4. Successful Bidder: Lowest, responsible responsive Bidder to whom Owner (on the basis of Owner’s evaluation as hereinafter provided) makes an award.

1.03 Copies of Bidding Documents

- A. Copies of Bidding Documents are available from Engineering Strategies, Inc. by contacting Christine Lemoine at cleoine@esi-ga.com and upon payment of \$50.00, nonrefundable, for download and printing access. All Bidders are required to purchase a set of the Bidding Documents. No partial sets will be sold. Hard copies of Bidding Documents are the responsibility of the Bidders.
- B. By purchasing the Bidding Documents, purchaser agrees to allow company information (company name, address, phone and email) to be published as a “planholder”. The Owner is not obligated to consider a Bidder's proposal if Bidder is not on record with Engineering Strategies, Inc. as having received a complete set of Bidding Documents from Engineering Strategies, Inc.
- C. Complete sets of Bidding Documents must be used in preparing Bids. Neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from use of incomplete sets of Bidding Documents.
- D. Bidding Documents made available on the above terms are only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

1.04 Pre-Bid Conference and Site Visits

- A. A non-mandatory pre-bid conference will be held at the time and location indicated in Section 00 11 16 Advertisement for Competitive Sealed Bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference; however, attendance at this conference is not required to submit a Bid.
- B. A mandatory site visit will be held at the times and location indicated in Section 00 11 16 Advertisement for Competitive Sealed Bid. Representatives of Owner and Engineer will be present to help sign-in Bidders and provide a general tour of the facility. **Bids will not be accepted from Bidders who do not attend the site visit.** It is each Bidder's responsibility to sign in at the site visit to verify its participation. Bidders must sign in using the name of the organization that will be submitting a Bid.
- C. Engineer will transmit to prospective Bidder of record such Addenda as Engineer considers necessary in response to questions arising during the conference. Oral statements may not be relied upon and will not be binding or legally effective.

1.05 Preparation of Bid

- A. All Bids must be made on the separate Bid form furnished with these Contract Documents. Do not write on or remove pages from the Specification book. All blank spaces for Bid prices must be filled in, in ink or typewritten, and the Bid form must be fully completed and executed when submitted. Only one copy of the Bid form is required.

- B. Bid prices must be written in both words and numerals where required; in the event of a conflict, the words shall govern.
- C. The cash allowances represent the Owner's estimate of the cost of the various products and services listed in the Bid Form as Cash Allowances. The Contract Price will be adjusted by Change Order to reflect the actual cost.
- D. Bids signed for a corporation shall have the correct corporate name thereof as listed with the Office of the Secretary of State of Georgia and shall be executed by the president, vice-president or other authorized officer of the corporation and attested by the secretary, assistant secretary, or other authorized officer of the corporation with the corporate seal affixed thereto. Bids by any other type of business entity shall be so executed as to bind that particular type of business entity to the full extent allowed under all applicable provisions of Georgia and United States law. A conditional or qualified Bid will not be accepted.
- E. The Bid shall contain an acknowledgement of receipt of all Addenda; the numbers of which shall be filled in on the Bid Form. Failure to acknowledge receipt may cause Bid to be considered in nonconformance.
- F. The address and telephone number for communications regarding the Bid shall be shown.
- G. Bidder shall comply with the Bid Form requirement for identification of Manufacturers or Suppliers of certain equipment, product, or systems.
- H. The Bid shall contain evidence of Bidder's authority and qualification to do business in the state of Georgia. Bidder's Georgia Utility Contractor license number for the state of Georgia shall also be shown on the Bid Form.

1.06 Conditions of Work

- A. The Contract Documents contain the provisions required for the construction of the Project. Information obtained from an officer, agent, or employee of the Owner, Engineer, or any other person shall not affect the risks or obligations assumed by the Contractor or relieve the Contractor from fulfilling any of the conditions of the Contract. Each Bidder is responsible for inspecting the Site and for reading and being thoroughly familiar with the Contract Documents. A Bidder shall in no way be relieved from any obligation with respect to the Bid by the failure or omission of the Bidder to be so familiar.
- B. It is each Bidder's responsibility, before submitting a Bid, to:
 - 1. Examine thoroughly the Bid Documents and other related data identified in the Bid Documents.
 - 2. Inspect the Site to become familiar with and satisfy Bidder as to the general, local, and site conditions that may affect cost, progress, performance, or furnishing of the work.

3. Consider federal, state, and local laws and regulations that may affect cost, progress, performance, or furnishing of the work.
 4. Study and carefully correlate Bidder's knowledge and observations with the Bid Documents and such other related data.
 5. Promptly notify Engineer of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in or between the Bid documents and such other related documents.
- C. Reference is made to the Supplementary Conditions for identification of:
1. Those Reports, if any, of explorations and tests of subsurface conditions at the Site which have been utilized by Engineer in preparation of the Bid Documents.
 2. Those Drawings, if any, of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities) which are at or contiguous to the site which have been utilized by Engineer in preparation of the Bid documents.
 3. Copies of such Reports and Drawings that are not included with the Bid Documents may be examined at the Clayton County Water Authority main offices at 1600 Battle Creek Road, Morrow, Georgia during regular business hours.
- D. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Contract Documents due to differing or unanticipated conditions appear in Article 5 of the General Conditions.
- E. Before submitting a Bid, each Bidder will be responsible to make or obtain such additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise and which may affect cost, progress, performance, or furnishings of the work and which Bidder deems necessary to determine its Bid.
- F. On request, Owner will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.
- G. Reference is made to the General Requirements for identification of the general nature of work that is to be performed at the Site by Owner or others and that relates to work for which a Bid is to be submitted. 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 work by others.
- H. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this article; that without exception the Bid is premised upon performing and furnishing the work required by the Bid Documents and applying the specific means, methods, techniques, sequences, or procedures of

construction (if any) that may be shown or indicated or expressly required by the Bid Documents; that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bid Documents, and the written resolution thereof by Engineer is acceptable to Bidder; and that the Bid Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the work and for preparing the Bid.

- I. All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout performance of the work.

1.07 Reputation of Bidder

- A. The Owner may make such investigations as it deems necessary to further determine the ability of the Bidder and its Subcontractors to perform the work. The Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request.
- B. To further demonstrate qualifications to perform the work, Bidder shall submit, within five days of Owner's request, written evidence such as financial data, previous experience, present commitments, and other such data as may be called for below.
- C. Each Bid must contain evidence of Bidder's qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to Contract award.
- D. Nothing indicated herein will prejudice Owner's right to seek additional pertinent information as is provided in Award of Contract.
- E. License Requirements: In order to perform public work, Bidder and its Subcontractors, where required by law, prior to award of Contract, shall hold or obtain a Utility Contractors License.
- F. Nonresident Bidders: Pursuant to Code of Georgia 48-13 the following shall be completed prior to Award:
 1. Register with Commissioner of Labor and pay fee.
 2. Execute and file with Commissioner of Labor, Bond worth 10 percent of Contract, conditioned that state and local taxes will be paid.
 3. Appoint, in writing, Secretary of State to be lawful agent upon whom all lawful process, proceedings or notices may be served.
 4. Comply with any and all other requirements of Georgia law applicable to nonresident contractors.
- G. Contractor Qualifications and Experience: The Bidder must satisfy to the reasonable satisfaction of the Owner that it possesses sufficient qualifications, experience and resources, including financial resources, to successfully perform all of its obligations under the Contract. Such experience and qualifications shall relate to both the Bidder and to any individuals it proposes to assign to the Project. In addition to the Corporate Experience

Form which must be executed, notarized, and submitted with its Bid, any Bidder shall also provide such other reasonable information as may be subsequently requested by Owner in order to evaluate whether or not the Bidder is qualified and responsible to perform the Contract (see Section 00 45 13 – Bidder's Qualifications).

1.08 Bid Security

- A. Each Bid must be accompanied by a Bid Bond payable to the Owner for five percent of the project Base Bid. In the alternative, Contractor may deposit with Owner a cashier's check, certified check or cash in an amount equal to five percent of the project Base Bid, said deposit made under the same conditions as the furnishing of a surety bond. Approval of the Bid Security by Owner shall be a condition precedent to the award of the Contract
- B. Attorneys-in-fact who sign Bid Bond or Payment Bonds and Performance Bonds must file with each Bond a certified and effective dated copy of their power of attorney.

1.09 Addenda and Interpretations

- A. No interpretations of the meaning of the Contract Documents will be made orally to any Bidder. Every request for such interpretations should be made in writing and addressed to Engineer of Record or designee at jfleck@esi-ga.com. To be given consideration, such requests must be received by **10:00 a.m. on January 13, 2023** to permit written distribution of the response to all Bidders.

1.10 Material Suppliers and Subcontractors

- A. Upon execution of the Contract, Contractor shall submit to Owner the identity of all Subcontractors, Suppliers, and other person and organizations proposed for those portions of the work identified in paragraph 7.06. of the General Conditions. Information shall include an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, person, or organization.
- B. If Successful Bidder declines to make a substitution of Subcontractor, Supplier, person, or organization acceptable to Owner, as required by paragraph 7.05 E. of the General Conditions, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, and other persons and organizations. Declining to make requested substitutions will not constitute grounds for sacrificing the Bid security of any Bidder. Any Subcontractor, Supplier, other person, or organization listed and to whom Owner or Engineer does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in the General Conditions paragraph 7.05 B.

1.11 MBE/WBE/DBE Participation

- A. It is the policy of the Clayton County Water Authority (CCWA) to promote award of sub-agreements for goods and/or services to qualified minority, women and disadvantaged-owned businesses. Bidders are encouraged to solicit minority, women and disadvantaged-owned businesses whenever they are potential sources.
- B. Bidders are encouraged to utilize the services and assistance of the U.S. Small Business Administration (SBA), and the Office of the Department of Commerce Minority Business Development Agency (MBDA). These agencies can provide assistance in securing the names of qualified minority, women and disadvantaged-owned businesses.
- C. The Georgia Department of Transportation (DOT) has established a list of qualified Disadvantaged Business Enterprises. Information is available online at: <http://www.dot.ga.gov/PS/Business/DBE>
- D. The successful bidder will be asked to provide, along with his Request for Payment each month, a list of qualified MBE/WBE/DBE businesses utilized on this Project and dollar amounts of MBE/WBE/DBE contracts.

1.12 SLBE Participation

- A. Clayton County Water Authority (CCWA) has implemented a Small Local Business Enterprise Program to promote full and open competition in all government procurement and purchasing.
- B. Bid Incentives for participation of Small Local Business Enterprises (SLBEs) are set on a contract-by-contract basis for each specific prime contract with subcontracting possibilities.
- C. CCWA wants to ensure that Bidders are non-discriminatory in their process of selecting subcontractors. CCWA also wants to encourage Bidders to utilize small, minority or woman-owned businesses whenever possible.
- D. The Bid Incentive for this procurement is a Bid Discount. See Section 00 43 39.02 for details.

1.13 Nondiscrimination

- A. No Bidder or Subcontractor, nor any person on its behalf, shall refuse to hire, employ, or license, nor bar or discharge from employment, any individual between the ages of 40 and 70 years, solely upon the ground of age, when the reasonable demands of the position do not require such an age distinction, provided that individual is qualified physically, mentally, and by training and experience to perform satisfactorily the labor assigned to him or for which he applies.

1.14 Wage Rates

- A. The work under these Bid documents is to be paid for by public funds; therefore, minimum prevailing wage rates published by the state are applicable.

1.15 Contract Documents

- A. All elements of the Contract Documents except Addenda are itemized by the Tables of Contents and Index to Drawings. Each Bidder is responsible for ascertaining that the Bidder has a complete set of Documents and that each page and sheet thereof applies to the correct project and bears the correct date. Neither the Owner nor the Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents.

1.16 Submission of Bids

- A. Bid Form and attachments may be photocopied for submission of Bids.
- B. Submit Bids not later than the time prescribed, at the place, and in the manner set forth in the Advertisement for Bids. Enclose Bids in an opaque sealed envelope, marked with the Project title and name and address of Bidder and accompanied by the Bid security and other required documents.
- C. If the Bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it.
- D. Bids must be made on the prescribed Bid Form provided and submitted with the attachments listed below.
- E. Bidders shall complete and submit the following attachments with its Bid:
 - 1. Section 00 43 13 Georgia Bid Bond
 - 2. Section 00 45 13 Bidders Qualifications
 - 3. Section 00 45 19 Statement of Noncollusion
 - 4. Section 00 45 19B Certification of Absence of Conflict of Interest
 - 5. Section 00 45 75 Georgia Security and Immigration Compliance Act of 2006
 - 6. All Addenda issued during the bidding period, signed by the Bidder
- F. Only one Bid from any individual, firm, partnership, or corporation, under the same or different names, will be considered. Should it appear to the Owner that any Bidder is interested in more than one Bid for Work contemplated, all Bids in which such Bidder is interested will be rejected.
- G. Information submitted by the Bidder in the Bid process shall be subject to disclosure after Bid award in accordance with the Georgia Open Records Act. Proprietary information must be identified and be accompanied by a signed affidavit outlining the redacted information. Entire Bids may not be deemed proprietary.

1.17 Contract Award

- A. Bids may be modified or withdrawn by an appropriate document duly executed (in the same manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.
- B. If within 48 hours after Bids are opened, any Bidder files a duly signed, written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of 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, that Bidder will be disqualified from further consideration on the work to be provided under the Contract Documents.
- C. If the Contract is to be awarded, Owner will give Successful Bidder Notice of Award within 60 days after the day of the Bid opening.
- D. Owner reserves its right to reject any or all Bids, including without limitation the rights to reject any or all nonconforming, nonresponsive, unbalanced or conditional Bids, and to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Owner. Owner also reserves the right to waive all informalities not involving price, time, or changes in the work. Discrepancies in the quantity multiplied by unit price and the extended total amount will be resolved in favor of the quantity multiplied by unit price. 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.
- E. In evaluating Bids, Owner will consider the qualifications of Bidders, whether or not the Bids comply with the prescribed requirements, and unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award. Owner shall have the right to accept alternates in any order or combination, unless otherwise provided in the Bid Documents.
- F. The Contract will be awarded to the successful Bidder. The selected firm will be given written notification of being selected and the Owner reserves the right to negotiate however a contract must be executed with the selected firm prior to the beginning of the actual services. In general, the contract will comply with applicable laws and standard provisions and shall contain the following terms: Detailed scope of services, schedule for providing services, and cost of services. The Bidder to whom the award is made will be notified at the earliest possible date. The Owner reserves the right to reject any and all Bids and to waive any informality in Bids received whenever such rejection or waiver is in its interest.
- G. In the event that, after the acceptance of a Bid by the Board of Directors of the CCWA, any unsuccessful Bidder wishes to contest such action, a written "Notice of Contest" must

be filed with the General Manager no later than close of business on the 5th business day after the selection of successful Bidder by the Board. Said Notice shall be an express condition precedent to the right of any Bidder to challenge or contest any award or to otherwise contend that it should have been awarded the contract. Failure to timely file such notice shall forever preclude the filing of a contest of the award, or any civil action in the courts of the state of Georgia or of the United States.

- H. The successful Bidder to whom the Contract is awarded will be required to execute the Contract and obtain the Performance Bond and Payment Bond in the amount not less than 100% of the contract amount and Certificates of Insurance as required herein within 10 calendar days from the date when Notice of Award is delivered to that Bidder. Approval of the Payment Bond, Performance Bond, and Certificates of Insurance by the Owner shall be a condition precedent to execution of the Contract by the Owner. In the event the Contract Price is adjusted by appropriate Change Order, the penal sum of the surety on the Payment Bond and the Performance Bond shall be deemed increased by like amount. The Notice of Award shall be accompanied by the Contract and Bond forms to be executed. In case of failure of the successful Bidder to execute the Contract, the Owner may at its option consider the Bidder in default, in which case the Bid Bond accompanying the Bid shall become the property of the Owner.
- I. The Owner, within 10 days of receipt of an acceptable Certificates of Insurance, Performance Bond, Payment Bond and Contract signed by the successful Bidder, shall sign and return to the Bidder an executed duplicate of the Contract and the Bid Bond. Should the Owner not execute the Contract within the allowed period, the successful Bidder may give written notice of intent to withdraw the signed Contract. If 10 days after the Owner has received notice of intent to withdraw by the successful Bidder, the Owner has not executed the Contract; the Bidder may be written notice withdraw the signed Contract without further liability on the part of either party. Such notice of withdrawal shall be effective upon receipt of the notice by the Owner, and the Owner immediately thereupon shall return to the successful Bidder the Bid Bond.
- J. The Notice to Proceed shall be issued within 30 days of Owner's receipt of the Contract executed by the Bidder. Should there be reasons why the Notice to Proceed cannot be issued within such period; the time may be extended by mutual agreement between the Owner and Contractor. If the Notice to Proceed has not been issued within the allowed time or within the period mutually agreed upon, the Contractor may terminate the Contract without further liability on the part of either party.

1.18 Preconstruction Conference

- A. The attention of Bidders is particularly called to the preconstruction conference that will be held with the successful Bidder and all known subcontractors upon the issuance of a Notice to Proceed. This conference will cover provisions pertaining to schedules, payment requests, submittals, and other items related to the Contract.

1.19 Georgia Security and Immigration Compliance Act of 2006

- A. Pursuant to the Georgia Security and Immigration Compliance act of 2006, the Contractor understands and agrees that compliance with the requirements of O.C.G.A.13-10-91 and Georgia Department of labor Rule 300-10-02 are conditions of this agreement. The Contractor further agrees that such compliance shall be attested by the Contractor and any of his subcontractors by execution of the appropriate Affidavit and Agreement included after the Agreement Form of these documents.

END OF SECTION

SECTION 00 41 00

BID FORM

ARTICLE 1 – BID RECIPIENT

1.01 Bid of _____ (hereinafter “Bidder”), organized and existing under the laws of the State of _____, doing business as _____ (insert “a corporation,” “a partnership,” or “an individual” or such other business entity designation as is applicable). Submitted to the Clayton County Water Authority (hereinafter “Owner”).

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS AND CERTIFICATIONS

2.01 In compliance with your Advertisement for Competitive Sealed Bid, Bidder hereby proposes to perform all Work for the **Hicks WPP Blower Upgrade** in strict accordance with the Contract Documents as enumerated in the Advertisement for Competitive Sealed Bid, within the time set forth therein, and at the prices stated below.

2.02 In submitting this bid, Bidder certifies that the Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

Site Visit

(insert date)

2.03 By submission of this Bid, Bidder certifies, and in the case of joint Bid each party thereto certifies as to the party’s own organization that this Bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor. Bidder also certifies compliance with the Instructions to Bidders.

2.04 In submitting this Bid, Bidder acknowledges and accepts Contractor’s representations as more fully set forth in Section 00 52 00 Agreement.

2.05 In submitting this Bid, Bidder certifies Bidder is qualified to do business in the state where the Project is located as required by laws, rules, and regulations or, if allowed by statute, covenants to obtain such qualification prior to contract award.

2.06 In submitting this Bid, Bidder accepts all terms and conditions of the Bidding Documents.

2.07 Contract Execution: The undersigned Bidder agrees, if this Bid is accepted, to enter into an Agreement with Owner on the form included in the Bidding Documents to perform and furnish Work as specified or indicated in the Bidding Documents for the Contract Price derived from the Bid and within the Contract Times indicated in the Agreement and in accordance with the other terms and conditions of the Bidding documents.

- 2.08 Insurance: Bidder further agrees that the Bid amount(s) stated herein includes specific consideration for the insurance coverages specified in Section 00 72 00 General Conditions and Section 00 73 00 Supplementary Conditions.
- 2.09 Liquidated Damages: Bidder accepts the provisions in Section 00 52 00 Agreement as to liquidated damages.
- 2.10 Sales and Use Taxes: Bidder agrees to cooperate with Owner in accordance with the provisions in Section 00 73 00 Supplementary Conditions paragraph 7.10E.
- 2.11 Addenda: The Bidder hereby acknowledges that he has received the following Addenda to these Specifications (Bidder shall insert No. of each Addendum received) and agrees that all addenda issued are hereby made part of the Contract Documents, and the Bidder further agrees that his Bid includes all impacts resulting from said Addenda.

Addendum No.	Date Received	Addendum No.	Date Received

ARTICLE 3 – BASIS OF BID

Bidder will complete the Work in accordance with the Contract Documents for the amount as listed below. Total bid amount shall be shown in words and numbers. In case of discrepancy, the bid amount shown in words will govern.

3.01 Bid Item 1 - Lump Sum Bid for Blower Package Replacement

Bidder agrees to accept as full payment for the **Lump Sum Work** proposed within the Bidding Documents, based upon the undersigned’s own estimate of quantities and costs and including taxes, overhead, and profit, the following:

LUMP SUM BID PRICE: \$ _____

3.02 Bid Item 2 - Cash Allowances

Bidder agrees that the following allowance, as further described in Measurement and Payment for additional work, will be furnished and paid for on a cash allowance basis.

Item	Description	Supplier	Specification *	Cash Allowance
2.1	Field and Laboratory Testing		01 45 29	\$10,000
2.2	System Integration	MR Systems		\$25,000

3.03 Bid Item 3 - Contingency Allowances

Bidder agrees that the following allowance, as further described in Measurement and Payment for additional work, will be furnished and paid for on a contingency allowance basis.

Item	Description	Contingency Allowance
3.1	Unforeseen Work Elements	\$50,000

Bidder acknowledges that the total of the amounts shown above are estimated amounts to be included in the Base Bid, and that final payment will be based on actual costs as determined in conformance with the Bidding Documents and as authorized by Change Order.

3.04 Total Base Bid

TOTAL BASE BID PRICE (Sum of Items 1, 2, and 3): \$ _____

TOTAL BASE BID WRITTEN IN WORDS

_____ Dollars and _____ Cents

ARTICLE 4 – LIST OF SUBCONTRACTORS

4.01 The Bidder submits the following list of Subcontractors to be used in the performance of work to be done on said Project.

AREA OF SPECIALIZATION	SUBCONTRACTOR Or "Self-Perform"
Electrical	
I&C System Integrator	MR Systems
S.S. Pipe Welding	

- A. The list of Subcontractors and all responsibilities of all disciplines shall be based on requirements of the Contract Documents.
- B. It is understood and agreed that, if awarded a Contract, the Contractor will not make any additions, deletions, or substitutions to this list without the consent of the Owner.

ARTICLE 5 – EQUIPMENT / MATERIAL MANUFACTURERS

5.01 Owner Selected Equipment/Supplier Schedule

The Bidder shall provide identification of the equipment manufacturer being supplied for each component listed below. See specifications for approved manufacturers for each component.

Item	Component	Specification Section	Selected Manufacturer
1	Positive Displacement Blowers	43 11 33.13	A: Aerzen B: Gardner Denver C: _____

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and completed and ready for final payment in accordance with Section 00 72 00 General Conditions paragraph 15.06 on or before the dates or within the number of calendar days indicated in Section 00 52 00 Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated and special damages in the event of failure to complete the Work within the Contract Times.

ARTICLE 7 – SURETY

7.01 If Bidder is awarded a construction contract from this Bid, the surety who provides the Performance and Payment Bonds shall be:

_____ whose address is

Street City State Zip

ARTICLE 8 – BID SUBMITTAL

8.01 This Bid submitted on _____, 20__ by:

Corporation Name: _____

(State of Incorporation)

By: _____
(Signature – Attach evidence of authority to sign)

Name and Title: _____
(Typed or Printed)

(CORPORATE SEAL)

Attest _____
(Secretary) (Date)

Georgia Utility
Contractor's License
Number: _____
(Successful Bidder will be required to hold a valid Georgia
Utility Contractor's License)

Business Address: _____

Phone No.: _____

E-mail: _____

Website: _____

END OF SECTION

**SECTION 00 43 13
GEORGIA BID BOND**

BOND NO. _____

KNOW ALL MEN BY THESE PRESENTS, that _____

herein after called the PRINCIPAL, and _____

a corporation duly organized under the laws of the State of _____

having its principal place of business at _____

_____ in the State of _____

and authorized to do business in the State of Georgia as SURETY, are held and firmly bound unto Clayton County Water Authority, as OWNER, hereinafter called the OBLIGEE, in the amount of five percent (5%) of the Total Bid Amount for the payment for which we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS BOND IS SUCH THAT:

WHEREAS, the Principal is herewith submitting his or its Bid for _____ and said Bid, by reference thereto, being hereby made a part hereof.

WHEREAS, the PRINCIPAL contemplates submitting or has submitted a Bid to the OBLIGEE for the furnishing of all labor, materials (except those to be specifically furnished by the Owner), equipment, machinery, tools, apparatus, means of transportation for, and the performance of the work covered in the Bid and the documents, entitled: _____.

WHEREAS, it was a condition precedent to the submission of said Bid that a cashier's check, certified check, or Bid Bond in the amount of five percent (5%) of the Total Bid Amount be submitted with said Bid as a guarantee that the Bidder would, if awarded the Contract, enter into a written Contract with the Owner for the performance of said

Contract, within 10 consecutive calendar days after written notice having been given of the award of the Contract.

NOW THEREFORE, the conditions of this obligation are such that if the PRINCIPAL within 10 consecutive calendar days after written notice of such acceptance, enters into a written Contract with the OBLIGEE and furnishes a Performance Bond and Payment Bond in an amount equal to 100 percent of the contract amount, satisfactory to the Owner, then this obligation shall be void; otherwise the sum herein stated shall be due and payable to the OBLIGEE and the SURETY herein agrees to pay said sum immediately upon demand of the OBLIGEE in good and lawful money of the United States of America, as liquidated damages for failure thereof of said PRINCIPAL.

Signed and sealed this _____ day of _____ 20_____.

PRINCIPAL

By _____

SURETY

By _____
Attorney-In-Fact

END OF SECTION

SECTION 00 43 39.02
SLBE PROGRAM - DISCOUNT

1.01 Program Overview

- A. Clayton County Water Authority (CCWA) implemented a Small Local Business Enterprise Program to promote full and open competition in all government procurement and purchasing.
- B. The SLBE program provides an additional race-and gender-neutral tool for the Authority to use in its efforts to ensure that all segments of its local business community have a reasonable and significant opportunity to participate in Authority Solicitations.
- C. SLBEs must perform a commercially useful function, which means performance of provision of real and actual services under the contract or subcontract with CCWA. Factors such as the nature and amount of the work subcontracted; whether the SLBE has the skill and expertise to perform the work for which it has been certified; whether the SLBE actually performs, manages or supervises the work; and whether the SLBE intends to purchase commodities and/or services from a non-SLBE and simply resell them will be considered in determining if the SLBE is performing a commercially useful function.
- D. SLBE in CCWA refers to a locally-based small business which meets the following criteria:
 - 1. Independently owned and operated business concern whose average annual gross receipts for the previous three years must not exceed: (1) Construction Firms – \$18,250,000; (2) Professional Services Firms – \$5,500,000; (3) Architectural Firms – \$3,750,000; (4) Engineering Firms – \$7,500,000, and (5) Goods and Services – less than 250 employees.
 - 2. Locally based, meaning located and operating in Clayton County or the ten (10) counties of Cherokee, Cobb, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry, Rockdale and Spalding for at least one year.
 - 3. Note: Complete CCWA SLBE Certification Requirements are listed on the Provisional and General Certification Applications; <https://www.ccwa.us>. To be considered a CCWA SLBE Certified Firm, the vendor shall complete the application process by the bid submission deadline.
- E. To encourage participation in contracting regardless of company size, the Authority provides bidders with Bid Incentives to ensure that small businesses maintain a competitive advantage in the Authority's bidding process. The Authority's three Bid Incentives; Bid Discounts, Preference Points, and SLBE Goal Incentives utilization are determined on a solicitation by solicitation basis.

1.02 SLBE Incentive Type

- A. The purpose of this section is to communicate the use of an SLBE Incentive (Bid Discount, Preference Points, SLBE Goal) in the solicitation and provide instructions or requirements of the intended SLBE Incentive.
- B. This solicitation offers the following SLBE Incentive:
1. Bid Discount
 - a. Bid discounts are incentives that allow an original bid amount to be discounted for evaluation purposes in determining the lowest responsive, responsible bidder, while the original bid amount will be the basis for contract award. Bid Discounts will be applied to CCWA certified SLBE prime bidders only. The use of certified SLBE sub-contractors will not establish eligibility to receive Bid Discounts. In the event of a tie bid between a discounted bidder and a non-discounted bidder, the discounted bidder (SLBE) will be recommended for the contract.
 - b. The calculation of SLBE tiered bid discounts shall be as follows:
 - 1) 10% for SLBE's in Clayton County.
 - 2) 7.5% for SLBE's within the 10 counties: Cherokee, Cobb, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry, Rockdale and Spalding.
 - 3) *Example: A \$100,000 bid with a 7.5% bid discount would be evaluated at \$92,500. However, \$100,000 would be paid to the successful bidder.*

1.03 SLBE Conclusion

- A. A bidder does not have to be an SLBE to participate in a bid where an SLBE Bid Discount Incentive is offered.
- B. By signing the bid, the bidder is certifying that he/she has complied with the requirements of this program. Contact the Small Business Procurement Coordinator at ccwa_slbe_program@ccwa.us for more information on certification requirements for CCWA Certified SLBE Firms.

END OF SECTION

SECTION 00 45 13
BIDDERS QUALIFICATIONS

ARTICLE 1 – REQUIREMENTS

- 1.01 Per Section 00 21 13 Instructions to Bidders, paragraph 1.07.G, the Bidder must be able to demonstrate minimum contractor corporate experience as a condition of being deemed a responsible Bidder.
- A. To assess the Bidder's qualifications, a Corporate Experience Form and Project Information Forms must be submitted with the Bid.
 - B. Bidder to submit as many Project Information Forms as necessary to verify the minimum contractor corporate experience.
 - C. All questions must be answered and the data given must be clear and comprehensive.

ARTICLE 2 – SUPPLEMENTS

- 2.01 The supplement listed below, following "END OF SECTION", is part of this Specification.
- A. Corporate Experience Form
 - B. Project Information Form

END OF SECTION

CORPORATE EXPERIENCE FORM

(Page 1 of 3)

If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information desired. Attach all additional sheets to this statement. Please type all information. **This form must be notarized.**

1. Name of Bidder: _____

2. Permanent main office address, phone numbers, and email address of primary contact:

3. When organized: _____

4. If a Corporation, where incorporated: _____

5. How many years has the Bidder been engaged in the contracting business under its present firm or trade name? _____

6. General description of type of work performed by the Bidder's company: _____

7. Has the Bidder ever failed to complete any job awarded to it? If so, please provide details including where and why. _____

8. Has the Bidder ever failed to complete a job on time? If so, please provide details including how late was it?

9. Has the bidder ever been assessed liquidated damages? If so, please provide details including where and why.

CORPORATE EXPERIENCE FORM

(Page 2 of 3)

10. Has the bidder ever been in litigation or arbitration with the Owner. If so, please provide details including where and why.

11. Has the Bidder ever defaulted on a contract? If so, please provide details including where and why? _____

12. Has the Bidder ever refused to sign a Contract at the original bid price? If so, please provide details including where and why? _____

13. Names, position and years of experience of the principal members of the Bidder's organization, including officers:

Name	Position	Years of Experience
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

CORPORATE EXPERIENCE FORM

(Page 3 of 3)

14. The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the Owner in verification of the recitals comprising this Statement of Bidder's Qualifications.

I, _____, certify that I am _____ of the Bidder, and that the answers to the foregoing questions and statements contained therein are true and correct.

Bidder:

By:

(name signed)

(name printed or typed)

Title:

Date:

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

Notary Public:

(name signed)

(name printed or typed)

Commission Expires:

(Date)

(SEAL)

PROJECT INFORMATION FORM

(Page 1 of 2)

Complete a "Project Information Form" for each project required to verify Bidder's corporate experience. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information desired. Attach all additional sheets to this statement. Please type all information.

Applicant Name: _____

Project Title: _____

Project Location: _____

Project Manager: _____

Superintendent: _____

Project Description: _____

Project Owner:

Owner Name: _____

Contact Person: _____

Phone Number: _____

Design Firm:

Company Name: _____

Contact Person: _____

Phone Number: _____

Construction Contract Administration:

Company Name: _____

Contact Person: _____

Phone Number: _____

PROJECT INFORMATION FORM

(Page 2 of 2)

Contract:

Bid Date: _____

Bid Price / Contract Amount: _____

Final Contract Price: _____

Contract Time

Initial: _____

Final: _____

Completion Date: _____

Explain Reasons for Variances to Contract Amount and/or Time: _____

Major Subcontractors (or state 'self-perform'):

Electrical: _____

Subcontractor PM: _____

Address: _____

Phone Number: _____

Instrumentation & Controls: _____

Subcontractor PM: _____

Address: _____

Phone Number: _____

Other: _____

Subcontractor PM: _____

Address: _____

Phone Number: _____

END OF SECTION

SECTION 00 45 19B
CERTIFICATION OF ABSENCE OF CONFLICT OF INTEREST
(O.C.G.A. § 36-80-28)

The undersigned Contractor, who is entering into a contract or arrangement with the Clayton County Water Authority (CCWA), by signing below acknowledges and certifies to follow the requirements below:

(1) Contractor shall avoid any appearance of impropriety and shall follow all of CCWA's policies and procedures related to the project.

(2) Contractor discloses below any material transaction or relationship currently known to Contractor that reasonably could be expected to give rise to a conflict of interest, including, but not limited to, that of the Contractor, Contractor's employees, agents or subsidiaries. (Include past, present, or known prospective engagements, involvement in litigation or other dispute, client relationships, or other business or financial interest):

(3) Contractor shall immediately disclose any material transaction or relationship subsequently discovered during the pendency of the contract or arrangement.

(4) Contractor acknowledges that any violation or threatened violation of the agreement may cause irreparable injury to CCWA entitling CCWA to seek injunctive relief in addition to all other legal remedies.

Name of Contractor: _____

Signature of Contractor's Authorized Official: _____

Name of Contractor's Authorized Official: _____

Title: _____

Date: _____

END OF SECTION

SECTION 00 45 75

GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT OF 2006

Pursuant to the Georgia Security and Immigration Compliance Act of 2006, the Contractor understands and agrees that compliance with the requirements of O.C.G.A. § 13-10-91 and Georgia Department of Labor Rule 300-10-.02 are conditions of this Agreement. The Contractor further agrees that such compliance shall be attested by the Contractor through execution of the contractor affidavit required by Georgia Department of Labor Rule 300-10-1-.07, or a substantially similar contractor affidavit. The Contractor's fully executed affidavit is attached hereto as Exhibit A and is incorporated into this Agreement by reference herein.

By initialing in the appropriate line below, the Contractor certifies that the following employee-number category as identified in O.C.G.A. § 13-10-91 is applicable to the Contractor:

- 1. _____ 500 or more employees;
- 2. _____ 100 or more employees;
- 3. _____ Fewer than 100 employees.

The Contractor understands and agrees that, in the event the Contractor employs or contracts with any subcontractor or subcontractors in connection with this Agreement, the Contractor shall:

- 1. Secure from each such subcontractor an indication of the employee-number category as identified in O.C.G.A. § 13-10-91 that is applicable to the subcontractor;
- 2. Secure from each such subcontractor an attestation of the subcontractor's compliance with O.C.G.A. § 13-10-91 and Georgia Department of Labor Rule 300-10-1-.02 by causing each such subcontractor to execute the subcontractor affidavit required by Georgia Department of Labor Rule 300-10-1-.08, or a substantially similar subcontractor affidavit. The Contractor further understands and agrees that the Contractor shall require the executed subcontractor affidavit to become a part of the agreement between the Contractor and each such subcontractor. The Contractor agrees to maintain records of each subcontractor attestation required hereunder for inspection by the Clayton County Water Authority at any time.

Contractor: _____

Authorized Signature: _____

Title: _____

Date: _____

**EXHIBIT A
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 the Clayton County Water Authority has registered with, is participating in, uses, and will continue to use for the duration of the Contract, the federal work authorization program – 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), commonly known as E-Verify, in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

The undersigned further agrees that, in connection with the physical performance of services pursuant to this Contract with the Clayton County Water Authority, the Contractor will only employ or Contract with subcontractor(s) who can present a similar affidavit verifying the subcontractor's compliance with O.C.G.A. 13-10-91. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the Clayton County Water Authority within five days of the subcontractor(s) presenting such affidavit(s) to the Contractor.

EEV / Basic Pilot Program User Identification Number
(Please enter your four to six numeric characters)

BY: Authorized Officer or Agent

Date

Title of Authorized Officer or Agent if Contractor

Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE
____ DAY OF _____, 202__.

Notary Public
My Commission Expires:

**EXHIBIT A-1
SUBCONTRACTOR AFFIDAVIT**

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with (name of Contractor) _____ on behalf of the Clayton County Water Authority has registered with, is participating in, uses, and will continue to use for the duration of this contract the federal work authorization program – 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), commonly known as E-Verify, in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91. The undersigned further agrees that the Subcontractor will maintain records of such compliance and provide a copy of each such verification to the Contractor within five days of the subcontractor(s) presenting such affidavit(s) to the Subcontractor.

EEV / Basic Pilot Program User Identification Number
(Please enter your four to six numeric characters)

BY: Authorized Officer or Agent
Subcontractor Name

Date

Title of Authorized Officer or Agent of Subcontractor

Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE
____ DAY OF _____, 202__.

Notary Public
My Commission Expires:

END OF SECTION

SECTION 00 52 00

AGREEMENT

THIS AGREEMENT is by and between the Clayton County Water Authority (hereinafter called Owner) and _____ (hereinafter called Contractor).

Owner and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 – WORK

- 1.01 Contractor shall at its own cost and expense furnish all labor, services, tools, materials, equipment, and incidentals necessary to complete all Work as specified or indicated in the Contract Documents to construct the **Hicks WPP Blower Upgrade**.

ARTICLE 2 – ENGINEER

- 2.01 The Project has been designed by Engineering Strategies, Inc., 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 completion of the Work in accordance with the Contract Documents.

ARTICLE 3 – CONTRACT TIMES AND LIQUIDATED DAMAGES

3.01 Days to Achieve Substantial Completion and Final Payment

- A. The Work shall be substantially completed within 270 calendar days after the date when the Contract Times commence to run as provided in Section 00 73 00 Supplementary Conditions paragraph SC-4.01 A and completed and ready for final payment in accordance with Section 00 72 00 General Conditions paragraph 15.06 within 300 calendar days from the date when the Contract Times commence to run.

3.02 Liquidated Damages

- A. Owner and Contractor recognize that time is of the essence and that Owner will suffer financial loss if the Work is not substantially completed within the time specified in Paragraph 3.01 for Substantial Completion, plus any extensions thereof allowed in accordance with the General Conditions. Owner and Contractor also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not substantially 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 at the daily rate of One Thousand Five Hundred Dollars (\$1,500.00) per day for each day that expires after the time specified in Paragraph 3.01 for Substantial Completion (adjusted for chan

ges thereof, if any, made in the General Conditions) until the Work is substantially complete.

- B. After Substantial Completion, if Contractor neglects, refuses, or fails to complete the remaining Work within the Contract Times or any Owner-granted extension thereof, Contractor shall pay Owner Five Hundred Dollars (\$500.00) for each day that expires after the time specified in paragraph Contract Times above for completion and readiness for final payment.
- C. Owner shall recover such liquidated damages by deducting the amount owed from the final payment or any retainage held by Owner.

ARTICLE 4 – CONTRACT PRICE

4.01 Owner shall pay Contractor for completion of the Work in accordance with the conformed Bid, which is included as an Exhibit of this Agreement, an adjusted amount equal to the sum of the amounts determined pursuant to the following.

- A. Lump Sum Bid Price: \$ _____
- B. Plus: Cash Allowance Items
 - a. Field and Laboratory Testing \$ _____
 - b. System Integration \$ _____
- C. Plus: Contingency Allowance Items
 - a. Unforeseen Work Elements \$ _____
- D. Total Contract Price:

_____ Dollars and
(Words)
_____ Cents \$ _____
(Words) (Figures)

ARTICLE 5 – EQUIPMENT / MATERIAL MANUFACTURERS

5.01 Owner Selected Equipment/Supplier Schedule

The Bidder shall provide identification of the equipment manufacturer being supplied for each component listed below. See specifications for approved manufacturers for each component.

Item	Component	Specification Section	Selected Manufacturer
1	Positive Displacement Blowers	43 11 33.13	A: Aerzen B: Gardner Denver C: _____

ARTICLE 6 – RETAINAGE

- A. Prior to Substantial Completion, Owner shall retain from progress payments 10 percent of the value of Work completed, and 10 percent of the value of stored materials and equipment. When Work has been 50 percent completed as determined by Owner, the provisions of paragraph SC-15.01 B. shall be applicable to the withholding of further retainage. Following Substantial Completion, Owner shall retain from progress payments an amount, not to exceed 200 percent of the value of the outstanding Work.

ARTICLE 7 – INTEREST

- A. Monies not paid when due as provided in the Contract Documents shall bear interest at the rate to be negotiated between Owner and Contractor.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Agreement, Contractor’s representation are set forth as follows:

- A. Contractor has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, general nature of work to be performed by Owner or others at the site that relates to Work required by the Contract Documents and local conditions and federal, state, and local Laws and Regulations that in any manner may affect cost, progress, performance, or furnishing of Work.
- B. Contractor has studied carefully reports of explorations and tests of subsurface conditions and drawings of physical conditions which are identified in the Supplementary Conditions as provided in paragraph 5.03 of the General Conditions, and accepts the determination set forth in the Supplementary Conditions of the extent of the technical data contained in such reports and drawings upon which Contractor is entitled to rely. Contractor acknowledges that such reports and drawings are not Contract Documents.
- C. Contractor has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) examination, investigations, explorations, tests, studies, and reports (in addition to or to supplement those referred to above) which pertain to the conditions (subsurface or physical) at or contiguous to the site or otherwise and which may affect the cost, progress, performance, or furnishing of the Work as Contractor deems necessary for the performance and furnishing of the Work at the Contract Price,

within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 5.03 of the General Conditions; and no additional or supplementary examinations, investigations, explorations, tests, reports, or similar information or data are or will be required by Contractor for such purposes.

- D. Contractor has reviewed and checked information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities, if any, at or contiguous to the site and has included costs as defined by paragraph 5.05 of the General Conditions.
- E. Contractor has correlated information known to Contractor and results of such observations, familiarizations, examinations, investigations, explorations, tests, studies, and reports with Contract Documents.
- F. Contractor has given Engineer written notice of conflicts, errors, ambiguities, or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by Engineer is acceptable to Contractor, and the Contract Documents are generally sufficient to indicate and convey understanding of terms and conditions for performing and furnishing Work.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 The Contract Documents consist of the following:

- A. This Agreement as defined in Section 00 72 00 General Conditions paragraph 1.01.A.13
- B. Except for the Notice to Proceed, Drawings, and Addenda, these Contract Documents are also listed in the Tables of Contents and are bound in three volumes, identified as Contract Documents for construction of the **Hicks WPP Blower Upgrade**.
- C. The Drawings bound to the Project Manual, comprising a set entitled “Hicks WPP Blower Upgrade” as listed in Section 00 01 15 List of Drawing Sheets in the Project Manual.
- D. Specifications, as listed in the table of contents of the Project Manual
- E. Standard details, bound with the above-noted volumes.
- F. Addenda consisting of number 1 through _____, inclusive.
- G. Exhibits to this Agreement include:
 - a. Conformed Bid Form.
 - b. Executed Performance and Payment Bonds.
 - c. Documents submitted by Contractor prior to execution of Agreement

- d. Statement of Noncollusion.
- H. The following, which may be delivered or issued on or after the Effective Date of the Agreement, and are not attached hereto:
- a. Work Change Directive(s)
 - b. Change Order(s)
 - c. Field Order(s)
- 9.02 The documents listed in Paragraph 9.01 above are attached to this Agreement (except as expressly noted otherwise above). Documents not attached are incorporated by reference.
- 9.03 The Contract Documents may only be amended or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

- A. Terms used in this Agreement will have the meanings indicated 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.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement in six copies (two counterparts each have been delivered to Owner, Contractor, and Engineer). All portions of the Contract Documents have been signed by Owner and Contractor.

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

Owner: Clayton County Water Authority Contractor: _____

Signature: _____ Signature: _____

Name: _____ Name: _____

Title: _____ Title: _____

Attest _____ Attest _____

Name: _____ Name: _____

Title: _____ Title: _____

Address for giving notices

1600 Battle Creek Road

Morrow, Georgia 30260

Address for giving notices

(CORPORATE SEAL)

Agent for service of process:

(If Contractor is a corporation, partnership, or limited liability company, attach evidence of authority to sign.)

(CORPORATE SEAL)

END OF SECTION

SECTION 00 61 13.13
PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS THAT _____
(as Contractor, hereinafter referred to as the "Principal"), and _____
(as Surety Company, hereinafter referred to as the "Contractor's Surety"), are held and firmly bound unto the Clayton County Water Authority (as Owner, hereinafter referred to as the "Authority"), for the use and benefit of any "Claimant" as hereinafter defined in the sum of _____

_____ (\$ _____) lawful money of the United States of America, for the payment of which the Principal and the Contractor's Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered, or is about to enter, into a certain written agreement with the Authority, dated _____, which is incorporated herein by reference in its entirety (hereinafter referred to as the "Contract"), for the construction of a project known as **Hicks WPP Blower Upgrade**, (hereinafter referred to as "the Project").

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

1. That if the Principal shall fully and completely perform each and all of the terms, provisions and requirements of the Contract, including and during the period of any warranties or guarantees required thereunder, and all modifications, amendments, changes, deletions, additions, and alterations thereto that may hereafter be made; and if the Principal and the Contractor's Surety shall indemnify and hold harmless the Authority from any and all losses, liability and damages, claims, judgments, liens, costs and fees of every description, including but not limited to, any damages for delay,

which the Authority may incur, sustain or suffer by reason of the failure or default on the part of the Principal in the performance of any and all of the terms, provisions and requirements of the Contract, including all modifications, amendments, changes, deletions, additions, and alterations thereto and any warranties or guarantees required thereunder, then this obligation shall be void; otherwise to remain in full force and effect;

2. In the event of a failure of performance of the Contract by the Principal, which shall include, but not be limited to, any breach of default of the Contract;
 - a. The Contractor's Surety shall commence performance of its obligations and undertakings under this Bond no later than thirty (30) days after written notice from the Authority to the Contractor's Surety;
 - b. The means, method or procedure by which the Contractor's Surety undertakes to perform its obligations under this Bond shall be subject to the advance written approval of the Authority.

The Contractor's Surety hereby waives notice of any and all modifications, omissions, additions, changes and advance payments or deferred payments in or about the Contract, and agrees that the obligations undertaken by this Bond shall not be impaired in any manner by reason of any such modifications, omissions, additions, changes, and advance payments or deferred payments. The Parties further expressly agree that any action on this Bond may be brought within the time allowed by Georgia law for suit on contracts under seal.

IN WITNESS WHEREOF, the Principal and Contractor's Surety have hereunto affixed their corporate seals and caused this obligation to be signed by their duly authorized officers or attorneys-in-fact, this _____ day of _____, 202__.

CONTRACTOR – PRINCIPAL:

By: _____

(name signed)

(name printed or typed)

Title: _____

Address: _____

Attest: _____

(name signed)

(name printed or typed)

Title: _____

(SEAL)

SURETY:

By: _____

(name signed)

(name printed or typed)

Title: _____

Address: _____

Attest: _____

(name signed)

(name printed or typed)

Title: _____

(SEAL)

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

END OF SECTION

SECTION 00 61 13.16
PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS THAT _____
(as Contractor, hereinafter referred to as the "Principal"), and _____
(as Surety Company, hereinafter referred to as the "Contractor's Surety"), are held and firmly
bound unto the Clayton County Water Authority (as Owner, hereinafter referred to as the
"Authority"), for the use and benefit of any "Claimant" as hereinafter defined in the sum of _____
_____ (\$ _____) lawful
money of the United States of America, for the payment of which the Principal and the Contractor's
Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly
and severally, firmly by these presents.

WHEREAS, the Principal has entered, or is about to enter, into a certain written agreement
with the Authority, dated _____, which is incorporated herein
by reference in its entirety (hereinafter referred to as the "Contract"), for the construction of a
project known as **Hicks WPP Blower Upgrade** (hereinafter referred to as "the Project").

NOW THEREFORE, the conditions of this obligation is such, that if the Principal shall
promptly make payment to any Claimant, as hereinafter defined, for all labor, services and
materials used or reasonably required for use in the performance of the Contract, then this
obligation shall be void; otherwise to remain in full force and effect.

A "Claimant" shall be defined herein as any subcontractor, person, party, partnership,
corporation or other entity furnishing labor, services or materials used or reasonably required for
use in the performance of the Contract, without regard to whether such labor, services or materials
were sold, leased or rented, and without regard to whether such Claimant is or is not in privity of
the Contract with the Principal or any Subcontractor performing Work on the Project.

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

The Parties further expressly agree that any action on this Bond may be brought within
the time allowed by Georgia law for suit on contracts under seal.

IN WITNESS WHEREOF, the Principal and Contractor's Surety have hereunto affixed their corporate seals and caused this obligation to be signed by their duly authorized officers or attorneys-in-fact, this _____ day of _____, 202__.

CONTRACTOR – PRINCIPAL:

By: _____

(name signed)

(name printed or typed)

Title: _____

Address: _____

Attest: _____

(name signed)

(name printed or typed)

Title: _____

(SEAL)

SURETY:

By: _____

(name signed)

(name printed or typed)

Title: _____

Address: _____

Attest: _____

(name signed)

(name printed or typed)

Title: _____

(SEAL)

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

END OF SECTION

GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

EJCDC C-700, Standard General Conditions of the Construction Contract
(2013 Edition)

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC's Guide to the Preparation of Supplementary Conditions (EJCDC® C-800, 2013 Edition). The full EJCDC Construction series of documents is discussed in the Commentary on the 2013 EJCDC Construction Documents (EJCDC® C-001, 2013 Edition).

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

TABLE OF CONTENTS

	Page
Article 1 – Definitions and Terminology	1
1.01 Defined Terms	1
1.02 Terminology	5
Article 2 – Preliminary Matters.....	6
2.01 Delivery of Bonds and Evidence of Insurance	6
2.02 Copies of Documents	6
2.03 Before Starting Construction	6
2.04 Preconstruction Conference; Designation of Authorized Representatives	7
2.05 Initial Acceptance of Schedules	7
2.06 Electronic Transmittals.....	7
Article 3 – Documents: Intent, Requirements, Reuse	8
3.01 Intent.....	8
3.02 Reference Standards	8
3.03 Reporting and Resolving Discrepancies	8
3.04 Requirements of the Contract Documents	9
3.05 Reuse of Documents	10
Article 4 – Commencement and Progress of the Work	10
4.01 Commencement of Contract Times; Notice to Proceed	10
4.02 Starting the Work.....	10
4.03 Reference Points	10
4.04 Progress Schedule	10
4.05 Delays in Contractor’s Progress	11
Article 5 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions	12
5.01 Availability of Lands	12
5.02 Use of Site and Other Areas	12
5.03 Subsurface and Physical Conditions.....	13
5.04 Differing Subsurface or Physical Conditions	13
5.05 Underground Facilities	15

5.06	Hazardous Environmental Conditions at Site	16
Article 6 – Bonds and Insurance		18
6.01	Performance, Payment, and Other Bonds	18
6.02	Insurance—General Provisions	19
6.03	Contractor’s Insurance	20
6.04	Owner’s Liability Insurance	22
6.05	Property Insurance.....	22
6.06	Waiver of Rights	24
6.07	Receipt and Application of Property Insurance Proceeds	25
Article 7 – Contractor’s Responsibilities		25
7.01	Supervision and Superintendence	25
7.02	Labor; Working Hours	26
7.03	Services, Materials, and Equipment.....	26
7.04	“Or Equals”	26
7.05	Substitutes	27
7.06	Concerning Subcontractors, Suppliers, and Others	29
7.07	Patent Fees and Royalties	30
7.08	Permits	31
7.09	Taxes	31
7.10	Laws and Regulations.....	31
7.11	Record Documents.....	32
7.12	Safety and Protection.....	32
7.13	Safety Representative	33
7.14	Hazard Communication Programs	33
7.15	Emergencies	33
7.16	Shop Drawings, Samples, and Other Submittals.....	33
7.17	Contractor’s General Warranty and Guarantee.....	35
7.18	Indemnification	36
7.19	Delegation of Professional Design Services	37
Article 8 – Other Work at the Site		37
8.01	Other Work	37
8.02	Coordination	38
8.03	Legal Relationships.....	38

Article 9 – Owner’s Responsibilities.....	39
9.01 Communications to Contractor.....	39
9.02 Replacement of Engineer	39
9.03 Furnish Data	39
9.04 Pay When Due.....	39
9.05 Lands and Easements; Reports, Tests, and Drawings	39
9.06 Insurance.....	40
9.07 Change Orders.....	40
9.08 Inspections, Tests, and Approvals.....	40
9.09 Limitations on Owner’s Responsibilities	40
9.10 Undisclosed Hazardous Environmental Condition.....	40
9.11 Evidence of Financial Arrangements.....	40
9.12 Safety Programs	40
Article 10 – Engineer’s Status During Construction.....	40
10.01 Owner’s Representative.....	40
10.02 Visits to Site.....	40
10.03 Project Representative.....	41
10.04 Rejecting Defective Work.....	41
10.05 Shop Drawings, Change Orders and Payments.....	41
10.06 Determinations for Unit Price Work	41
10.07 Decisions on Requirements of Contract Documents and Acceptability of Work	41
10.08 Limitations on Engineer’s Authority and Responsibilities.....	41
10.09 Compliance with Safety Program.....	42
Article 11 – Amending the Contract Documents; Changes in the Work	42
11.01 Amending and Supplementing Contract Documents	42
11.02 Owner-Authorized Changes in the Work	43
11.03 Unauthorized Changes in the Work.....	43
11.04 Change of Contract Price	43
11.05 Change of Contract Times	44
11.06 Change Proposals.....	44
11.07 Execution of Change Orders.....	45
11.08 Notification to Surety.....	46
Article 12 – Claims.....	46

12.01	Claims	46
Article 13	– Cost of the Work; Allowances; Unit Price Work.....	47
13.01	Cost of the Work	47
13.02	Allowances	49
13.03	Unit Price Work	50
Article 14	– Tests and Inspections; Correction, Removal or Acceptance of Defective Work.....	51
14.01	Access to Work.....	51
14.02	Tests, Inspections, and Approvals.....	51
14.03	Defective Work.....	52
14.04	Acceptance of Defective Work.....	52
14.05	Uncovering Work	52
14.06	Owner May Stop the Work	53
14.07	Owner May Correct Defective Work.....	53
Article 15	– Payments to Contractor; Set-Offs; Completion; Correction Period	54
15.01	Progress Payments.....	54
15.02	Contractor’s Warranty of Title	57
15.03	Substantial Completion.....	57
15.04	Partial Use or Occupancy	58
15.05	Final Inspection	58
15.06	Final Payment.....	58
15.07	Waiver of Claims	60
15.08	Correction Period	60
Article 16	– Suspension of Work and Termination	61
16.01	Owner May Suspend Work	61
16.02	Owner May Terminate for Cause	61
16.03	Owner May Terminate For Convenience	62
16.04	Contractor May Stop Work or Terminate	62
Article 17	– Final Resolution of Disputes	63
17.01	Methods and Procedures.....	63
Article 18	– Miscellaneous	63
18.01	Giving Notice	63
18.02	Computation of Times.....	63
18.03	Cumulative Remedies	63

18.04	Limitation of Damages	64
18.05	No Waiver	64
18.06	Survival of Obligations	64
18.07	Controlling Law	64
18.08	Headings.....	64

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. 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, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 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. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document 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, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision

regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice 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.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *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.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *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.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. *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, and such other lands furnished by Owner which are designated for the use of Contractor.

38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *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.
40. *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.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *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 a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *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 but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *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; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in the following paragraphs 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 Article 10 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 15.03 or 15.04).
- 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. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words

“furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- 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. *Bonds*: 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 Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), 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;
 - 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.

2.04 *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 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, 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 and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *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 2.03.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 the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, 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.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

- A. Standards Specifications, Codes, Laws and Regulations
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, 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, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract 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, reference standard, 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 part of the Contract Documents prepared by or for Engineer. 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 part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

- A. *Reporting Discrepancies:*
 - 1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents:* If, before or 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) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) 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 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
 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 part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); 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 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers 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 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; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- 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.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *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 Contract 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 Contract. 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 Contract, whichever date is earlier.

4.02 *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 such date.

4.03 *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.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 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 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. 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, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, 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 Times and Contract Price. 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.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. 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. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. abnormal weather conditions;
 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *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.
- 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 permanent improvements are to be made 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.

5.02 *Use of Site and Other Areas*

- A. *Limitation on Use of Site and Other Areas:*
 - 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 - 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, 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 any such claim, and against all 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 directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent 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 and adjacent areas 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 of 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 structures or land to stresses or pressures that will endanger them.

5.03 *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 adjacent to the Site;
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on 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.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site 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 5.03 is materially inaccurate; or
 - 2. is of such a nature as to require a change in the Drawings or Specifications; 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 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
 1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, 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 fall within any one or more of the categories described in Paragraph 5.04.A;
 - 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 Paragraph 13.03; and,
 - c. 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.
 2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a 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 otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site

and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

- c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent 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 do not warrant or guarantee 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 information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then 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 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and

recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - 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 Paragraph 13.03;
 - c. 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; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.
 2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
 2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on 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 removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) 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 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. 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, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. 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, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

- I. 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 (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. 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 failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, 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. 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 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond

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 the accompanying bond.

- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then 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 bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor

to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, 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.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
 - 4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
 - 1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 - 2. claims for damages insured by reasonably available personal injury liability coverage.
 - 3. 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.
- C. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
 - 1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.

- b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability*: Contractor shall purchase and maintain automobile liability insurance against 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. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; 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 (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial

Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

- I. *General provisions:* The policies of insurance required by this Paragraph 6.03 shall:
 1. include at least the specific coverages provided in this Article.
 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 5. be appropriate for the Work being performed and provide protection from claims that 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.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, 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.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk:* Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable 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 Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."

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; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; 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. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
 5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
 6. extend to cover damage or loss to insured property while in transit.
 7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
 8. allow for the waiver of the insurer's subrogation rights, as set forth below.
 9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
 10. not include a co-insurance clause.
 11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. include performance/hot testing and start-up.
 13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change*: All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this

Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.

- C. *Deductibles*: The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance*: If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, 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 insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the 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 Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, 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 or Contractor as trustee or fiduciary, 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 occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.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, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, 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 builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *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.

- 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.

7.02 *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, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 *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, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work 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.

7.04 *"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 Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item 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 is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that 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, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, 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;
 - 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
 - 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.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
 - 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
3. 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:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) 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
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. 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.

- E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. 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 the right of Owner to the completion of the Work in accordance with the Contract Documents.

- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. 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.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. 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.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. 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 money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *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.

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, 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 the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 *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.

7.10 *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 or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and 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 such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if

any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 *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, other work in progress, 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 Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- 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 7.12.A.2 or 7.12.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 at its expense (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 protection 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 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *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.

7.14 *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.

7.15 *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.

7.16 *Shop Drawings, Samples, and Other Submittals*

- A. *Shop Drawing and Sample Submittal Requirements:*
 - 1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the 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 and equipment 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 of that submittal, and that Contractor approves the 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 set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.
1. *Shop Drawings:*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - 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 7.16.D.
 2. *Samples:*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall 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 7.16.D.
 3. 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. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- 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 or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample 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 7.16.A.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 will document any such approved variation from the requirements of the Contract Documents in a Field Order.

5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

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.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *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 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;
 6. the issuance of a notice of acceptability by Engineer;
 7. any inspection, test, or approval by others; or
 8. any correction of defective Work by Owner.
- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, 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 7.18.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 7.18.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.

7.19 *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 Laws and Regulations.
- 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, 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, 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 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. 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.

- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, 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.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner for whom the Owner is responsible causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. 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.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual

rights against Contractor with respect to the breach of the obligations set forth in this paragraph.

- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) 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 any such claims, and against all 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 damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

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

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

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

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *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.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *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 (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- 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.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *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.

10.02 *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 10.08. 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.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. 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.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. 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, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

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

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, 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 15.06.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 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. *Change Orders:*
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
 - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents

governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes 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. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-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. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *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, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. 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, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).
- C. *Contractor's Fee*: When applicable, 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 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.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 11.04.C.2.a and 11.04.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - 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 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under

the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
 2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
 3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 Execution of Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. 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;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *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.

ARTICLE 12 – CLAIMS

12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
 - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal

and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work 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 13.01.C, 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, and 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 13.01.
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 6.05), 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 communication 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 that Contractor is required by the Contract Documents to purchase and maintain.

C. *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 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here 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 Paragraph 13.01.B.

D. *Contractor's Fee*: When the Work as a whole 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, Change Proposal, Claim, set-off, or other 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 11.04.C.

E. *Documentation*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, 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.

13.02 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*: Contractor agrees that:
 - 1. 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
 - 2. 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*: 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.

13.03 *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. Payments to Contractor for Unit Price Work will be based on actual quantities.
- 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. 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 the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price 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;
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that it 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 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction 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.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- 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, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 - 3. by manufacturers of equipment furnished under the Contract Documents;
 - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. 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. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to

cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages 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. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then 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, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages 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 pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. 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, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *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, then 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.

14.07 *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, 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, then 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 14.07, 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, 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 incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. 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 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 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 during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *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, a warehouse bond, 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.
- C. *Review of Applications:*
 - 1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, 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 13.03, 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; 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 money 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 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

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

E. *Reductions in Payment by Owner:*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. 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;
 - l. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, 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, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

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 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *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 and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- 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 preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

- F. 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 punch list.

15.04 *Partial Use or Occupancy*

- 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. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be 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 15.03.A through E for that part of the Work.
 - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work 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 15.03 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 6.05 regarding builder's risk or other property insurance.

15.05 *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, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *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, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
 3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) 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, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- 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 have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. 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 15.07. 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. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.
- D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *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 Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such other adjacent areas;
 - 2. correct such defective Work;
 - 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 to 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. 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 repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- 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, 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 are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *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 written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and 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);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, 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 complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.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 the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds 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.

- F. 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, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *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; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) 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 16.03.
- 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 are not intended to preclude Contractor from submitting a Change Proposal 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 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *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, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
 - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract 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.

18.03 *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. 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.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

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

18.08 *Headings*

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

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SECTION 00 73 00
SUPPLEMENTARY CONDITIONS

These SUPPLEMENTARY CONDITIONS amend, modify, or supplement Section 00 72 00, the STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT as prepared by the Engineers Joint Contract Documents Committee (EJCDC), Form C-700, 2013 Edition (hereinafter “the General Conditions”). To the extent these SUPPLEMENTARY CONDITIONS amend, modify or supplement the General Conditions, said SUPPLEMENTARY CONDITIONS take precedence and shall control. All provisions of the General Conditions not so amended, modified, or supplemented, shall remain in full force and effect.

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 DEFINED TERMS

SC-1.01 A.8. Paragraph 1.01.A.8 of the General Conditions is amended to read as follows:

Change Order: A document which is signed by Contractor and Owner, and by Engineer if requested by 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.

SC-1.01 A.15. Paragraph 1.01.A.15 of the General Conditions is amended by the addition of the following provision:

Execution of this Agreement by Contractor constitutes an acknowledgement and agreement by Contractor that all Contract Times stated in the Contract Documents are reasonable and are of sufficient duration for the Work required to be performed within such times. Contractor acknowledges that Work on Saturdays, Sundays, or legal holidays requires the prior written approval of Owner and further requires that Contractor shall be responsible for, and shall pay, any and all overtime or extra cost incurred by Owner or Engineer resulting from such Work on Saturdays, Sundays, or legal holidays. Contractor further acknowledges that unless expressly stated otherwise, all days and times set forth in the Contract Documents are measured by calendar days.

SC-1.01 A.20. Paragraph 1.01.A.20 of the General Conditions is amended to read as follows:

Engineer: The individual or entity named as such in the Agreement or any substitute or successor as subsequently identified by Owner in writing to Contractor.

SC-1.01 A.29. Paragraph 1.01.A.29 of the General Conditions is amended to read as follows:

Progress Schedule: A detailed written 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. The Project Schedule shall be in such form and format as the Owner or Engineer may require. It shall be updated not less frequently than monthly, or as otherwise required by the Contract Documents, and it shall at all times reflect the current and existing critical path of the Work to be completed. The Owner and Contractor specifically agree that any float contained in the Progress Schedule, or any update thereof, shall belong to the Project, and in no event, shall Contractor make a claim for any alleged delay, acceleration, or early completion so long as the Project is completed within the Contract Time.

SC-1.01 A.35. Paragraph 1.01.A.35 of the General Conditions is amended by the addition of the following provision:

The Schedule of Values shall be in such form and format as the Owner or Engineer may require, and Contractor shall provide such information and data as Owner or Engineer may require to substantiate its accuracy. Contractor shall not imbalance the Schedule of Values nor artificially inflate any element thereof. The Schedule of Values shall only be used as a basis for evaluating Contractor's Applications for Payment and receipt and approval of such Schedule by Owner and Engineer are conditions precedent to payment of any sums to Contractor.

1.02 TERMINOLOGY

SC-1.02 E. Paragraph 1.02. E. of the General Conditions is amended by the addition of the following provision to be identified as Paragraph 1-02. E.5:

The words "include" or "including," as used in the Contract Documents, shall be deemed to be followed by the phrase "without limitation."

ARTICLE 2 – PRELIMINARY MATTERS

2.01 DELIVERY OF BONDS AND EVIDENCE OF INSURANCE

SC-2.01 A. Paragraph 2.01 A. of the General Conditions is amended by the addition of the following provision:

Such bonds shall be executed by a surety acceptable to Owner and shall be in such form as Owner may require. All such bonds must comply with all requirements of Georgia law.

SC-2.01 C. Paragraph 2.01 C. of the General Conditions is amended by the insertion of the following phrase at the beginning of said Paragraph:

Upon written request of Contractor, . . .

2.02 COPIES OF DOCUMENTS

SC-2.02 A. Paragraph 2.02 A. of the General Conditions is amended by the deletion of the first sentence of said Paragraph and the substitution in lieu thereof of the following:

Owner shall furnish to Contractor 2 full size copies, and one electronic copy, of the Contract Documents.

2.04 PRECONSTRUCTION CONFERENCE; DESIGNATION OF AUTHORIZED REPRESENTATIVES

SC-2.04 B. Paragraph 2.04 B. of the General Conditions is amended by the addition of the following provision:

Notwithstanding any other provision herein, to the extent the policies or procedures of Owner require that any decision of Owner's authorized representative must first be approved by any officer or senior management employee of Owner, or by the Board of Directors of Owner, such decision shall not be binding or final until such approval has been issued in writing.

2.05 INITIAL ACCEPTANCE OF SCHEDULES

SC-2.05 A. Paragraph 2.05 A. of the General Conditions is amended by the addition of subparagraph 4. to read as follows:

Notwithstanding any other provision in this Paragraph 2.05, the Progress Schedule, Schedule of Submittals, and Schedule of Values shall comply with all other requirements of the Contract Documents and all must be acceptable to, and approved by, Owner.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.03 REPORTING AND RESOLVING DISCREPANCIES

SC-3.03 A.2. Paragraph 3.03 A.2 of the General Conditions is amended by the addition of the following provision:

Contractor shall have a continuing duty to read, carefully study, and compare each of the Contract Documents, the Shop Drawings and any applicable product data and shall give written notice to Engineer of any inconsistency, ambiguity, error or omission which Contractor may discover with respect to these documents before proceeding with the affected Work. The issuance, or the express or implied approval, by Owner or Engineer of the Contract Documents, Shop Drawings, or any product data shall not relieve Contractor of the continuing duties imposed hereby. OWNER

MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY NATURE TO CONTRACTOR CONCERNING THE CONTRACT DOCUMENTS. By execution of this Agreement, Contractor acknowledges that it has received, reviewed, and carefully examined the Contract Documents and has reported in writing to Engineer any inconsistencies, ambiguities, errors or omissions discovered by Contractor in said Documents.

SC-3.03 B.1. Paragraph 3.03 B.1 of the General Conditions is amended by the addition of the following subparagraph c.:

In resolving conflicts, discrepancies, or inconsistencies among any of the Contract Documents, the following hierarchy shall control: (a) as between figures given on Documents and scaled measurements, the figures shall govern; (b) as between large-scale drawings and small-scale drawings, the large-scale shall govern; (c) as between Drawings and Specifications, the requirements of the Specifications shall govern; (d) as between the General Conditions and the Supplementary Conditions, the Supplementary Conditions shall govern. Any and all such conflicts, discrepancies, or inconsistencies shall be immediately reported by Contractor in writing to Engineer.

3.04 REQUIREMENTS OF THE CONTRACT DOCUMENTS

SC-3.04 B. Paragraph 3.04 B of the General Conditions is amended by the deletion of the following language at the end of such Paragraph:

. . . and on Owner, unless it objects.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 COMMENCEMENT OF CONTRACT TIMES; NOTICE TO PROCEED

SC-4.01 A. Paragraph 4.01 A. of the General Conditions is deleted in its entirety and in lieu thereof the following is inserted:

The award of the Contract, if made, shall be to the lowest responsible bidder, or, if applicable, to the proposer whose proposal has been accepted, within ninety (90) days after the opening of bids or proposals; however, in no event shall the award be made until any required investigations are made as to the responsibility of the bidder or proposer to whom it is proposed to award the Contract. Following award and execution of this Agreement, and following receipt by Owner of the required bonds and certificates of insurance, Contractor shall commence Work within ten (10) days from the date specified in a written Notice to Proceed issued by Owner or Engineer. The Contract Time shall commence to run upon issuance to Contractor of such Notice to Proceed.

No work shall commence prior to the issuance of the Notice to Proceed or before delivery to Owner of the required bonds and certificates of insurance. Should Owner unreasonably delay issuance of the Notice to Proceed through no fault of Contractor, Contractor's sole and exclusive remedy shall be an extension of the Contract Time to the extent the time of performance has been reasonably delayed, but in no event, and under no circumstances, shall Contractor be entitled to an increase in the Contract Price.

4.02 STARTING THE WORK

SC-4.02 A. Paragraph 4.02 A. of the General Conditions is deleted in its entirety.

4.04 PROGRESS SCHEDULE

SC-4.04 B. Paragraph 4.04 B. of the General Conditions is amended by the addition of the following provision:

Strict compliance with all requirements of this Paragraph, and with all other scheduling requirements set forth in the Contract Documents, is a condition precedent for payment to Contractor, and any failure by Contractor to strictly comply with said requirements shall constitute a material breach of this Agreement.

4.05 DELAY IN CONTRACTOR'S PROGRESS

SC-4.05 C.2. Paragraph 4.05 C. of the General Conditions is amended by adding the following subparagraphs:

5. Weather-Related Delays

- a) If "abnormal weather conditions" as set forth in Paragraph 4.05.C.2 of the General Conditions are the basis for a request for an equitable adjustment in the Contract Times, such request must be documented by data substantiating each of the following: 1) that weather conditions were abnormal for the period of time in which the delay occurred, 2) that such weather conditions could not have been reasonably anticipated, and 3) that such weather conditions had an adverse effect on the Work as scheduled.
- b) The existence of abnormal weather conditions will be determined on a month-by-month basis in accordance with the following:
 - i) Every workday on which one or more of the following conditions exist will be considered a "bad weather day":

- (1) Total precipitation (as rain equivalent) occurring between 7:00 p.m. on the preceding day (regardless of whether such preceding day is a workday) through 7:00 p.m. on the workday in question equals or exceeds 0.1-inch of precipitation.
- (2) Ambient outdoor air temperature at 11:00 a.m. is equal to or less than the following low temperature threshold: 32 degrees Fahrenheit; or, at 3:00 p.m. the ambient outdoor temperature is equal to or greater than the following high temperature threshold: 100 degrees Fahrenheit.
- ii) Determination of actual bad weather days during performance of the Work will be based on the weather records measured and recorded by NOAA National Weather Service weather monitoring station at Jonesboro, GA.
- iii) Contractor shall anticipate the number of foreseeable bad weather days per month indicated in the Foreseeable Bad Weather Days table.

Foreseeable Bad Weather Days

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
6	6	6	6	5	6	6	5	4	4	5	7

- iv) In each month, every bad weather day exceeding the number of foreseeable bad weather days established in the Foreseeable Bad Weather Days table will be considered as “abnormal weather conditions.” The existence of abnormal weather conditions will not relieve Contractor of the obligation to demonstrate and document that delays caused by abnormal weather are specific to the planned work activities or that such activities thus delayed were on Contractor’s then-current Progress Schedule’s critical path for the Project.

**ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS;
HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS**

5.01 AVAILABILITY OF LANDS

SC-5.01 A. Paragraph 5.01 A. of the General Conditions is amended by the addition of the following provision:

Prior to submission of its bid or proposal, Contractor shall inspect the Project site and shall include within its bid or price the cost of addressing all site conditions reasonably ascertainable from such inspection. Contractor shall also examine and inspect all easements and rights-of-way necessary for completion of its Work and shall comply with all conditions and stipulations of same. In no

event shall Contractor enter upon the property of an adjacent landowner not under the control of Owner until such time as proper easements have been obtained and filed of record. Contractor shall in no event be entitled to damages, additional compensation, or any change in the Contract Price arising out of or relating to any failure by Owner to obtain any easement or rights-of-way.

5.03 SUBSURFACE AND PHYSICAL CONDITIONS

SC-5.03 Paragraph 5.03 of the General Conditions is deleted in its entirety and in lieu thereof the following provisions are inserted:

Reports, tests, and drawings relating to the Project site are not Contract Documents. They represent information available to Engineer in the design of the Project. Any conclusions drawn from this information are the responsibility of Contractor, and neither Owner nor Engineer makes any representations or warranties concerning the accuracy or completeness of any such reports, tests or drawings. Upon written request, and to the extent available, the following reports, tests, and drawings will be made available for review by Contractor or its representatives:

- Record Drawings for Construction of the Freeman Road Water Treatment Plant, Robert and Company, December 1996

5.04 DIFFERING SUBSURFACE OR PHYSICAL CONDITIONS

SC-5.04 A.1. Paragraph 5.04 A.1. of the General Conditions is amended by the deletion of such provision.

5.06 HAZARDOUS ENVIRONMENTAL CONDITIONS AT SITE

SC-5.06 B. Paragraph 5.06 B. of the General Conditions is amended by the addition of the following language at the beginning of the first sentence thereof:

Except to the extent otherwise provided herein . . .

ARTICLE 6 – BONDS AND INSURANCE

6.01 PERFORMANCE, PAYMENT, AND OTHER BONDS

SC-6.01 A. Paragraph 6.01 A. of the General Conditions is amended by the deletion of the second sentence in said Paragraph and the insertion of the following sentence in lieu thereof;

These bonds shall remain in full force and effect for such time as provided by Georgia law or for such longer time as may be provided by the terms of said bonds

SC-6.01 B. Paragraph 6.01 B. of the General Conditions is amended by the addition of the following provision:

In addition to all other requirements set forth hereinabove, and in addition to all other insurance requirements set forth below, all bonds and policies of insurance required by the Contract Documents shall be issued by companies having a Best's rating of no less than A: VII. All such bonds and policies of insurance, as well as all required certificates of insurance, shall be executed or countersigned by a licensed resident agent of the surety or insurance company having its principal place of business in the State of Georgia, and in all ways complying with the laws of the State of Georgia.

SC-6.01 G. Paragraph 6.01 of the General Conditions is amended by the addition of subparagraph G. thereto which shall read as follows:

Upon request of Owner or Engineer, Contractor shall obtain and furnish to Owner and Engineer written consent of its performance bond surety to any Contract payment, proposed or executed Change Order, or such other action as may be taken or contemplated under the Contract Documents. Absence of such consent of surety, however, shall in no manner whatsoever relieve, release, or discharge any surety from any of its obligations under the performance bond, the payment bond, or otherwise.

6.03 CONTRACTOR'S INSURANCE

SC-6.03 K. Paragraph 6.03 of the General Conditions is amended by the addition of subparagraph K. which provides as follows:

In addition to the insurance requirements set forth hereinabove, Contractor shall comply with any additional insurance requirements as set forth in the attached Exhibit "A." In the event of any conflict between the requirements of Paragraph 6.03 as set forth hereinabove, and the requirements as set forth in Exhibit "A," the requirements of Exhibit "A" shall govern and control.

SC-6.03 I.3. Paragraph 6.03. I.3 of the General Conditions is amended by the deletion of the phrase ". . . until at least 10 days prior written notice. . ." and the substitution in lieu thereof of the following phrase:

". . . until at least 90 days prior written notice . . ."

6.05 PROPERTY INSURANCE

SC-6.05 B. Paragraph 6.05 B. of the General Conditions is amended by the deletion of the phrase ". . . until at least 10 days prior written notice. . ." and the substitution in lieu thereof of the following phrase:

“ . . . until at least 90 days prior written notice. . . ”

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 SUPERVISION AND SUPERINTENDENCE

SC-7.01 B. Paragraph 7.01 B. of the General Conditions is amended by the deletion of said paragraph in its entirety and the substitution in lieu thereof of the following provision:

At all times during the progress of the Work, Contractor shall assign an on-site, full-time, competent, and experienced superintendent to the Project who, so long as said superintendent remains in the employment of Contractor, shall not be replaced without the prior written consent of Owner. Such superintendent shall have no less than three years' experience as a superintendent on one or more projects similar in nature, size and scope to the Project. Contractor shall furnish Owner a detailed resume setting forth the qualifications of such superintendent prior to his or her assignment to the Project. The qualifications of such superintendent must be acceptable to Owner. The superintendent shall be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to, or received by, the superintendent shall be binding on Contractor.

SC-7.01 C. Paragraph 7.01 of the General Conditions is amended by the addition of subparagraph 7.01 C. which shall read as follows:

Contractor shall prepare and submit to Owner and Engineer a daily report setting forth for each day of Work the weather conditions; the number of workers present by craft; the identity of all management and supervisory personnel on site; a list of all active and inactive equipment on site; work accomplished by scheduled activity; all problems and issues impacting the Work in whole or in part; an identification of any visitors to the site; and such other information as may be relevant to the status of performance of this Agreement. This report shall be signed by the Project superintendent of Contractor or Contractor's other designated representative and shall be delivered to Owner and Engineer on or before 10:00 a.m. of the day following the day which is the subject matter of the report.

7.02 LABOR; WORKING HOURS

SC-7.02 B. Paragraph 7.02 B. of the General Conditions is amended by the deletion of the second sentence in said Paragraph and the substitution in lieu thereof of the following provision:

Contractor may perform Work outside regular business hours or on Saturdays, Sundays, or legal holidays only with the prior written consent of Owner which Owner may grant or withhold in its sole discretion. Before performing any authorized work on any of these days, or before performing

authorized work outside regular business hours, Contractor shall provide Engineer and Owner not less than seventy-two (72) hours prior written notice.

SC-7.02 B. Paragraph 7.02 B. of the General Conditions is deleted in its entirety and in lieu thereof, the following provision is inserted:

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, Monday through Friday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with the prior written consent of Owner which Owner may grant or withhold in its sole discretion. Before performing any authorized work on any of these days, or before performing authorized work outside regular working hours, Contractor shall provide Engineer and Owner not less than seventy-two (72) hours prior written notice. Regular working hours shall be defined as 7:00 AM to 7:00 PM. Working hours are not to exceed 40 hours per week without obtaining permission for overtime work from the Engineer and Owner.

7.06 CONCERNING SUBCONTRACTORS, SUPPLIERS, AND OTHERS

SC-7.06 F. Paragraph 7.06 F. of the General Conditions is amended by the deletion of the phrase "If Owner requires the replacement of any Subcontractor . . ." and in lieu thereof the substitution of the following phrase:

"If without good cause, Owner requires the replacement of any Subcontractor. . ."

SC-7.06 K. Paragraph 7.06 K. of the General Conditions is amended by the addition of the following provision:

Notwithstanding any other provision herein, Contractor acknowledges and agrees that Owner or Engineer may communicate directly with Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work for the purpose of determining whether or not any of said entities have been, or are being, timely paid by Contractor or whether or not Contractor is otherwise complying with its obligations under this Agreement.

SC-7.06 L. Paragraph 7.06 L. of the General Conditions is amended by the addition of the following provision:

Notwithstanding any other provision herein, Contractor shall perform not less than twenty-five percent (25%) of all on-site labor with employees of Contractor.

SC-7.06 P. Paragraph 7.06 of the General conditions is amended by the addition of subparagraph P. thereto which shall read as follows:

In the event any Subcontractor or Supplier makes claim against Contractor for any increase in the subcontract price due such Subcontractor or Supplier, or for an increase in the time to perform any of the Work, or for any other compensation or relief, Contractor shall assert any and all available contractual, legal, and equitable defenses to any such claim or claims. Such defenses include, but are not limited to, any and all notice and claim defenses arising under the applicable subcontract or supplier agreement and all defenses arising under this Agreement as incorporated therein. Contractor shall not agree to “pass through” any such claim to Owner, or to pay any such claim, if it is subject to any of the defenses as set forth hereinabove. Contractor’s duty to defend against any invalid claims includes, but is not limited to, the duty to defend such claims in a court of competent jurisdiction or in arbitration, if applicable. Failure of Contractor to defend against any invalid Subcontractor or Supplier claims as required herein shall constitute a complete and unequivocal waiver of any right of Contractor to seek reimbursement from Owner or Engineer. Contractor shall furthermore indemnify and hold Owner harmless from any and all cost and expense, including attorneys’ fees and expert witness fees and cost, incurred in defending any Subcontractor or Supplier claims to which a valid contractual, legal or equitable defense was available to Contractor.

SC-7.06 Q. Paragraph 7.06 of the General Conditions is amended by the addition of subparagraph Q. thereto which shall read as follows:

Contractor shall require all Subcontractors, Suppliers, and others performing or furnishing any of the Work to maintain insurance coverages as set forth in Exhibit “A” hereto including, but not limited to, completed operations coverage at the minimum level stated in said Exhibit. Contractor shall maintain certificates of insurance from all such entities and said certificates shall be available upon request for inspection by Owner or Engineer.

7.08 PERMITS

SC-7.08 A. Paragraph 7.08 A. of the General Conditions is amended by the addition of the following provision:

Notwithstanding any other provision herein, Owner agrees that any fees for permits or licenses, or any inspection fees, obtained from, or payable directly to, Owner are waived. Contractor, however, shall pay for all other permits, licenses, and inspection fees required by any other governmental entity or agency.

7.10 LAWS AND REGULATIONS

SC-7.10 D. Paragraph 7.10 of the General Conditions is amended by the addition of subparagraph D. thereto which shall read as follows:

While not intended to be inclusive of all Laws and Regulations for which Contractor is or may be responsible, the following Laws or Regulations are included herein by reference and compliance with same by Contractor is mandated by this Agreement:

- 1) Contractor shall not pay less than the prevailing rate of wages in accordance with O.C.G.A § 34-4-3;
- 2) Qualified employees may be relieved from work for up to two hours to vote as provided by O.C.G.A. § 21.2-404;
- 3) Contractor and its Subcontractors, as well as others for whom they are responsible, shall not engage in discrimination as prohibited by O.C.G.A. § 34-1-2 or as prohibited by any other state or federal Law or Regulation;
- 4) Contractor shall comply with all notification requirements for excavators as required by O.C.G.A. § 25-9-6;
- 5) Contractor shall register and participate in the electronic verification (“E-Verify”) of work authorization operated by the United States Department of Homeland Security or any equivalent federal work authorization program. The Contractor shall verify that its employees, and the employees of its Subcontractors, are in compliance with the Immigration Reform and Control Act of 1986, as required by applicable state law, including O.C.G.A. §13-10-91 et. seq. Contractor shall provide Owner and Engineer with executed affidavits verifying such employees’ compliance with the federal and state laws identified hereinabove. Contractor shall secure similar affidavits from all of its Subcontractors verifying their compliance with said federal and state laws. At all times applicable to this Agreement, and for not less than three years after final completion of the Project or for such longer time as may be required by law, Contractor shall maintain detailed records demonstrating compliance by it and its Subcontractors with these legal requirements.

SC-7.10 E. Paragraph 7.10 of the General Conditions is amended by the addition of the following subparagraph E. which shall read as follows:

Contractor shall cooperate with Owner in securing any tax refunds, credits, or rebates due Owner or in utilizing any tax exemptions available to Owner. Such cooperation shall include, but shall not be limited to, the execution of any required or necessary documentation.

7.11 RECORD DOCUMENTS

SC-7.11 A. Paragraph 7.11 A. of the General Conditions is amended by the addition of the following provision:

Receipt by Engineer of the record documents required herein is an express condition precedent for final payment to Contractor.

7.12 SAFETY AND PROTECTION

SC-7.12 H. Paragraph 7.12 of the General Conditions is amended by the addition of the following subparagraph H. which shall read as follows:

Contractor shall provide, erect, maintain and finally remove all barricades and detour signs necessary to properly protect and divert traffic. Such barricades and signs shall be illuminated at night. Contractor shall be responsible for all damage, including any damage to the Work, resulting from any failure of the signs or barricades to protect the Work or related property from traffic, pedestrians, and animals, or from other sources. All barricades shall be acceptable to Owner and same shall comply with any and all rules, regulations, or other legal mandates of any governmental authorities having applicable jurisdiction.

7.18 IDEMNIFICATION

SC-7.18 B. Paragraph 7.18 B. of the General Conditions is amended by the addition of the following provision:

Notwithstanding any other provision herein, no claim whatsoever shall be made by Contractor against any officer, employee, board member, or agent of Owner, on account of anything done or alleged to be done in breach of this Agreement.

ARTICLE 8 – OTHER WORK AT THE SITE

8.03 LEGAL RELATIONSHIPS

SC-8.03 B. Paragraph 8.03 B. of the General Conditions is amended by the addition of the following provision:

Furthermore, in the event the remaining contract balance is not sufficient to satisfy the damages due Owner after the set-off provided herein, Contractor shall promptly, upon demand of Owner, pay to Owner the remaining amount necessary to compensate Owner for said damages.

SC-8.03 C. Paragraph 8.03 C. of the General Conditions is amended by the addition of the following provision:

Furthermore, in the event the remaining contract balance is not sufficient to satisfy the damages due Owner after the set-off provided herein, Contractor shall promptly, upon demand of Owner, pay the remaining amount necessary to compensate Owner for said damages.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 COMMUNICATIONS TO CONTRACTOR

SC-9.01 A. Paragraph 9.01 A. of the General conditions is amended to read as follows:

Except as otherwise provided in the Contract Documents, or unless the Owner in its discretion determines to communicate otherwise, the Owner shall issue communications to Contractor through Engineer.

9.02 REPLACEMENT OF ENGINEER

SC-9.02 A. Paragraph 9.02 A. of the General Conditions is deleted in its entirety and in lieu thereof the following provision is inserted:

In case of termination of the Engineer, Owner may appoint a substitute Engineer whose status under the Contract Documents shall be that of the former Engineer.

9.04 PAY WHEN DUE

SC-9.04 A. Paragraph 9.04 A. of the General Conditions is amended by the addition of the following provision:

Notwithstanding any other provision of the Contract Documents, Owner and Contractor expressly agree that the terms of payment, payment period, and rates of interest set forth in this Agreement shall control to the exclusion of any provisions set forth in the Georgia Prompt Pay Act, O.C.G.A. § 13-11-1 et. seq. and the provisions of said Act are expressly waived.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 OWNER'S REPRESENTATIVE

SC-10.01 A. Paragraph 10.01 A of the General Conditions is amended to read as follows:

Engineer will be Owner's representative during construction unless otherwise directed in writing by Owner. Engineer shall not, however, be authorized to increase the Contract Price or the Contract Time, or to approve any Change Order, without Owner's express written consent. The duties and responsibilities of the Engineer are as set forth in the Contract Documents and will not be changed without written notice by Owner to Contractor.

10.02 VISITS TO SITE

SC-10.02 A. Paragraph 10.02 A. of the General Conditions is amended by the addition of the following provision:

Notwithstanding any other provision herein, nothing contained in the Contract Documents shall limit or restrict any duty or obligation owed by Engineer to Owner arising out of, or related to, the Engineer's contract with Owner for engineering services.

10.06 DETERMINATIONS FOR UNIT PRICE WORK

SC-10.06 A. Paragraph 10.06 A. of the General Conditions is amended by the addition of the following provision;

Owner, however, shall have the express right to challenge any such determination for good cause and may submit any such challenge in accordance with the claims provisions of this Agreement.

10.07 DECISIONS ON REQUIREMENTS OF CONTRACT DOCUMENTS AND ACCEPTABILITY OF WORK

SC-10.07 A. Paragraph 10.07 A. of the General Conditions is deleted in its entirety and in lieu thereof the following provision is inserted:

Engineer will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as Engineer may determine necessary which shall be consistent with the intent and reasonably inferable from the Contract Documents. Such written clarifications shall be binding on Owner and Contractor unless either one notifies the Engineer within 10 days of receipt of same. Any dispute concerning entitlement to additional compensation or time arising out of any such clarifications or interpretations, shall be submitted for determination in accordance with the claims provisions of this Agreement. If Owner requires, Contractor shall submit any claims, disputes or other matters relating to the Work, or to the requirements of the Contract Documents, to Engineer in writing for an initial decision. Such submission, if required by Owner, shall be a condition precedent to exercise by Contractor of any other rights or remedies provided by the Contract Documents or by law or equity with respect to any such claims, disputes or other matters.

10.08 LIMITATIONS ON ENGINEER'S AUTHORITY AND RESPONSIBILITIES

SC-10.08 B. Paragraph 10.08 B. of the General Conditions is amended by the addition of the following provision:

Notwithstanding any other provision of this Paragraph, and notwithstanding any other provision of the Contract Documents, nothing contained in this Agreement nor in any provision of the

Contract Documents, shall limit or restrict in any manner whatsoever the duties, obligations or responsibilities of the Engineer to Owner as set forth in the contract by and between Owner and Engineer or as provided by law or equity.

SC-10.08 E. Paragraph 10.08 E. of the General Conditions is amended by the addition of the following provision:

Furthermore, it is expressly agreed that any Resident Project Representative shall not have authority to authorize any deviation from the Contract Documents or approve any substitution of materials or equipment; undertake any of the responsibilities of the Contractor, the Contractor's superintendent, or of any Subcontractor; accept submittals from anyone other than Contractor; authorize Owner to occupy the Project in whole or in part; or participate in specialized tests or inspections conducted by others except as expressly authorized by the Engineer.

ARTICLE 11 – AMENDING THE CONTACT DOCUMENTS; CHANGES IN THE WORK

11.09 OTHER

SC-11.09 A. Paragraph 11.09 A. is added to the General Conditions and said Paragraph shall read as follows:

Notwithstanding any other provision herein, Contractor acknowledges and agrees that some Change Orders (as determined by Owner in its discretion) shall require approval of Owner's Board of Directors. Contractor further agrees that Owner shall have not less than 60 days to submit any such Change Orders to its Board of Directors for approval or rejection. In no event and under no circumstances shall Contractor make any claim for delay, acceleration, interference, or other claim for damages, cost, or expense arising out of, or relating to, the time required to secure approval or rejection of any Change Order, so long as said approval or rejection is made by the Board of Directors within 60 days after submission of the applicable Change Order by Contractor.

ARTICLE 12 – CLAIMS

12.01 CLAIMS

SC-12.01 B. Paragraph 12.01 B. of the General Conditions is deleted in its entirety and in lieu thereof the following provision is inserted:

Owner shall notify Contractor in writing of any claim by Owner against Contractor and Owner may furnish Engineer a copy of such notice. Within 20 days after receipt of Owner's notice of claim, Contractor shall notify Owner and Engineer in writing that (i) Contractor is in agreement with the claim in its entirety and affirms that it will execute a Change Order confirming such agreement;

or, (ii) Contractor is in agreement with the claim in part, affirms that it will execute a Change Order confirming such partial agreement, and identifies with specificity any part or parts of the claim with which it disagrees and states the facts and circumstances which it contends supports such disagreement; or, (iii) Contractor is in disagreement with the claim in its entirety and states the facts and circumstances which it contends supports such disagreement. Failure by the Contractor to respond as required herein shall constitute full and complete acceptance of Owner's claim and agreement by Contractor with same in its entirety. Any claim by Contractor against Owner shall be initiated by written notice to Owner and Engineer within seven days after occurrence of the event, or the first appearance of the condition, giving rise to such claim. Such notice must be specifically identified as a "Notice of Claim." If required, such notice shall be on a form specified by Owner. Furthermore, within 20 days after submission of the notice required herein, Contractor shall submit in writing a detailed statement of the claim which shall be in such form, and which shall include such supporting documentation, as Owner or Engineer may require. Any such claim by Contractor shall be signed under oath and under penalty of perjury. Any claim shall state with specificity any damages claimed or proposed increases to the Contract Price. In the event Contractor requests any increase in the Contract Time, it shall submit, as part of its written claim, a detailed critical path method schedule showing with specificity how the critical path of the Project has been impacted as a result of the items set forth in the claim. FAILURE BY CONTRACTOR TO SUBMIT ANY CLAIM IN STRICT CONFORMITY WITH THE REQUIREMENTS OF THIS PROVISION SHALL CONSTITUTE AN ABSOLUTE AND UNEQUIVOCAL WAIVER OF SUCH CLAIM. Contractor may not reserve in any claim, or in any Change Order, any rights or remedies to make claim for additional money or time arising out of the occurrence, events, or conditions giving rise to the claim. Reservation of the right to claim future impact damages is expressly and unequivocally prohibited. Pending final resolution of any claim of Contractor or Owner, Contractor shall diligently proceed with performance of this Agreement unless directed otherwise by Owner in writing, and Owner shall continue to make payment of all sums due Contractor in accordance with this Agreement. The resolution of any claim under this Paragraph shall be documented by Change Order executed by the parties.

SC-12.01 D. Paragraph 12.01 D of the General Conditions is deleted in its entirety.

SC-12.01 E. Paragraph 12.01 E of the General Conditions is deleted in its entirety.

SC-12.01 F. Paragraph 12.01 F of the General Conditions is deleted in its entirety.

SC-12.01 G. Paragraph 12.01 G of the General Conditions is deleted in its entirety.

12.02 OTHER JURISDICTION

SC-12.02 A. Paragraph 12.02 A. is added to the General Conditions and said Paragraph shall read as follows:

The Superior Court of Clayton County, Georgia, shall have sole and exclusive jurisdiction and venue over any action arising out of, or relating to, this Agreement and the parties expressly waive jurisdiction and venue in any other court and waive any right of removal to any federal court. Furthermore, in the event Owner institutes any action against Contractor arising out of, or relating to, this Agreement, and the event Owner prevails in whole or in part in any such action, or in the event Contractor asserts any claim against Owner in any legal proceeding and such claim is determined to be invalid in whole or in part, Contractor shall pay all of Owner's costs and expense incurred in prosecuting or defending any such action or proceeding including, but not limited to, all attorneys' fees and expenses, expert and consultants' fees and expenses, and court costs.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 COST OF THE WORK

SC-13.01 C. Paragraph 13.01 C. of the General Conditions is amended by the addition of subparagraph 6. which shall read as follows:

Notwithstanding any other provision of this Agreement, in no event, and under no circumstances, shall "costs" include, nor shall Contractor make claim for or be entitled to recover, any home office overhead expense; loss of capital; loss of profit on other projects; loss of efficiency or productivity; loss of bonding capacity; or any consequential damage of any kind or nature.

13.03 UNIT PRICE WORK

SC-13.03 F. Paragraph 13.03 of the General Conditions is amended by the addition of subparagraph F. thereto which shall read as follows:

Notwithstanding any other provision herein, in the event of any adjustment to unit prices as set forth hereinabove, such adjustment shall only apply to variations above 125 percent or below 75 percent of the estimated units set forth in the Contract Documents. Contractor shall make no claim for an increase in the Contract Time based on an increase in units unless the number of units actually installed exceeds 125 percent of those estimated in the Contract Documents.

ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.03 DEFECTIVE WORK

SC-14.03 B. Paragraph 14.03 B. of the General Conditions is amended by the addition of the following provision:

Furthermore, Owner shall likewise have the right to determine and reject defective work.

SC-14.03 G. Paragraph 14.03 of the General Conditions is amended by the addition of subparagraph G. thereto which shall read as follows:

Notwithstanding any other provision of this Agreement, Contractor acknowledges and agrees that any failure of Owner or Engineer to notify Contractor of defective Work, or any lack of receipt by Contractor of any such notice, shall in no manner whatsoever relieve or discharge Contractor from its obligation to perform the Work in conformity with the Contract Documents or its obligation to remove, repair, or correct defective Work.

14.06 OWNER MAY STOP THE WORK

SC-14.06 A. Paragraph 14.06 A of the General Conditions is deleted in its entirety and in lieu thereof the following provision is inserted:

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, or Contractor otherwise is in material breach of this Agreement, then 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.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 PROGRESS PAYMENTS

SC-15.01 B. Paragraph 15.01 B. of the General Conditions is deleted in its entirety and in lieu thereof the following provision is inserted:

At least 30 days before the date established for each progress payment (but not more than once each month), Contractor shall submit to Owner and Engineer for review an Application for Payment filled out and signed by Contractor covering Work completed as of the date of the Application and accompanied by such supporting documentation as required by the Contract Documents or as may be otherwise specified by Owner or Engineer. In its Application for Payment, Contractor may request payment for 90 percent of that portion of the Contract Price properly applicable to Contract requirements properly provided, labor, materials and equipment properly incorporated in the Work, plus 90 percent of that portion of the Contract Price properly allocable to materials or equipment properly stored on-site (or elsewhere if approved in advance in writing by Owner) for subsequent incorporation in the Work, less the total amount of previous payments received from Owner. Payment for stored materials and equipment shall be conditioned upon proof of appropriate property insurance or other arrangements to protect Owner's interest

therein, all of which must be satisfactory to Owner. Each Application for Payment shall constitute Contractor's representation that the Work has progressed to the level for which payment is requested in accordance with the schedule of values, that the Work has been properly installed or performed in full accordance with the requirements of the Contract Documents, and the Contractor knows of no reason why payment should not be made as requested. Thereafter the Engineer shall review the Application for Payment and may also review the Work at the Project site or elsewhere to determine the quantity and quality of the Work as represented in the Application for Payment and as required by the Contract Documents. Engineer shall determine and recommend to Owner the amount owing to Contractor. Owner shall make partial payments on account of the Contract Price to Contractor within 30 days following Owner's receipt of each Application for Payment with Engineer's approval. The amount of each partial payment shall be in the amount recommended by Engineer less such amounts, if any, otherwise owing by Contractor to Owner or which Owner shall have the right to withhold as authorized by this Agreement. Any recommendation by Engineer for payment to Contractor shall not preclude Owner from the exercise of any of its rights as set forth in this Agreement. Provided, however, that when 50 percent of the contract value, including Change Orders and other additions to the contract value, provided for by the Contract Documents is due, and the manner of completion of the Contract Work and its progress are reasonably satisfactory to Owner, Owner shall withhold no more retainage. At the discretion of Owner, and with the approval of Contractor, the retainage of any Subcontractor may be released separately as the Subcontractor completes its work. If after discontinuing the retainage, Owner determines that the Work is unsatisfactory or Contractor has fallen behind schedule, Owner may resume retainage at the rate set forth hereinabove. Retainage shall be invested at the current market rate and any interest earned on the retained amounts shall be paid to Contractor upon completion of the Project within the time specified and for the Contract Price as same may have been amended by Change Order. For purposes of this Agreement, the terms and conditions of O.C.G.A. § 13-10-20 are herein incorporated by reference and shall take precedence over, and shall control, any other terms or conditions in the Contract Documents.

SC-15.01 D. Paragraph 15.01 D. of the General Conditions is amended by the deletion of the phrase "Ten days" and the substitution in lieu thereof of the phrase "Thirty days". Additionally, the following provision is added to said Paragraph and shall state as follows:

Within three days of receipt of payment from Owner, Contractor shall pay all Subcontractors and Suppliers whose work or products was included in the partial payment. If Owner fails to make any payment as provided herein, or as required elsewhere in the Contract Documents, interest shall accrue on any such payment, to the extent it is late, at a rate to be negotiated between Owner and Contractor.

SC-15.01 E. Paragraph 15.01 E. of the General Conditions is amended by the addition of the subparagraph 4. Thereto which shall state as follows:

In addition to the right to reduce or withhold payment as set forth hereinabove, Owner may furthermore demand return of some or all of the amounts previously paid to Contractor in order to protect Owner from the risk of loss arising from any of the items set forth in this Paragraph 15.01 E. In the event Owner makes demand upon Contractor for the return of any such amounts, Contractor shall promptly comply with such demand.

15.03 SUBSTANTIAL COMPLETION

SC-15.03 A. Paragraph 15.03 A. of the General Conditions is deleted in its entirety and in lieu thereof the following provision is inserted:

When Contractor believes that the Work is Substantially Complete, it shall submit to Engineer and Owner a list of items to be completed or corrected prior to Final Completion. When Engineer, on the basis of an inspection, determines that the Work is in fact Substantially Complete, it will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall state the responsibilities of Owner and Contractor for Project security, maintenance, utilities, damage to Work, and insurance, and shall fix the time in which Contractor shall complete the items listed therein or any other items required for Final Completion. The Certificate of Substantial Completion shall be submitted to Owner and Contractor for their written acceptance of the responsibilities assigned to them in such certificate. Upon Substantial Completion of the Work, and after execution by both Owner and Contractor of the Certificate of Substantial Completion, Owner shall pay Contractor an amount sufficient to increase total payments to Contractor to 100 percent of the Contract Price less 200 percent of the reasonable costs as determined by Owner, with advice of the Engineer, for completing all incomplete Work, correcting and bringing into conformance all defective and nonconforming Work, handling all unsettled claims, and performing any other remaining obligations of Contractor under the Contract Documents.

SC-15.03 B. Paragraph 15.03 B. of the General Conditions is deleted in its entirety.

SC-15.03 C. Paragraph 15.03 C. of the General Conditions is deleted in its entirety.

15.04 PARTIAL USE OR OCCUPANCY

SC-15.04 A.2. Paragraph 15.04 A.2. of the General Conditions is deleted in its entirety.

15.06 FINAL PAYMENT

SC-15.06 D. Paragraph 15.06 D. of the General Conditions is amended by the addition of the following provision:

Notwithstanding any other provision herein, Owner shall not be required to make payment of amounts which are the subject of a good faith dispute by and between Owner and Contractor.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.02 OWNER MAY TERMINATE FOR CAUSE

SC-16.02 E. Paragraph 16.02 E. of the General Conditions is amended by the deletion of the following provision:

Such claims, costs, losses, and damages incurred by the Owner will be reviewed by the Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order.

SC-16.02 G. Paragraph 16.02 G. of the General Conditions is deleted in its entirety.

16.03 OWNER MAY TERMINATE FOR CONVENIENCE

SC-16.03. Paragraph 16.03 of the General Conditions is deleted in its entirety and in lieu thereof the following provision is inserted:

A. Owner may for any reason terminate performance under this Agreement by Contractor for convenience. Owner shall give written notice of such termination to Contractor specifying when termination becomes effective. Contractor shall incur no further obligations in connection with the Work and Contractor shall stop work when such termination becomes effective. Contractor shall also terminate outstanding orders and subcontracts unless instructed otherwise by Owner. Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders. Owner may direct Contractor to assign Contractor's right, title, and interest under any subcontracts to Owner or its designee. Contractor shall transfer title and deliver to Owner such completed or partially completed Work and materials, equipment for installation, parts, fixtures, information and contract rights which Contractor has or possesses.

B. Contractor shall submit a written termination claim to Owner and Engineer specifying the amounts due because of the termination for convenience together with costs, pricing, or other data as may be required by Owner or Engineer. If Contractor fails to file a termination claim within 60 days from the effective date of termination, Owner may in its sole discretion deem any such claim to be waived by Contractor, and Owner shall owe no further sums of any kind or nature to Contractor. Absent agreement to the amount due Contractor, and absent a waiver as set forth hereinabove, Owner shall pay Contractor, within 60 days after submission of a proper and verified claim, with such reasonable documentation as Owner or Engineer may require, the following amounts which shall constitute full and complete compensation to Contractor for all sums due under this Agreement, including all sums arising out of, or relating to, the termination for convenience: (1) contract prices for labor, materials, equipment and other services accepted under this Agreement; (2) reasonable costs incurred in preparing to perform and in performing the terminated portion of the Work, and in terminating the Contractor's performance, plus a fair and reasonable allowance for overhead and profit thereon (such profits do not include anticipated

profits, anticipated overhead, or consequential damages of any kind or nature); provided, however, if it appears that Contractor would not have profited, or would have sustained a loss if the entire Agreement would have been completed, no profit shall be allowed or included and the amount of any compensation shall be reduced to reflect the anticipated rate of loss, if any; (3) reasonable costs of settling and paying claims arising out of the termination of subcontracts or orders as required hereinabove. The total sum to be paid Contractor under this Paragraph shall not exceed the Contract Price, as properly adjusted by Change Orders, reduced by the amount of payments otherwise made, and shall in no event include any duplication of payment.

C. In the event the employment of Contractor is terminated for cause pursuant to Paragraph 16.02 of this Agreement hereinabove, and in the further event it is subsequently determined by a Court of competent jurisdiction, or by an arbitrator or arbitration panel, that such termination was without cause, such termination shall thereupon be deemed and treated as a termination for convenience under this Paragraph 16.03 and the provisions of this Paragraph shall apply.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 METHODS AND PROCEDURES

SC-17.01. Paragraph 17.01 of the General Conditions is deleted in its entirety.

ARTICLE 18 – MISCELLANEOUS

18.01 GIVING NOTICE

SC-18.01 A. Paragraph 18.01 A. of the General Conditions is amended by the addition of the following subparagraph 3. which shall state as follows:

Regardless of how it is sent or delivered, written notice shall be effective for all purposes of this Agreement if same is received by an officer or designated representative of the party to whom such notice was addressed.

ARTICLE 19 – OTHER

19.01 CONFLICT OF INTEREST

SC-19.01 A. The General Conditions are amended by the addition of Paragraph 19.01 A. which shall read as follows:

No official of Owner who is authorized in such capacity and on behalf of Owner to negotiate, make, accept, or approve, or to take any part in negotiating, making, accepting, or approving any

architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the Project, shall become directly or indirectly interested personally in this Agreement or any part thereof. No officer, employee, architect, attorney, engineer or inspector of or for Owner who is authorized in such capacity and on behalf of Owner to exercise any legislative, executive, supervisory or similar functions in connection with construction of the Project shall become directly or indirectly interested personally in this Agreement or in any part thereof or in any material supply contract, subcontract, insurance contract, or any other contract pertaining to the Project.

SUPPLEMENTS

The supplement listed below, following “END OF SECTION”, is part of this Specification.

Exhibit ‘A’ – Additional Insurance Requirements

END OF SECTION

EXHIBIT "A"
ADDITIONAL INSURANCE REQUIREMENTS

1.01 In addition to any other coverage required by the Contract Documents, Contractor shall provide, and shall require its Subcontractors to provide, unless otherwise agreed by Owner in writing, the following insurance coverage:

Workers' Compensation and Employers Liability:

Workers' Compensation

Statutory Limits

Employers Liability

\$1,000,000 Each Accident

\$1,000,000 Disease Employee Limit

\$1,000,000 Each Employee

The policy will include an "Alternate Employer Endorsement" naming Owner as the Alternate Employer. The policy will be amended to provide 90 days' notice to Owner in the event of cancellation or nonrenewal. The policy will include Terrorism Peril Coverage.

Commercial General Liability:

The Policy will be on an Occurrence Form with no less than the following limits:

\$1,000,000 Per Occurrence Limit

\$1,000,000 Personal and Advertising Injury Limit

\$1,000,000 Fire Damage

\$5,000 Medical Expense Limit Per Person

\$2,000,000 General Aggregate

\$2,000,000 Products / Completed Operations – Per Occurrence and Aggregate

The policy will include the following:

- 1) Contractual Liability covering this Contract;

- 2) The policy will cover explosion, collapse and underground coverage;
- 3) The General Aggregate will be per project;
- 4) The policy will include Cross Liability (Separation of Insureds) coverage;
- 5) The policy will be amended to require 90 days' notice to Owner and Engineer in the event of cancellation or nonrenewal;
- 6) The policy will be amended by naming the Owner and Engineer as additional insureds for Primary Coverage and the Additional Insured Endorsement will cover Operations and Products and Completed Operations;
- 7) The Owner's Protective Liability policy will be in excess of this Commercial General Liability policy.
- 8) The Contractor shall furnish a certificate of continuing Products and Completed Operations coverage for a period of five years after completion or amend the current policy to include an Extended Reporting Period of five years after completion;
- 9) This policy will include Terrorism Peril Coverage.

Automobile Liability:

Automobile Liability Coverage including Owned, Hired, and Non-owned vehicles with a Combined Single Limit (CSL) of \$1,000,000, with \$500,000 per person, \$500,000 per occurrence, \$100,000 Property damage, and \$1,000 medical payments. The policy will be amended to provide 90 days' notice to Owner in the event of cancellation or nonrenewal. This policy will include Terrorism Peril Coverage.

Umbrella Liability (Occurrence Form):

An Umbrella or Excess Liability policy will be provided. Such policy will be excess over Employers Liability, Commercial General Liability, and Automobile Liability. The policy will include Cross Liability (Separation of Insureds) and 90 days' notice to Owner in the event of cancellation or nonrenewal. The total limit of coverage, when combined with the underlying, will be not less than \$5,000,000 per Occurrence and Aggregate. The certificate of insurance will include a copy of the endorsement providing that the policy is excess to the underlying coverage with coverage exceptions identified. This policy will include Terrorism Peril Coverage.

Owner's Protective Liability:

The Contractor will furnish Owner's Protective Liability with a limit of \$2,000,000. Coverage should be project specific, stand-alone policy, naming project owner and principal as named insured. This policy will include Terrorism Peril Coverage.

Contractor's Pollution Liability (Occurrence Form):

The Contractor will provide a Contractor's Pollution Liability policy written on an "occurrence form" with an occurrence limit of not less than \$2,000,000 per Occurrence. The Owner, and such others as Owner shall designate, will be named as additional insureds. This policy will include Terrorism Peril Coverage.

1.02 In addition to the coverage requirements set forth hereinabove, the following insurance requirements shall be applicable unless provided otherwise in the Contract Documents:

- A. Contractor shall purchase and maintain property insurance upon the Work at the Project Site in the amount of the Contract Price, including as may be adjusted by Change Order, or for full replacement cost, whichever is greater. The property insurance shall contain no partial occupancy restriction for utilization of the Project by Owner for its intended purpose;
- B. With respect to all insurance policies and all insurance coverage required to be furnished by Contractor, Contractor shall provide Owner and Engineer prior to performing any Work on the Project certificates of insurance indicating the applicable coverage and all required endorsements. Upon request by Owner or Engineer, Contractor shall furnish a complete copy of any required policy;
- C. Unless otherwise agreed in writing, the Owner, Engineer, and Engineer's Consultants shall be named as additional insureds on all policies of insurance required to be furnished by Contractor. The additional insureds shall be listed by endorsement which shall include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of such additional insureds, and the insurance afforded to these additional insureds shall provide primary and noncontributory coverage for all claims covered thereby;
- D. To the extent any of the policies of insurance furnished by Contractor contain deductibles in any amount, Contractor shall be liable for, and shall pay, any such deductible amounts;
- E. With respect to all insurance required from Contractor by any of the Contract Documents, Contractor waives, and will require by endorsement its insurance carriers to waive, any and all rights of subrogation against Owner, Engineer and each additional named insured on any applicable policy;
- F. Nothing contained in any policy of insurance, nor any of the insurance requirements set forth in the Contract Documents, shall in any way limit, restrict, or release Contractor

from any of its duties, obligations, or liabilities arising under or relating to the Contract Documents.

END OF EXHIBIT

SECTION 01 00 00

GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

<u>Paragraph</u>	<u>Title</u>
1.2	References
1.3	System Description
1.4	Contract Drawings
1.5	Submittals
3.1	Use of Premises
3.2	Aid to the Injured
3.3	Buildings and Shanties
3.4	Cleaning
3.5	Cleaning Surfaces
3.6	Dimensions and Elevations
3.7	Emergency Response
3.8	Environmental Contamination
3.9	Existing Utilities
3.10	Inspections
3.11	Insufficiency of Safety Precautions
3.12	Intoxicating Liquors
3.13	Landscape Protection
3.14	Means and Methods
3.15	Measures and Weights
3.16	Mill and Shop Tests and Inspections
3.17	Obstructions Encountered
3.18	Time of Work and Overtime Work
3.19	Ownership of Materials
3.20	Painting and Coatings
3.21	Power
3.22	Protecting Existing Buildings and Structures
3.23	Protection
3.24	Record Drawings
3.25	Safety
3.26	Sales Tax

3.27	Sanitary Measures
3.28	Shoring, Formwork, and Temporary Structures
3.29	Site Video
3.30	Sound Attenuation
3.31	Storage
3.32	Temporary Heat
3.33	Use of Facilities
3.34	Utility Relocations or Modifications
3.35	Water Supply
3.36	Work in Inclement Weather

1.2 REFERENCES

- A. Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the documents before it was discontinued shall apply.
- B. These Specifications contain references to the entities identified in Section 01 42 19 – Codes and Standards. They are a part of these Specifications as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

1.3 SYSTEM DESCRIPTION

- A. Performance Requirements
 - 1. The Work shall be comprised of and for the construction of the Owner’s infrastructure as identified in the Bid Schedule, including but not limited to, safety, installation, connections, testing, and fabrication with any and all appurtenances in accordance with the Contract Documents, complete and fully operational in compliance with federal, state, county, and local codes and regulations, standards, and specifications as applicable at the time of bid unless otherwise directed in writing by the Owner.

1.4 CONTRACT DRAWINGS

- A. Existing conditions shown on the contract drawings were derived from the best available information at the time and preparation of the Contract Documents and do not purport to be completely correct. The Contractor is therefore directed to perform any and all field surveys that are deemed necessary to satisfy himself/herself of the actual surface and sub-surface conditions prior to submitting his/her bid, upon which his/her bid shall be based.
- B. The Work proposed was based on the available information of the existing conditions. The Contractor shall field verify the nature and extent of the Work proposed prior to ordering any materials. No payment shall be authorized for materials not retained as part of the Owner’s facilities and its appurtenances.
- C. Additionally, the Owner reserves the right to require deviations from the Contract during construction where such deviations are deemed necessary to provide for flexibility in the

maintenance and operation of the system and increase the efficiency and reliability. Deviations will be addressed in accordance with Article 11 of the General Conditions.

- D. The Contractor shall maintain, on site, one (1) complete set of Contract Documents throughout the course of the Work and make available upon request to the Owner.

1.5 SUBMITTALS

- A. Submittals specified for submission shall be by the Contractor only to Owner or its Engineer as specified.
- B. Each submittal, with variations from the requirements of the Contract Documents, shall make specific mention of such variations. Those declared variations found acceptable by Engineer and Owner shall require the Contractor to take suitable action for the proper installation in accordance with the Contract Documents. Variation not declared or suitable action not taken by the Contractor shall not relieve him/her of the responsibility for executing the Work or error and cost for remedial actions deemed necessary by the Owner.

PART 2 PRODUCTS – (NOT USED)

PART 3 EXECUTION

3.1 USE OF PREMISESS

- A. Confine operations at the site to areas permitted by law, ordinances, permits, and contract documents.
- B. Do not unreasonably encumber premises with materials or equipment.
- C. Do not load structures with weight that will endanger structure. Assume full responsibility for protection and safekeeping of products and equipment stored on premises.
- D. Maintain the premises in clean and safe condition at all times.
- E. The contract operations should not cause any hindrance, nuisance, lack of safety, blocked means of entrance and exit, damage to property and person, disruption of utilities, excessive and offensive noise and dust to any of the adjoining properties and persons. Remove such condition forthwith, should they occur, and repair or replace the damage at own cost to the approval of the Engineer.
- F. Provide access to Owner's authorized persons and the police, fire or other departments having legal jurisdiction to the site at all times and provide cooperation in their work.

3.2 AID TO THE INJURED

- A. Furnish, maintain, and make ready and available for immediate use, first aid to the injured with standing arrangements for the immediate removal, transport, and hospital treatment of any personnel who may be injured on the Work, as required by federal, state, county and local laws, codes and regulations.

3.3 BUILDINGS AND SHANTIES

- A. Do not allow for the housing of men/women employed for the Work on land owned or leased by the Owner, unless a written permit is secured from the Owner. Should permission be asked and granted, comply with all regulations regarding the construction and maintenance of such buildings.

3.4 CLEANING

- A. With completion of the Work, return the surface conditions of the work area to pre-work status, unless where otherwise specified in the Contract Documents.

- B. Leave the grounds in a neat and approved condition, including but not limited to, the removal of material, debris, equipment, structures, and the Contractor's office.
- C. Terminate all temporary utilities as applicable or as required by the Contract Documents.
- D. Clean out all drains, pipes, inlets, and miscellaneous and appurtenant structures of debris from construction operations.

3.5 CLEANING SURFACES

- A. To the extent necessary, wire brush and wash contact surfaces between existing and new Work to be free from debris, dirt, grease, or foreign matter.
- B. Prepare such surfaces as recommended by the manufacturer or directed by the Owner.
- C. Include the cost for cleaning in the Prices Bid and stipulated for the various items of the bid.

3.6 DIMENSIONS AND ELEVATIONS

- A. In the Contract Documents precedence is as follows:
 - 1. Figured dimensions over scaled dimensions
 - 2. Detailed drawings over general drawings
- B. Use Georgia State Plane Coordinate system where coordinates are denoted.
- C. Use the vertical datum identified in the Contract Documents where elevations are denoted.

3.7 EMERGENCY RESPONSE

- A. Respond within one (1) hour to any emergency that may arise in connection with the Work on a twenty-four (24) hour per day, seven (7) days per week basis. Should the Owner's maintenance forces be called upon by the Owner to rectify a problem created by the Contractor, the Contractor shall be responsible for all costs incurred by the Owner, plus twenty-five (25) percent, with a minimum charge of one hundred (100) dollars per occurrence. This charge shall be subject to change depending upon the severity of the emergency and shall be determined by the Owner

3.8 ENVIRONMENTAL CONTAMINATION

- A. During the course of the Work, take precautions against property endangerment and/or damages from water, sewage, seepage, storm, storm water, and flood flows. Cost for precautions shall be included in the Prices Bid and stipulated for the items of Work. The Contractor is responsible for any and all contamination during and/or due to the project.

3.9 EXISTING UTILITIES

- A. Contractor is solely responsible for having utilities located prior to beginning work.
- B. Maintain existing utilities, except when a utility or a utility feature requires moving. In such circumstances, notify the utility before any such Work is started for approval.
- C. In the event that the utility grants approval for such movement that results in damage, it shall be repaired by the authorities having control of the same, and the expense of said repairs shall be paid by the Contractor or deducted from the monies which are due or to become due to said Contractor.
- D. Do not disturb any underground or overhead facilities encountered without proper authority and then only in such manner as said owner may prescribe and approve.

- E. Should it become necessary to change the position, or permanently or temporarily remove part of a utility in order to clear the structure being built or to permit the Contractor to use a particular method of construction, notify the Owner of the utility of the location and circumstances and cease work if necessary, until satisfactory arrangements have been made by the Owners of the utility to properly care for or relocate the same as necessary to permit the Work to proceed as specified. No claims for damages shall be allowed the Contractor on account of any delay occasioned thereby. The entire cost of the changes or temporary or permanent removal of such utilities shall be borne by the Contractor and the cost thereof shall be included in the Prices Bid and stipulated for the various Items of the Bid.
- F. Nothing contained herein shall relieve the Contractor of doing such Work at his cost and expense as is specifically included in the Contract Documents.
- G. Anything contained herein shall not relieve the Contractor of his obligation to support and protect all pipes, conduits, and other structures which may be encountered during the construction of Work, and to make good all damages done to such pipes, conduits, and other structures, as provided in this specifications. Any such damages must be repaired without delay and the cost of such repairs must be borne by the Contractor.

3.10 INSPECTIONS

- A. Schedule a pre-construction meeting with the Owner a minimum of one (1) week prior to construction.
- B. During construction, the Owner's Inspector shall be the lead person for scheduling, coordination, overseeing, and witnessing including but not limited to, taps, cores, bores, wet-cut-ins, flow diversions, shutdowns testing, chlorination, sampling, and work that may be required or determined necessary by the Owner. Notify the Owner's Inspector for approval should existing conditions necessitate a change or cost to the Contract Documents prior to proceeding.
- C. The Owner's Inspector shall review and approve unit items installed in the Work by the Contractor prior to his/her submittal for payment to the Owner. Failure to do so may result in delays in processing payments.
- D. Upon notification by the Contractor, the Owner shall perform an inspection of the finished surface features and conditions for acceptance of the Work. Should discrepancies exist, make restorations as directed, until acceptance is granted by the Owner, upon which final payment shall be made for the Work.
- E. Pay for second inspections, if so required by the Owner.

3.11 INSUFFICIENCY OF SAFETY PRECAUTIONS

- A. If at any time, in the opinion of the Owner, the Work is not properly instituted or maintained and is not in accordance with federal, state, county and local laws, codes and regulations, the Contractor shall execute immediate measures to bring into compliance unsatisfactory surroundings. In the event that the Contractor is not readily available at the Work to be notified of the insufficiency of safety precautions, then the Owner may elect to institute or restore such Work to a state deemed safe. Such actions by the Owner shall in no way release the Contractor from his/her judiciary duty specified. Costs to correct safety precautions shall be at the Contractor's expense

3.12 INTOXICATING LIQUORS

- A. Neither permit nor suffer the introduction or use of intoxicating substances, such as but not limited to, alcohol or illegal drugs upon or about the Work jobsite. Do not allow intoxicated person on the job site.

3.13 LANDSCAPE PROTECTION

- A. Do not remove or disturb without approval from the Owner landscaping, such as but not limited to, ornamental trees, shrubbery, hedges, flower beds, decorative berms, decorative rocks, ponds, timbers, and their appurtenances.
- B. Should it be required to remove or disturb such items, seek approval at least 72 hours in advance of conflict. If and when approval is granted by the Owner, take the proper precautions to preserve, protect, and reestablish such items along the line of or contiguous to the Work.
- C. If deemed damaged by the Owner, replace each item damaged with the same type and like size.
- D. Cost for removal and relocation shall be considered as having been included in the Prices Bid and stipulated for the various items of Work. Cost for restitution shall be borne by the Contractor.

3.14 MEANS AND METHODS

- A. Unless otherwise expressly provided in the Contract Documents, the means and methods of construction shall be such as the Contractor may choose. However, the Owner maintains the right to reject or alter the Contractor's proposed means and methods, which shall not produce finished Work in accordance with the terms of the Contract, or to the Owner's right as administrator of the construction to direct the Contractor to more stringent means or methods.
- B. If determined by the Owner that the Contractor's work methods, features, and/or equipment appear to be unsafe, insufficient, or improper, the Owner may order the Contractor to improve their safety, sufficiency, and/or character, whereby the Contractor shall conform to such orders; but should the Owner not demand any increase of such safety precautions, insufficiency, inadequacy or any improvement, such inaction shall not release the Contractor from his obligation to secure the work methods, safety precautions, work features, and/or equipment for the safe conduct and quality of work specified, and shall not constitute a cause of action for damages.
- C. The Contractor shall have the right to deny access to the Work during construction except to third parties to inspect, certify, or observe when required by law; or to those who require reasonable access to the Work by reason of specific contractual relationship to the Work.

3.15 MEASURES AND WEIGHTS

- A. Whenever so requested as deemed necessary by the Owner, provide accurate scales, adequate equipment, and the necessary assistance for weighing and/or measuring materials for the installed Work as specified.
- B. It is understood and agreed that a "ton" shall mean the short ton of two thousand (2,000) pounds.

3.16 MILL AND SHOP TESTS AND INSPECTIONS

- A. Where the specifications call for mill or shop tests, furnish triplicate copies of attested certificates signed by a duly authorized representative of the manufacturer, showing details of quality or performance sufficient to demonstrate compliance with the Contract Documents.
- B. Make inspection of materials as required by these Specifications.

3.17 OBSTRUCTIONS ENCOUNTERED

- A. Support and protect all pipes, conduits, and other structures which may be encountered during the construction of Work, and make good all damages done to such pipes, conduits, and other structures, as provided in this Specification whether shown or not in the Contract Documents.
- B. Locate obstructions ahead of the Work. Immediately notify the Owner should it be determined that the existing information is not correct and an obstruction shall be encountered.

3.18 TIME OF WORK AND OVERTIME WORK

- A. It is the intent of the contract that the Contractor provide sufficient work force at all times during normal working hours and days of each week to complete the Work without resort to overtime work.
- B. The definition of normal working hours and days is an eight (8) hour day, Monday through Friday, trade recognized legal holidays excepted, during a consecutive period as agreed upon in the area of the Work, not counting the lunch period.
- C. The definition of normal work week is the aggregate of the five (5) consecutive eight (8) hour days, Monday through Friday inclusive, maximum, the same holidays excepted.
- D. Night work or work on Saturdays, Sundays, or trade recognized legal holidays, requiring the presence of the Owner's personnel or an inspector, shall not be permitted except in case of emergency, and then only to such extent as is absolutely necessary, and with the written permission of the Owner.
- E. The Contractor may request permission to work beyond these hours or on weekends or holidays for his/her convenience provided that all costs incurred by the Owner and/or Engineer for additional engineering and inspection services shall be borne by the Contractor.
 - 1. The Owner shall have the right to deduct sufficient sums from monies due the Contractor to cover these additional engineering and inspection costs.
- F. Weekend, night, or holiday work shall be approved in writing a minimum of 48 hours in advance.
- G. Should it become necessary for Work to be accomplished at the direction of the Owner for the convenience and/or requirement of the Owner outside of normal working hours, then full inspection and engineering shall be provided at no additional cost to the Contractor during those hours.
- H. During periods of overtime work, provide and maintain temporary lighting and all other necessary facilities required for work during normal working hours and for work at night. The Contractor shall be in readiness in time of emergency even nights, Saturdays, Sundays, and holidays at no cost to the Owner.
- I. Unless otherwise specifically permitted, stop all work that would be subject to damage during inclement, stormy or freezing weather. Only such work as will not suffer injury to workmanship or materials will be permitted. Protect work against damage or injury from the weather, and when work is permitted during freezing weather, provide and maintain approved facilities for heating the materials and for protecting the finished work.

3.19 OWNERSHIP OF MATERIALS

- A. Existing material removed that shall not be relocated or reused in the Work shall be moved off site within 48 hours, becoming the property of the Contractor, unless identified to be salvaged and returned to the Owner. The cost for such Work shall be as stipulated by the Prices Bid, for the various items of the Work.

- B. Existing material recovered that shall be relocated or reused in the Work shall be refurbished or renovated as required, unless otherwise directed by the Owner.
- C. Existing material removed shall be disposed of in a manner approved by the Owner at the Contractor's expense.
- D. New material not installed in the Work shall be moved offsite and remain the property of the Contractor. Only material that is installed by the Contractor will be paid for. However, the Contractor may submit pay applications for stored material in accordance with Section 15.01 of the General Conditions.

3.20 PAINTING AND COATINGS

- A. It is the intention of these Specifications that metal permanently installed in the Work shall be protected by a durable coating of paint, or other approved material as specified in Division 9 of these Specifications.
- B. All metal surfaces not buried in the earth or masonry shall be left clean and well painted at the completion of the Contract, in accordance with detailed requirements as may hereinafter be set forth.
- C. It is the intention of these Specifications that concrete or metal surface in corrosive environments shall be protected by a durable coating as specified in Division 9 of these Specifications.

3.21 POWER

- A. Make arrangements for power needed for construction activities. No payment shall be made for cost of obtaining power. The cost for power shall be as stipulated by the Prices Bid, for the various items of the Work.

3.22 PROTECTING EXISTING BUILDINGS AND STRUCTURES

- A. Take the necessary precautions to protect, including but not limited to, buildings, bridges, structures, and substantial walls or fences which may be encountered or endangered in the execution of the Work.
- B. Repair and make good any damages caused by reason of construction operations and restore such property to its state before the damages.
- C. Replace existing walls and fences that are removed due to the execution of the Work.
- D. Provide and install temporary fencing where required or directed by the Owner.
- E. Include all costs for protecting buildings and structures, replacement of walls and fences, and temporary fencing in the Prices Bid for the various items of Work.

3.23 PROTECTION

- A. Furnish and maintain satisfactory protection to the Work against injury by weather, flooding, or breakage thereby permitting all Work to be left in a perfect condition at the completion of the Work.

3.24 RECORD DRAWINGS

- A. Prepare, maintain, and furnish accurate redlined as-built drawings for the purpose of preparing record drawings in accordance with Section 01 78 39 – Record Documents.

3.25 SAFETY

- A. Unless otherwise specified comply with and maintain all federal, state, county, and local regulations during the course of the Work.

3.26 SALES TAX

- A. Furnish the Owner with certified copies of paid invoices or their equivalent proof covering sales tax paid on items which the Owner is eligible for tax refund; none of which shall be refunded or credited to the Contractor.

3.27 SANITARY MEASURES

- A. Provide sanitary conveniences prior to beginning the Work in sufficient number, in such manner and in such places as to satisfy the Owner. Operate and maintain sanitary conveniences in such a manner as to remove harmful effects to personnel or environment.
- B. All persons connected with the Work are obliged to use the conveniences provided and shall in no way violate these provisions. Immediately dismiss and remove employees from the Work for violations. Only upon written consent by Owner shall the violator regain access to the Work.
- C. Maintain sanitary conveniences during the Work in compliance with the local Health Department and the Owner.
- D. Upon completion of the Work, remove sanitary conveniences without deleterious effect.

3.28 SHORING, FORMWORK, AND TEMPORARY STRUCTURES

- A. The Contractor shall take full responsibility including the hiring of a practicing licensed professional engineer that may be needed for the adequacy and safety throughout erection, use and removal of all temporary Work such as shoring and supports during all phases of the Work, formwork, and supports for concrete, temporary protection, and structures of all kinds.

3.29 SITE VIDEO

- A. Prior to the Work, perform and supply the Owner a thoroughly detailed video of the worksite and its contiguous area.
- B. The video shall be of such quality as to view and establish existing conditions in detail and used to render a decision where no other documentation is available.

3.30 SOUND ATTENUATION

- A. During the course of the Work, comply with Clayton County Noise Ordinance unless the Owner enforces a stricter standard.
- B. Perform Work operations, machinery, equipment, and material handling in such a manner as to avoid and eliminate unnecessary noise.
- C. Immediately terminate noise deemed unacceptable by the Owner.

3.31 STORAGE

- A. Neatly and compactly pile, in such a manner as to cause the least inconvenience to property owners and traffic, materials, equipment, tools, and machinery required for the Work.
- B. Utilize areas approved by the Owner for storage.
- C. Maintain unobstructed access to fire hydrants, water and gas shut-off boxes, underground power and telephone line manholes, at all times.

3.32 TEMPORARY HEAT

- A. Supply temporary heat for such period of time and at such temperature as needed for the proper protection and execution of the Work.

B. Include cost for temporary heat in the Prices Bid for the various Work.

3.33 USE OF FACILITIES

A. The Owner shall have the right or grant permits to connect any conduit, pipe line, or structure with the Work and its appurtenances at any time before the Work is accepted. The Contractor shall not interfere or be granted compensation for such Work.

3.34 UTILITY RELOCATIONS OR MODIFICATIONS

A. Should, in the course of the Work, a need arise to relocate or modify a portion of the existing facilities, immediately notify the Owner for approval to proceed with such Work in accordance with the Contract Documents, or as directed by the Owner.

3.35 WATER SUPPLY

- A. The Owner shall make available all water required to execute the Work, at no cost to the Contractor. Contractor shall be responsible for providing the necessary equipment to transport the water from its source to the location of the work.
- B. Make the necessary provisions for the retrieval, transport, and delivery of such water with all means to protect and maintain the integrity of the Owner's water system in accordance with all applicable rules and regulations.

3.36 WORK IN INCLEMENT WEATHER

- A. Take into account historical weather conditions and potential difficulties that may be encountered for completing the Work demonstrated in the work schedule.
- B. Provide adequate protection against unfavorable weather to the satisfaction of the Owner.
- C. Weather shall not be grounds for contract extension of available work days, unless such should be most abnormal and then only when reasonable effort was exercised.

END OF SECTION

SECTION 01 11 00

SUMMARY OF WORK

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

<u>Paragraph</u>	<u>Title</u>
1.2	Work Covered by Contract Documents
1.3	Coordination
1.4	Site Conditions
1.5	Project Location
1.6	Quantities
1.7	Partial Owner Occupancy
1.8	Easements and Permits
1.9	Communications
1.10	Additional Engineering Services

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work to be performed under this Contract shall consist of furnishing all labor, materials, tools, equipment and incidentals and performing all Work required to construct the Hicks WPP Blower Upgrade complete in place, ready to operate and as shown on the Drawings and specified herein.

B. The Work can generally be described as consisting of:

1. Removal of the existing blower package, concrete equipment pad, and associated electrical components.
2. Modification to the existing air piping.
3. Installation of new concrete equipment pad for two blowers.
4. Installation of two package blower systems and associated air piping to connect to the existing air piping.
5. Installation of new blower control panel, conduit, and wiring.
6. Modifications to existing Motor Control Center.
7. Related appurtenant work for a complete and functioning system.

C. Related Requirements

1. Prepare and submit all required shop drawings of equipment and structural items to be furnished.
2. Clean all systems and piping and dispose of all waste materials.
3. Identify and tag all new equipment and piping.
4. Label all electrical and control wiring on both ends
5. Perform all warranty work.

D. Perform all work as shown on the Drawings and as specified.

1.3 COORDINATION

- A. Coordinate any equipment shutdowns or valve closures necessary for completing the work with the Owner. Do not operate any existing equipment or valves without prior approval of the Owner.

1.4 SITE CONDITIONS

- A. Accept the project site in "as is" condition.
- B. Verify all the existing conditions and those for the existing work to be reused or altered.
- C. Include the costs of all required modifications or replacements in accordance with the bid schedule and specification sections.
- D. The dimensions and counts provided on the drawings and in the specifications are for assistance in bidding. Inspect the site, take necessary measurements and counts and familiarize oneself with all the job conditions prior to bidding. The Contractor must visit the project site prior to submitting a bid.

1.5 PROJECT LOCATION

- A. The equipment and materials to be furnished will be installed at the locations shown on the Drawings. The project site is located in Clayton County, Georgia at the Hicks WPP (1693 Freeman Road, Jonesboro, GA 30236).

1.6 QUANTITIES

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

1.7 PARTIAL OWNER OCCUPANCY

- A. The existing facilities to which these improvements are being made will continue operation during the period of construction. The facilities and structures which are being constructed under this Contract will ultimately be transferred to the Owner. Whenever, in the opinion of the Owner or Engineer, any section or portion of the Work or any structure is in suitable condition, it may be put into use upon the written order of the Owner or Engineer and such usage shall not be held in any way as an acceptance of said Work or structure, or any part thereof, or as a waiver of any of the provisions of these Specifications and the Contract

1.8 EASEMENTS AND PERMITS

- A. The anticipated necessary permits listed are the responsibility of the Owner and their status is as follows. Fees for Building Permits, if necessary, are paid for by the Contractor, upon acquisition of the permit.
 - 1. No permits are required for this work.
- B. No easements are need for the execution of this work.

1.9 COMMUNICATIONS

- A. Submit all communications in writing. Use prescribed forms as required by the Owner.

- B. Designate in writing the individuals who will be the Contractor's authorized representatives.

1.10 ADDITIONAL ENGINEERING SERVICES

- A. Pay the costs for additional Engineering services under the following circumstances:
 - 1. In the event the Engineer is required to provide additional engineering services as a result of substitution of materials or equipment by the Contractor which are not "or equal", or changes by the Contractor in dimension, weight, etc., of the materials and accessories furnished, or if the Engineer is required to examine and evaluate any changes proposed by the Contractor for the convenience of the Contractor.
 - 2. Redesign and for any construction changes required to accommodate the materials furnished which change the structural loading and/or design. Structural design shown on the Contract Drawings is based upon typical weights for the materials as indicated on the Contract Drawings and specified.

END OF SECTION

SECTION 01 14 19

OCCUPANCY

PART 1 GENERAL

1.1 PARTIAL OCCUPANCY BY OWNER

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

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 21 16

ALLOWANCES

PART 1 GENERAL

1.1 DESCRIPTION

- A. The Contractor shall include in his bid the allowances listed in the bid proposal. These allowances shall cover work, manufactured equipment or services that will be provided either by the Contractor or by others who may be selected by the Owner. All work performed under allowances shall be subject to Owner approval and under special terms described herein. The contractor shall coordinate and cause the work covered by these allowances to be performed. In accordance with the Contract General Conditions Paragraph 13.02 Allowances, the Contractor's costs including markup and profit are included in the Contract Price and no additional payment will be made for these costs. The final amount of any allowance items listed in the bid proposal shall be adjusted accordingly by change order to reflect actual cost.

1.2 SCHEDULE OF ALLOWANCES

A. Field and Laboratory Testing Allowance

1. The purpose for this allowance is to reimburse the Contractor for the services of a testing laboratory to perform required testing of materials on this project. The Contractor must submit a written proposal to the Owner for approval stating the geotechnical or materials testing firm's qualifications before any work begins. In order to be eligible for payment, tests must (a) be ordered by the Engineer, (b) show that the material met specifications, and (c) be performed by an approved testing laboratory. Laboratory fees will be paid by the Contractor. Reimbursement to the Contractor will be made at the actual cost of eligible tests.

B. System Integration Allowance

1. The purpose for this allowance is to reimburse the Contractor for the services of the System Integrator for adding the new blower packages to the Plant network and control system. This allowance is to cover costs for updating the SCADA system to communicate with the new Blower Control Panel and the HMI screens for the network. This allowance is not to be used for the set-up and configuration for the new Blower Control Panel, which is the responsibility of the Contractor and Blower Manufacturer. Reimbursement to the Contractor will be made at the actual cost of eligible tests.

C. Unforeseen Work Elements Allowance

1. The purpose for this allowance is to reimburse the Contractor for work required due to unforeseen conditions or work as directed by the Owner. Payment under this allowance shall be full compensation for all tools, labor, equipment, materials, and any incidentals necessary for the work directed. In order to be eligible for payment under this item, the Contractor must submit a written proposal to the Owner for approval before any work begins. Reimbursement to the Contractor will be paid at the actual cost.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 22 15

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Descriptions
1.3	Nonpayment for Rejected or Unused Products
1.4	Partial Payment for Stored Materials and Equipment
1.5	Bid Items

B. Scope

1. The Bid lists each item of the Project for which payment will be made. No payment will be made for any items other than those listed in the Bid.
2. Required items of work and incidentals necessary for the satisfactory completion of the work which are not specifically listed in the Bid, and which are not specified in this Section to be measured or to be included in one of the items listed in the Bid, shall be considered as incidental to the work. All costs thereof, including Contractor's overhead costs and profit, shall be considered as included in the lump sum or unit prices bid for the various Bid items. The Contractor shall prepare the Bid accordingly.
3. Work includes furnishing all plant, labor, equipment, tools and materials, which are not furnished by the Owner and performing all operations required to complete the Work satisfactorily, in place, as specified and as indicated on the Drawings.
4. The Contractor shall take no advantage of any apparent error or omission on the Drawings or Specifications, and the Engineer shall be permitted to make corrections and interpretations as may be deemed necessary for fulfillment of the intent of the Contract Documents.

1.2 DESCRIPTIONS

- A. Measurement of an item of work will be by the unit indicated in the Bid.
- B. Payment of the lump sum items established in the Contractor's Bid shall be full compensation for all labor, materials, and equipment required to furnish, install, construct, and test the Work covered under the lump sum proposal item. Payment of the lump sum items established in the Contractor's Bid shall also fully compensate the Contractor for any other work which is not specified or shown, but which is necessary to complete the Work.
- C. Payment will include all necessary and incidental related work not specified to be included in any other item of work listed in the Bid.
- D. Unless otherwise stated in individual sections of the Specifications or in the Bid, no separate payment will be made for any item of work, materials, parts, equipment, supplies or related items required to perform and complete the work. The costs for all such items required shall be included in the price bid for item of which it is a part.
- E. The lump sum items shall be specifically subdivided by activity/CSI format, broken-out in the Schedule of Values. Each schedule of value's description of work shall contain a unique identifier for the purpose of differentiating each schedule of value. Payments for the lump sum items specifically broken-out in the Schedule of Values will be based upon physical

progress for each activity in accordance with the breakdown of the Lump Sum prices agreed to in the Schedule of Values.

1.3 NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

- A. Payment will not be made for the following:
 - 1. Loading, hauling, and disposing of rejected material.
 - 2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.
 - 3. Rejected loads of material, including material rejected after it has been placed by reason of failure of Contractor to conform to provisions of Contract Documents.
 - 4. Material not unloaded from transporting vehicle.
 - 5. Material and equipment not properly stored.
 - 6. Defective Work not accepted by Owner.
 - 7. Material remaining on hand after completion of Work.

1.4 PARTIAL PAYMENT OF STORED MATERIALS AND EQUIPMENT

- A. Partial Payment: No partial payments will be made for materials and equipment delivered or stored unless Shop Drawings or preliminary operation and maintenance manuals are acceptable to Engineer.
- B. Final Payment: Will be made only for products incorporated in Work; remaining products, for which partial payments have been made, shall revert to Contractor unless otherwise agreed, and partial payments made for those items will be deducted from final payment.

1.5 BID ITEMS

- A. Bid Prices included on the Bid Form shall be full compensation for all materials, labor, equipment, tools, construction equipment and machinery, heat, utilities, transportation, taxes, overhead, markup, incidentals and services necessary for the execution and completion of the Work in the Contract Documents to be performed under this Contract. For the Work described, the lump sum and allowance, actual used and installed quantities of each bid item shall be measured in the field and certified by the Engineer and/or Owner upon completion of construction in the manner set forth for each item in this and other sections of the Specifications. Payment for all items listed on the Bid Form will constitute full compensation for all Work shown and specified to be performed.
- B. The following items 1 through 4 comprise the Base Bid Total as listed on the Bid Form.
 - 1. BLOWER PACKAGE REPLACEMENT
 - a. MEASUREMENT: Measurement shall be based on the successful completion of the installation and start-up of the new blower packages at the Hicks WPP, as required by the plans and specifications.
 - b. PAYMENT: The Lump Sum Price bid under this section shall include the furnishing of all labor, materials, and equipment for properly installing two new blowers at the Hicks WTP, including but not limited to, removal of the existing blower, demolition of the existing blower equipment pad, demolition of portions of the existing air piping, modifications to the existing MCC, removal of existing electrical panels, installation of new conduit and wiring, installation of new blower equipment pad, installation of new blowers, installation of new air piping and valves, installation of new blower control panel, installation of new conduits and wiring, start-up and testing of new blowers, and all related appurtenances for a complete and functioning system as shown or specified in the Contract Documents.

2. FIELD AND LABORATORY TESTING ALLOWANCE

- a. MEASUREMENT: An allowance has been established for the value of this item. This allowance may be used, as authorized and directed by the Owner or Engineer, to pay the costs of any third-party material testing services used for quality and contract compliance verification of the Work.
- b. PAYMENT: Payment will be made for invoices submitted by the Contractor subject to the conditions and limitations in the Contract Document. Submit copies of the invoices with each periodic payment request from the firm providing the services. Submit results of services provided which verify required results.

3. SYSTEM INTEGRATION ALLOWANCE

- a. MEASUREMENT: An allowance has been established for the value of this item. This allowance may be used, as authorized and directed by the Owner or Engineer, to pay the costs of the system integrator for making updates to the SCADA system for monitoring and control of the new blowers.
- b. PAYMENT: Payment will be made for invoices submitted by the Contractor subject to the conditions and limitations in the Contract Document. Submit copies of the invoices with each periodic payment request from the firm providing the services.

4. UNFORESEEN WORK ELEMENTS ALLOWANCE

- a. MEASUREMENT: An allowance has been established for the value of this item. The Contractor agrees that this allowance is for the sole use of Owner to cover costs associated with Unforeseen Work Elements. Costs shall be determined as specified in General Conditions Article 13.02, and as directed by the Engineer.
- b. PAYMENT: Payment will be made for work not shown or specified in the Drawings or Specifications and not covered by another item in the Bid Schedule based on an agreed upon costs submitted by the Contractor and approved by the Engineer and Owner in advance of the work.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SUBSTITUTIONS AND PRODUCT OPTIONS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Definitions
1.3	General
1.4	Approvals
1.5	Substitution and Product Options

B. Scope

1. This Section outlines the restrictions and requirements for substitutions, product and manufacturer options, and construction method options.

1.2 DEFINITIONS

A. For the purposes of these Contract Documents, a “substitute item” shall include “or-equal items” and shall be defined as one of the following:

1. A product or manufacturer offered as a replacement to a specified product or manufacturer.
2. A product or manufacturer offered in addition to a specified product or manufacturer.

B. For the purposes of these Contract Documents, a “substitute construction method” shall be defined as one of the following:

1. A mean, method, technique, sequence or procedure of construction offered as a replacement for a specified mean, method, technique, sequence or procedure of construction.
2. A mean, method, technique, sequence or procedure of construction offered in addition to a specified mean, method, technique, sequence or procedure of construction.

1.3 GENERAL

- A. An item or construction method, which is offered where no specific product, manufacturer, mean, method, technique, sequence or procedure of construction is specified or shown on the Drawings, shall not be considered a substitute and shall be at the option of the Contractor, subject to the provisions in the Contract Documents for that item or construction method.
- B. For products specified only by a referenced standard, the Contractor may select any product by any manufacturer, which meets the requirements of the Specifications, unless indicated otherwise in the Contract Documents.
- C. If the manufacturer is named on the Drawings or in the Specifications as an acceptable manufacturer, products of that manufacturer meeting all requirements of the Specifications and Drawings are acceptable.
- D. Whenever the design is based on a specific product of a particular manufacturer, that manufacturer will be shown on the Drawings and/or listed first in the list of approved

manufacturers in the Specifications. Any Bidder/Contractor intending to furnish products from other than the first listed manufacturer, or furnish substitute items, shall:

1. Verify that the item being furnished will fit in the space allowed, perform the same functions and have the same capabilities as the item specified,
 2. Include in its Bid the cost of all accessory items which may be required by the other listed substitute product,
 3. Include the cost of any architectural, structural, mechanical, piping, electrical, instrumentation or other modifications required, and
 4. Include the cost of required additional work by the Engineer, if any, to accommodate the item.
- E. Whenever a product specification includes minimum experience requirements which the manufacturer selected by the Contractor cannot meet, the manufacturer shall furnish the Owner with a cash deposit, or bond acceptable to the Owner in an amount equal to the cost of the product, which shall remain in effect until the experience requirement has been met.

1.4 APPROVALS

- A. Approval, of a substitution as an acceptable manufacturer, of the Engineer is dependent on determination that the product offered:
1. is essentially equal in function, performance, quality of manufacture, ease of maintenance, reliability, service life and other criteria to that on which the design is based, and
 2. will require no major modifications to structures, electrical systems, control systems, or piping systems.

1.5 SUBSTITUTION AND PRODUCT OPTIONS

- A. Substitute items will be considered only if the term “equal to” precedes the names of acceptable manufacturers in the Specification.
- B. After Notice to Proceed:
1. Where items are specified by referenced standard or specified as indicated above in Article 1.3, Paragraph A, such items shall be submitted to the Engineer for review.
 2. The Contractor shall submit shop drawings on the substitute item for the Engineer's review in accordance with the Section 01 33 23.
- C. Prior to Opening of Bids
1. No consideration or approvals will be made for products specified by a referenced standard, or specified as indicated in Article 1.3, Paragraph A above. Such consideration may occur only after the Notice to Proceed.
 2. No consideration or approvals will be made for products being offered where the term “equal to” precedes the name of an approved product. Such substitution consideration may occur only after the Notice to Proceed.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 26 00

CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Proposal Requests
1.3	Claims
1.4	Work Change Directives
1.5	Change Orders
1.6	Cost of Work
1.7	Field Orders

B. This section summarizes the different procedures for contract modifications which may be used in the execution of the Work.

C. All changes in Work shall comply with the requirements in Article 10 of the General Conditions.

1.2 PROPOSAL REQUESTS

A. Owner may, in anticipation of ordering an addition, deletion, or revision to the Work, request Contractor to prepare a detailed proposal of cost and time to perform contemplated change.

B. Proposal request will include reference number for tracking purposes and detailed description of and reason for proposed change, and such additional information as appropriate and as may be required for Contractor to accurately estimate the cost and time impact on the Project.

C. Proposal request is for information only, Contractor is neither authorized to execute proposed change nor stop Work in progress as result of such request.

D. Contractor's written proposal shall be transmitted to Engineer promptly, but not later than 14 days after Contractor's receipt of Owner's written request. Proposal shall remain firm for a maximum period of 60 days after receipt by Engineer.

E. Contractor shall not be authorized to proceed on an Owner contemplated change in the Work prior to Contractor's receipt of Change Order (or Work Change Directive) incorporating such change into the Work.

F. Owner's request for proposal or Contractor's failure to submit such proposal within the required time period will not justify a Claim for an adjustment in Contract Price or Contract Times (or Milestones).

G. The Owner shall not be liable to the Contractor for any costs associated with the preparation of proposal associated with the Owner's contemplated change in the Work.

1.3 CLAIMS

A. Include, at a minimum:

1. Specific references, as applicable with appropriate attachments, including
 - a. Drawing numbers
 - b. Specification section and article/paragraph number
 - c. Submittal type, Submittal number, date reviewed, Engineer's comment
2. Stipulated facts and pertinent documents, including photographs and statements.
3. Interpretations relied upon.
4. Description of
 - a. Nature and extent of claim.
 - b. Who or what caused the situation.
 - c. Impact to the Work and work of others.
 - d. Discussion of claimant's justification for requesting a change to price or time or both.
5. Estimated adjustment in price claimant believes it is entitled to with full documentation and justification.
6. Requested Change in Contract Times. Include at least:
 - a. Progress Schedule documentation showing logic diagram for request.
 - b. Documentation that float times available for Work have been used.
 - c. Revised activity logic with durations including sub-network logic revisions, duration changes, and other interrelated schedule impacts.
7. Documentation as may be necessary as set forth below for Work Change Directive, and as Engineer may otherwise require.

1.4 WORK CHANGE DIRECTIVES

A. Procedures

1. Engineer will:
 - a. Initiate, including a description of the Work involved and any attachments.
 - b. Affix signature, demonstrating Engineer's recommendation.
 - c. Transmit five copies to Owner for authorization.
2. Owner will:
 - a. Affix signature, demonstrating approval of the changes involved.
 - b. Return four copies to Engineer, who will retain one copy, send one copy to the Resident Project Representative or other field representative, and forward two copies to Contractor.
3. Upon completion of Work covered by the Work Change Directive or when final Contract Times and Contract Price are determined, Contractor shall submit documentation for justification of costs for the Work to apply against the appropriate Allowance item.
4. Contractor's documentation shall include but not be limited to:
 - a. Appropriately detailed records of Work performed to enable determination of value of the Work.

- b. Full information required to substantiate resulting change in Contract Times and Contract Price for Work. On request of Engineer, provide additional data necessary to support documentation.
 - c. Support data for Work performed on a unit price or Cost of the Work basis with additional information such as:
 - 1) Dates Work was performed, and by whom.
 - 2) Time records, wage rates paid, and equipment rental rates. Base equipment rentals on the rental period that will result in the lowest overall cost to the Owner.
 - 3) Invoices and receipts for materials, equipment, and subcontracts all similarly documented.
- B. Effective Date of Work Change Directive: Date of signature by Owner, unless otherwise indicated thereon.

1.5 CHANGE ORDERS

A. Procedure:

1. Engineer will prepare six copies of proposed Change Order and transmit such with Engineer's written recommendation and request to Contractor for signature.
 2. Contractor shall, upon receipt, either promptly sign copies, retaining one for its file, and return remaining five copies to Engineer for Owner's signature, or return five unsigned copies with written justification for not executing Change Order.
 3. Engineer will, upon receipt of Contractor signed copies, promptly forward Engineer's written recommendation and partially executed five copies for Owner's signature, or if Contractor fails to execute the Change Order, Engineer will promptly so notify the Owner and transmit Contractor's justification to Owner.
 4. Upon receipt of Contractor executed Change Order, Owner will promptly either:
 - a. Execute Change Order, retaining one copy for its file and returning four copies to Engineer, or
 - b. Return to Engineer unsigned copies with written justification for not executing Change Order.
 5. Upon receipt of Owner executed Change Order, Engineer will transmit two copies to Contractor, one copy to Resident Project Representative or other field representative, and retain one copy, or if Owner fails to execute the Change Order, Engineer will promptly so notify the Contractor and transmit Owner's justification to Contractor.
 6. Upon receipt of Owner executed Change Order, Contractor shall:
 - a. Perform Work covered by Change Order.
 - b. Revise Schedule of Values to adjust Contract Price and submit with next Application for Payment.
 - c. Revise Progress Schedule to reflect changes in Contract Times, if any, and to adjust times for other items or Work affected by change.
 - d. Enter change in Project record documents after completion of change related work.
- B. In signing a Change Order, Owner and Contractor acknowledge and agree that:
1. Stipulated compensation (Contract Price or Contract Times, or both) set forth includes payment for

- a. The Cost of the Work covered by the Change Order
 - b. Contractor's fee for overhead and profit
 - c. Interruption of Progress Schedule
 - d. Delay and impact, including cumulative impact on other Work under the Contract Documents
 - e. Extended overheads
2. Change Order constitutes full mutual accord and satisfaction for the change to the Work.
 3. No reservation of rights to pursue subsequent claims on the Change Order will be made by either party.
 4. No subsequent claim or amendment on the Contract Documents will arise out of or as a result of the Change Order.
 5. Unless otherwise stated in the Change Order, all requirements of the original Contract Documents apply to the Work covered by the Change Order.

1.6 COST OF WORK

- A. Supplemental costs shall be allowed in Paragraph 13.01.B.5 of the General Conditions for rental equipment and machinery.

1.7 FIELD ORDERS

- A. Engineer will issue Field Orders, with three copies to the Contractor.
- B. Effective date of Field Order shall be the date of signature by the Engineer, unless otherwise indicated thereon.
- C. Contractor shall acknowledge receipt by signing and returning one copy to Engineer.
- D. Field Orders will be incorporated into subsequent Change Orders, as a no-cost change to the Contract.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 29 73

SCHEDULE OF VALUES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	General
1.3	Form and Content of Schedule of Values

B. Scope

1. The work under this Section includes preparation and submittal of a schedule of values.

1.2 GENERAL

- A. Timing of Submittal: Submit to the Engineer, a schedule of values allocated to the various portions of the Work, within 30 days after Notice to Proceed. The first progress payment will not be made until the next pay cycle following the Engineer's approval of the Contractor's schedule of values.
- B. Supporting Data: Upon request of the Engineer, support the values with data which will substantiate their correctness.
- C. Use of Schedule: The schedule of values, unless objected to by the Engineer, shall be used only as a basis of the Contractor's Application for Payment.

1.3 FORM AND CONTENT OF SCHEDULE OF VALUES

A. Form and Identification

1. Type schedule on 8-1/2 x 11-inch white paper.
2. Contractor's standard forms may be used.
3. Identify schedule with:
 - a. Title of project and location
 - b. Engineer
 - c. Name and address of Contractor
 - d. Contract designation
 - e. Date of submission

- B. List the installed value of the component parts of the Work in sufficient detail to serve as a basis for computing values for progress payments during construction. Break down by structure, then by CSI Format, for ease of field verification of quantities completed in each structure.

C. Format

1. Follow the Table of Contents of the Contract Documents as the format for listing the component items.
2. Identify each item with the number and title of the respective major section of the Specifications.

- D. For each major line item list sub-values of major products or operations under the item.
- E. For the Various Portions of the Work:
 - 1. Each item shall include a directly proportional amount of the Contractor's overhead and profit.
 - 2. For items on which progress payments will be requested for stored materials, break down the value into:
 - a. The cost of the materials, delivered and unloaded, with taxes paid.
 - b. The total installed value, including Contractor's overhead and profit, less item a. above.
- F. The sum of all values listed in the schedule shall equal the Bid Total.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 29 76

PROGRESS PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Preconstruction Conference
1.3	Project Coordination Meetings
1.4	Shutdown Coordination Meetings
1.5	Quality Control and Coordination Meetings
1.6	Pre-Installation Meetings
1.7	Equipment and Facility Startup Meetings
1.8	Other Meetings

B. Scope

1. Work under this Section includes all scheduling and administering of preconstruction and progress meetings as herein specified and necessary for the proper and complete performance of this Work.
2. Scheduling and Administration by Engineer:
 - a. Prepare agenda.
 - b. Make physical arrangements for the meetings.
 - c. Preside at meetings.
 - d. Record minutes and include significant proceedings and decisions.
 - e. Distribute copies of the minutes to participants.

1.2 ADMINISTRATIVE REQUIREMENTS

A. General: Contractor's request for payment shall be in accordance with the Agreement, General Conditions and Supplementary Conditions, and the Specifications.

B. Procedure:

1. Review with Resident Project Representative (RPR) quantities and the Work proposed for inclusion in each progress payment. Application for Payment shall cover only the Work and quantities recommended by the RPR.
2. Submit to Engineer one electronic original of each complete Application for Payment and other documents to accompany the Application for Payment.
3. Engineer will act on request for payment in accordance with the General Conditions and Supplementary Conditions.

C. Requirements:

1. Use AIA forms G702 and G703 for Application for Payment. Application for Payment details and format must be suitable to the Engineer and Owner.

2. Completed Application for Payment form, including summary/signature page, progress estimate sheets, and stored materials summary. Progress estimate sheets shall have the same level of detail as the Schedule of Values.
 3. Stored materials summary shall differentiate on-site stored materials from off-site stored materials. For Contractor to receive payment for off-site stored materials, in addition to requirements of Paragraph 1.2.C.4 below, RPR must verify Contractor is in possession of materials.
 4. For materials and equipment not incorporated in the Work but suitably stored, submit documentation in accordance with the General Conditions and Supplementary Conditions. Legibly indicate on invoice or bill of sale the specific materials or equipment included in the payment request and corresponding bid/payment item number for each.
 5. An updated Progress Schedule meeting the requirements of Section 01 32 16 shall accompany each Application for Payment.
 6. Beginning with the second Application for Payment, Interim and/or Final Waiver and Release forms are required to be submitted with each Application for Payment.
 7. For payment requests that include payment for Work under an allowance, submit documentation acceptable to Owner of the authorization of allowance Work.
 8. For payment requests (other than request for final payment) that include reduction or payment of retainage in an amount greater than that required in the Contract Documents, submit on form acceptable to Owner consent of surety to partial release or reduction of retainage.
- D. Requirements for request for final payment are in the General Conditions, as modified by the Supplementary Conditions, and Section 01 77 00 – Contract Closeout.

1.3 SUPPLEMENTS

- A. The supplements listed below, following “END OF SECTION”, are part of this Specification.
1. Interim Waiver and Release Upon Payment
 2. Waiver and Release Upon Final Payment

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

STATE OF GEORGIA
COUNTY OF CLAYTON

WAIVER AND RELEASE OF LIEN AND PAYMENT BOND RIGHTS
UPON INTERIM PAYMENT

The undersigned mechanic and/or materialman has been employed by the Clayton
County Water Authority to furnish:

_____ [describe materials and/or labor] for the construction of improvements known as:
_____ [title of the project or building];
which is located in the City of _____, County of _____,
and is owned by the Clayton County Water Authority and more particularly described as
follows:

_____ [describe the property upon which the improvements were made using either a street
address of the project, metes and bounds description, or the land lot district, block and
lot number]: See Attachment: yes no

Upon the receipt of the sum of \$ _____, the mechanic
and/or materialman waives and releases any and all liens or claims of liens it has upon
the foregoing described property or any rights against any labor and/or material bond
through the date of _____ [date of signature] and excepting those rights and
liens that the mechanic and/or materialman might have in any retained amounts, on
account of labor or materials, or both, furnished by the undersigned to or on account of
said contractor for said building or premises.

**NOTICE: WHEN YOU EXECUTE AND SUBMIT THIS DOCUMENT, YOU SHALL BE
CONCLUSIVELY DEEMED TO HAVE WAIVED AND RELEASED ANY AND ALL
LIENS AND CLAIMS OF LIENS UPON THE FOREGOING DESCRIBED PROPERTY
AND ANY RIGHTS REGARDING ANY LABOR OR MATERIAL BOND REGARDING
THE SAID PROPERTY TO THE EXTENT (AND ONLY TO THE EXTENT) SET FORTH
ABOVE, EVEN IF YOU HAVE NOT ACTUALLY RECEIVED SUCH PAYMENT, 90
DAYS AFTER THE DATE STATED ABOVE UNLESS YOU FILE AN AFFIDAVIT OF
NONPAYMENT PRIOR TO THE EXPIRATION OF SUCH 90 DAY PERIOD. THE
FAILURE TO INCLUDE THIS NOTICE LANGUAGE ON THE FORM SHALL RENDER
THE FORM UNENFORCEABLE AND INVALID AS A WAIVER AND RELEASE UNDER
O.C.G.A. § 44-14-366.**

COUNTERPARTS AND ELECTRONIC SIGNATURES: This Waiver may be executed in one or more counterparts, each of which will be deemed to be an original, but all of which together will constitute one and the same instrument. An executed signature page delivered via facsimile transmission or electronic signature shall be deemed as effective as an original executed signature page.

GIVEN UNDER HAND AND SEAL THIS ____ DAY OF _____, 20__.

(Signature of Deponent) (SEAL)

(Printed/Typed Name and Title)

Deponent, individually, and as duly authorized agent and duly elected and acting officer of Company.

(Company Name)

(Witness)

(Address)

PERSONALLY, APPEARED BEFORE ME, a Notary Public in and for said State and County, the Deponent, who, being personally known to the undersigned and being duly sworn and on oath deposed and said that the within and foregoing statements are true and correct this _____ day of _____, 20__.

Notary Public _____

Commission Expiration Date: _____

(NOTARY SEAL)

STATE OF GEORGIA
COUNTY OF CLAYTON

WAIVER AND RELEASE OF LIEN AND PAYMENT BOND RIGHTS
UPON FINAL PAYMENT

The undersigned mechanic and/or materialman has been employed by the Clayton County Water Authority to furnish:

[describe materials and/or labor] for the construction of improvements known as:

_____ [title of the project or building];

which is located in the City of _____, County of _____, and is owned by the Clayton County Water Authority and more particularly described as follows:

[describe the property upon which the improvements were made using either a street address of the project, metes and bounds description, or the land lot district, block and lot number]: See Attachment: yes no

Upon the receipt of the sum of: \$_____, the mechanic and/or materialman waives and releases any and all liens or claims of liens it has upon the foregoing property or any rights against any labor and/or material bond on account of labor or materials, or both, furnished by the undersigned to or on account of Clayton County Water Authority for said property.

NOTICE: WHEN YOU EXECUTE AND SUBMIT THIS DOCUMENT, YOU SHALL BE CONCLUSIVELY DEEMED TO HAVE WAIVED AND RELEASED ANY AND ALL LIENS AND CLAIMS OF LIENS UPON THE FOREGOING DESCRIBED PROPERTY AND ANY RIGHTS REGARDING ANY LABOR OR MATERIAL BOND REGARDING THE SAID PROPERTY TO THE EXTENT (AND ONLY TO THE EXTENT) SET FORTH ABOVE, EVEN IF YOU HAVE NOT ACTUALLY RECEIVED SUCH PAYMENT, 90 DAYS AFTER THE DATE STATED BELOW UNLESS YOU FILE AN AFFIDAVIT OF NONPAYMENT PRIOR TO THE EXPIRATION OF SUCH 90 DAY PERIOD. THE FAILURE TO INCLUDE THIS NOTICE LANGUAGE ON THE FORM SHALL RENDER THE FORM UNENFORCEABLE AND INVALID AS A WAIVER AND RELEASE UNDER O.C.G.A. § 44-14-366.

COUNTERPARTS AND ELECTRONIC SIGNATURES: This Waiver may be executed in one or more counterparts, each of which will be deemed to be an original, but all of which together will constitute one and the same instrument. An executed signature page

delivered via facsimile transmission or electronic signature shall be deemed as effective as an original executed signature page.

PERSONALLY, APPEARED BEFORE ME, the undersigned officer, duly authorized by law to administer oaths, comes _____ (the "Deponent"), who after first being duly sworn according to law, deposes and says under oath as follows:

1. That Deponent is the duly authorized agent and duly elected and acting officer of _____ (the "Contractor"), and is duly authorized to execute this Final Contractor's Affidavit, Lien Waiver and Indemnification (this "Affidavit") in a representative capacity on behalf of Contractor, as well as in Deponent's individual capacity, and Deponent has made diligent inquiry into and is personally familiar with and has full knowledge of all facts set forth herein.

2. That Contractor acted as the sole general contractor in charge of and directly responsible for the building and construction of all improvements (the "Work") located as reflected above (the "Property"), all of which Work was performed pursuant to the terms of that certain agreement dated _____ (the "Agreement") by and between Contractor and the Clayton County Water Authority as the owner or agent of the owner of the Property (the "Owner"). The Work includes, without limitation, all Work under or related to the Agreement and all change orders to the Agreement, and all supplemental contracts and subcontracts, whether oral or written, for any extra, additional or replacement labor or materials. Contractor is, and performed the Work as, an independent general contractor and Contractor is not an agent of Owner, and all of the Work was furnished and performed at the instance of Contractor as general contractor.

3. That the Work has been fully and finally completed in strict accordance with the terms of the Agreement, and Contractor has at all times since the commencement of the Work been in direct charge of all aspects of the Work, and Contractor has obtained a current valid permanent certificate of occupancy for the Property and the Work, and the Work has been completed within the boundary lines of the Property.

4. Upon receipt of the sum reflected above, Contractor acknowledges that Owner has paid in full to Contractor the full contract price under the Agreement (the "Contract Price"), which Contract Price includes, without limitation, all amounts and bills for all labor, materials, fixtures and supplies of any type whatsoever used in the Work. Upon receipt of these monies, all contractors, subcontractors, subcontractors of subcontractors, materialmen, suppliers and laborers will be paid in full the agreed price or reasonable value for all materials and supplies ordered, used or furnished and services and labor rendered in connection with or as a part of the Work, and none of such parties have or will have any claim, demand or lien against the Property, and all of the amounts paid by Owner to Contractor under the Agreement have been and will be used to pay for labor or materials used in the Work when no liens or claims of lien were filed or outstanding. There are no disputes regarding the Agreement or any other contracts or subcontracts with respect to the Work or the Property, and, except for bills associated with these final monies, there are no amounts due or unpaid bills of any nature, either for labor or services

related to the Work or the Property or any materials which have been or may have been placed upon, or applied or delivered to the Property, and Contractor does hereby unconditionally agree to hold harmless and indemnify Owner from and against all claims for mechanic's or materialman's liens or claims of lien, including, without limitation, any attempted foreclosure thereof, which in any way arise out of or are related to the Work or the Property, including, without limitation, any attorney's fees incurred in connection therewith.

5. That Contractor does hereby for itself, and its employees, suppliers, subcontractors, mechanics and materialmen and all other persons acting for, through, or under Contractor, waive, remise, relinquish and release all right to file or to have filed or to maintain any materialman's or mechanic's lien or liens or claim or claims against the Property or arising out of or related to the Work. This Affidavit is executed and given in favor of and for the benefit of, and may be relied upon by, Owner and each and every party legally or equitably, now or hereafter, owning or holding any interest in the Property.

6. That this Affidavit is a sworn statement made under the provisions of Official Code of Georgia Annotated Section 44-14-361.2, and is made for the purpose of inducing Owner to pay to Contractor the balance of the Contract Price pursuant to the terms of the Agreement.

GIVEN UNDER HAND AND SEAL THIS ____ DAY OF _____, 20__.

(Signature of Deponent)

(SEAL)

(Printed/Typed Name and Title)

(Witness)

(Address)

NOTARY ACKNOWLEDGMENT

Sworn to and subscribed before me, a Notary Public in and for said State and County, the Deponent, who, being personally known to the undersigned and being duly sworn and on oath deposed and said that the within and foregoing statements are true and correct this ____ day of _____, 20__.

Notary Public _____

Commission Expiration Date: _____ (NOTARY SEAL)

SECTION 01 31 19

PROJECT MEETINGS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Preconstruction Conference
1.3	Project Coordination Meetings
1.4	Shutdown Coordination Meetings
1.5	Quality Control and Coordination Meetings
1.6	Pre-Installation Meetings
1.7	Equipment and Facility Startup Meetings
1.8	Other Meetings

B. Scope

1. Work under this Section includes all scheduling and administering of preconstruction and progress meetings as herein specified and necessary for the proper and complete performance of this Work.
2. Scheduling and Administration by Engineer:
 - a. Prepare agenda.
 - b. Make physical arrangements for the meetings.
 - c. Preside at meetings.
 - d. Record minutes and include significant proceedings and decisions.
 - e. Distribute copies of the minutes to participants.

1.2 PRECONSTRUCTION CONFERENCE

- A. The Engineer shall schedule the preconstruction conference prior to the issuance of the Notice to Proceed.
- B. Representatives of the following parties are to be in attendance at the meeting:
 1. Owner
 2. Owner's Inspector
 3. Engineer
 4. Contractor's project staff including at a minimum the project manager and superintendent.
 5. Major subcontractors
- C. The agenda for the preconstruction conference shall consist of the following as a minimum:
 1. Identify all key project personnel, including contact information for the Owner, Engineer, and Contractor.

2. Distribute and discuss a list of major subcontractors, with contact information, and a tentative construction schedule.
3. Critical work sequencing.
4. Designation of responsible personnel and emergency telephone numbers.
5. Processing of field decisions and change orders.
6. Adequacy of distribution of Contract Documents.
7. Schedule and submittal of shop drawings, product data and samples.
8. Pay request format, submittal cutoff date, pay date and retainage.
9. Procedures for maintaining record documents.
10. Use of premises, including office and storage areas and Owner's requirements.
11. Major equipment deliveries and priorities.
12. Safety and first aid procedures.
13. Security procedures.
14. Housekeeping procedures.
15. Workhours.

1.3 PROJECT COORDINATION MEETINGS

- A. Schedule regular monthly meetings or more frequently as directed by the Engineer.
- B. Hold called meetings as the progress of the Work dictates.
- C. The meetings shall be held at the location indicated by the Engineer.
- D. Representatives of the following parties are to be in attendance at the meetings:
 1. Engineer.
 2. Contractor's project staff including at a minimum the project manager and superintendent when requested by the Engineer.
 3. Major subcontractors as pertinent to the agenda.
 4. Owner's representative as appropriate.
- E. The minimum agenda for progress meetings shall consist of the following:
 1. Review and approve minutes of previous meetings.
 2. Review work progress since last meeting.
 3. Review work progress planned for the next period.
 4. Status of Overall Project Schedule, identify problems which impede planned progress.
 5. Review Contractor's corrective measures and procedures to regain plan schedule.
 6. Review Contractor's revision to the construction schedule.
 7. Review submittal schedule.
 8. Review Request for Information process.
 9. Review Change Management items and status of individual Change documents.
 10. Review Notices, Punch lists, and project coordination issues.
 11. Note field observations, problems and decisions.

12. Review testing and quality control measures and associated issues.
13. Review upcoming start-up and commissioning activities.
14. Review vendor training and videotaping initiatives.
15. Complete other current business.

1.4 SHUTDOWN COORDINATION MEETINGS

- A. Arrange and convene a coordination meeting a minimum of one week prior to significant planned shutdowns.
- B. Meeting participants shall include Engineer, Designer, Owner, and Contractor, including involved subcontractors.
- C. Meeting agenda shall include Contractor's written review/presentation of detailed work plan and schedule, Owner input regarding facility operations, and all other pertinent coordination topics.

1.5 QUALITY CONTROL AND COORDINATION MEETINGS

- A. Scheduled by Engineer on regular basis and as necessary to review test and inspection reports, and other matters relating to quality control of Work and work of other contractors.
- B. Attendees will include:
 1. Contractor's project staff including at a minimum the project manager and superintendent.
 2. Subcontractors and Suppliers, as necessary.
 3. Engineer's representatives.

1.6 PRE-INSTALLATION MEETINGS

- A. When required in individual Specification Sections, convene at site prior to commencing Work of that section.
- B. Require attendance of entities directly affecting, or affected by, Work of that Section.
- C. Notify Engineer in writing 4 days in advance of meeting date.
- D. Provide written agenda to Engineer to include reviewing conditions of installation, preparation and installation or application procedures, and coordination with related Work and work of others.

1.7 EQUIPMENT AND FACILITY STARTUP MEETINGS

- A. Schedule and attend equipment and facility startup meetings for each system, equipment, package, facility, or group of facilities, as applicable.
- B. Agenda items shall include, but not be limited to, content of Facility Startup Plan, coordination needed between various parties in attendance, and potential problems associated with startup.
- C. Attendees will include:
 1. Contractor's project staff including at a minimum the project manager, and superintendent.
 2. Subcontractors and equipment manufacturer's representatives whom Contractor deems to be directly involved in facility startup.

3. Engineer's representatives.
4. Owner's operations personnel.
5. Others as required by Contract Documents or as deemed necessary by Contractor.

1.8 OTHER MEETINGS

- A. In accordance with Contract Documents and as may be required by Owner and Engineer.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

CONSTRUCTION SCHEDULES FOR SMALL PROJECTS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Submittals
1.3	Approval
1.4	Overall Project Schedule (OPS)
1.5	Near Term Schedule (NTS)
1.6	Updating

B. Scope

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

1.2 SUBMITTALS

A. Overall Project Schedule (OPS)

1. Submit the schedule within 10 days after date of the Notice to Proceed.
2. The Engineer will review the schedule and return it within 10 days after receipt.
3. If required, resubmit within 10 days after receipt of a returned copy.

B. Near Term Schedule (NTS)

1. Submit the first Near Term Schedule within 10 days of the Notice to Proceed.
2. The Engineer will review the schedule and return it within 10 days after receipt.

C. Submit an update of the OPS and NTS with each progress payment request and at each progress meeting.

D. Submit the number of copies required by the Contractor, plus four copies to be retained by the Engineer.

E. Schedule of Values (SOV):

1. Submit the SOV within 30 days after the date of the Notice to Proceed.
2. The Engineer will review the SOV and return a reviewed copy within 15 days after receipt.
3. If required, resubmit, incorporating all revisions, within five days after receipt of a returned review copy.

1.3 APPROVAL

A. Approval of the Contractor's detailed construction program and revisions thereto shall in no way relieve the Contractor of any of Contractor's duties and obligations under the Contract.

Approval is limited to the format of the schedule and does not in any way indicate approval of, or concurrence with, the Contractor's means, methods and ability to carry out the Work.

1.4 OVERALL PROJECT SCHEDULE (OPS)

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

1.5 NEAR TERM SCHEDULE (NTS)

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

1.6 UPDATING

- A. Show all changes occurring since previous submission of the updated schedule.
- B. Indicate progress of each activity and show actual completion dates.
- C. Be prepared to provide a narrative report at the Project Coordination Meetings. The report shall include the following:
 - 1. A description of the overall Project status and comparison to the OPS.
 - 2. Identify activities which are behind schedule and describe corrective action to be taken.
 - 3. A description of changes or revisions to the Project and their effect on the OPS.

4. A description of the Near Term Schedule of the activities to be completed during the next 30 days. The report shall include a description of all activities requiring participation by the Engineer and/or Owner.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

CONSTRUCTION PHOTOGRAPHS AND VIDEOS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Pre and Post Construction Photographs
1.3	Progress Photographs
1.4	Pre and Post Construction Audio/Video Recordings
1.5	Submittals

B. Scope

1. Furnish all equipment, labor, and materials required to provide the Owner with digital construction photographs and audio/video recordings of the Project.
2. Photos, electronic files, and audio/video recordings shall become the property of the Owner and none of which shall be published without express permission of the Owner.

1.2 PRE AND POST CONSTRUCTION PHOTOGRAPHS

- A. Prior to the beginning of any work, take project photographs of the work area to record existing conditions.
- B. Following completion of the work, take another set of photos showing the same areas and features as in the pre-construction photographs.
- C. Show all conditions which might later be subject to disagreement in sufficient detail to provide a basis for decisions.
- D. Submit the pre-construction photographs to the Engineer within 15 calendar days after the date of receipt by the Contractor of the Notice to Proceed. Provide post-construction photographs prior to final acceptance of the project.

1.3 PROGRESS PHOTOGRAPHS

- A. Include the date and time marking of the recording on the photographs. Electronically label all photographs to indicate date and description of work shown.
- B. Submit a minimum of ten (10) photographs with each request for payment, or at each monthly progress meeting, whichever is more frequent. The view selection will be as agreed to with the Engineer. Submit two USB flash drives with copies of the electronic photograph files in jpeg format.

1.4 PRE AND POST CONSTRUCTION AUDIO/VIDEO RECORDINGS

- A. Prior to the beginning of any work, make audio/video recordings of the work area to record existing conditions.
- B. Following completion of the work, make another recording showing the same areas and features as in the pre-construction recording.
- C. Show all conditions which might later be subject to a disagreement in sufficient detail to provide a basis for decisions.

- D. Include the date and time markings on the video. Provide an audio narration, stating a description of what is shown, structure, and area, where appropriate for all videos.
- E. Use DVD minus R format for audio/video recordings. The quality and content shall be subject to the approval of the Engineer.
- F. Provide typed labels for the DVD and DVD case with the following information: Project title, date of recording, project location shown on the recording.

1.5 SUBMITTALS

A. Formats

- 1. Provide photo files on USB flash drive in jpeg format.
- 2. Provide audio/video recordings in DVD minus R format.

B. Submit the pre-construction photographs to the Engineer within 15 calendar days after the date of the Notice to Proceed. Submit post-construction photographs prior to final acceptance of the Project.

C. Submit progress photographs with each payment request or at each monthly meeting.

D. Audio/Video Recordings

- 1. Submit the pre-construction recording prior to the first partial payment request.
- 2. Submit the post-construction recording with the final payment request.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 33 23

SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Specific Category Requirements
1.3	Routing of Submittals
1.4	Submittal Log
2.1	Shop Drawings
2.2	Manufacturer's Literature
2.3	Samples
2.4	Colors
2.5	Administrative Submittals
2.6	Quality Control Submittals
2.7	Fixed Asset Report Submittals
2.8	Sales Tax Report
2.9	Contract Closeout Submittals
3.1	Contractor's Coordination of Submittals
3.2	Timing of Submittals
3.3	Reviewed Submittals
3.4	Resubmission Requirements
3.5	Attachments

B. Scope

1. The work under this Section includes submittal to the Engineer of shop drawings, product data and samples required by the various Sections of these Specifications.
2. Submittal Contents: The submittal contents required are specified in each Section.
3. Definitions: Submittals are categorized as follows:
 - a. Shop Drawings:
 - 1) Shop drawings shall include technical data, drawings, diagrams, procedures and methodology, performance curves, schedules, templates, patterns, test reports, calculations, instructions, measurements and similar information as applicable to the specific item for which the shop drawing is prepared.
 - 2) Provide newly-prepared information, on reproducible sheets, with graphic information at accurate scale (except as otherwise indicated) or appropriate number of prints hereof, with name of preparer (firm name) indicated. Do not trace or reproduce by any method the Contract Drawings for use as or in lieu of detailed shop drawings. Show dimensions and note dimensions that are based on field measurement. Identify materials and products in the work shown.

Indicate compliance with standards and special coordination requirements. Do not allow shop drawings to be used in connection with the Work without appropriate final "Action" markings by the Engineer.

- 3) Present drawings in a clear and thorough manner. Identify details by reference to sheet and detail, Specification Section, schedule or room numbers shown on the Contract Drawings.
 - 4) Minimum assembly drawings sheet size: 24-inches by 36-inches.
 - 5) Minimum detail sheet size: 8-1/2-inches by 11-inches.
 - 6) Minimum Scale:
 - a) Civil / Site: 1-inch = 30 feet.
 - b) All others: 1/4-inch = 1 foot.
- b. Product Data:
- 1) Product data includes standard printed information on materials, products and systems, not specially prepared for this Project, other than the designation of selections from among available choices printed therein.
 - 2) Collect required data into one submittal for each unit of work or system and mark each copy to show which choices and options are applicable to the Project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements that have been checked and special coordination requirements.
- c. Samples:
- 1) Samples include both fabricated and un-fabricated physical examples of materials, products and units of work, both as complete units and as smaller portions of units of work, either for limited visual inspection or, where indicated, for more detailed testing and analysis.
 - 2) Provide units identical with final condition of proposed materials or products for the work. Include "range" samples, not less than three units, where unavoidable variations must be expected, and describe or identify variations between units of each set. Provide a full set of optional samples where the Engineer's selection is required. Prepare samples to match the Engineer's sample where indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations and compliance with standards. Submit samples to the Engineer for review to confirm the color, pattern, texture and "kind". The Engineer will note "test" samples, except as otherwise indicated, for other requirements, which are the exclusive responsibility of the Contractor.
- d. Miscellaneous submittals related directly to the Work (non-administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, statements of applicability, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock, security/protection/safety keys and similar information, devices and materials applicable to the Work but not processed as shop drawings, product data or samples.
4. Resubmissions: Clearly identify each correction or change made. The resubmission shall be accompanied by a letter listing all comments made by the Engineer and the actions or response by the manufacturer or vendor to each comment. Where the

Engineer's comment applies to multiple areas of the initial submittal the response shall address all areas. The response letter shall also address where supplemental information has been provided and where it is located within the resubmission.

5. Incomplete Submittal Submissions:
 - a. Engineer will return entire Submittal for Contractor's revision/correction and resubmission.
 - b. Submittals which do not clearly bear Contractor's specific written indication of Contractor review and approval of Submittal or which are transmitted with an unsigned or uncertified submission form or as may otherwise be required will be returned to Contractor un-reviewed.
6. Non-specified Submissions: Submissions not required under these Contract Documents and not shown on submittal logs generated by the Engineer will not be reviewed, but will be logged for information only, and will be returned to Contractor.
7. Engineer's Review: Engineer will act upon Contractor's Submittal and transmit response to Contractor not later than 14 calendar days after receipt, unless otherwise specified. Resubmittals will be subject to same review time.
8. Schedule Delays:
 - a. No adjustment of Contract Times or Price will be allowed due to Engineer's review of Submittals, unless all of the following criteria are met:
 - 1) Contractor has notified Engineer in writing that timely review of Submittal in question is critical to progress of Work, and has received Engineer's written acceptance to reflect such on current accepted submissions and progress schedule. Written agreement by Engineer to reduce Submittal review time will be made only for unusual and Contractor-justified reasons. Acceptance of a progress schedule containing Submittal review times less than specified or less than agreed to in writing by Engineer will not constitute Engineer's acceptance of review times.
 - 2) Engineer has failed to review and return first submission of a Submittal within agreed time indicated on current accepted schedule of submissions or, if no time is indicated thereon, within 14 calendar days after receipt.
 - 3) Contractor demonstrates that delay in progress of Work is directly attributable to Engineer's failure to return Submittal within time indicated and accepted by Engineer.
 - b. No adjustment of Contract Times or Price will be allowed due to delays in progress of Work caused by rejection and subsequent resubmission of Submittals, including multiple resubmissions.

1.2 SPECIFIC CATEGORY REQUIREMENTS

- A. General: Except as otherwise indicated in the individual work sections, comply with the general requirements specified herein for each indicated category of submittal. Include in submittals:
 1. The date of submittal and the dates of any previous submittals.
 2. The Project title.
 3. The submittal number.
 4. The Names of:
 - a. Contractor.

- b. Supplier.
 - c. Manufacturer.
5. Identification of the product, with the specification section number, permanent equipment tag numbers and applicable Drawing No.
 6. Field dimensions, clearly identified as such.
 7. Relation to adjacent or critical features of the Work or materials.
 8. Applicable standards, such as ASTM or Federal Specification numbers.
 9. Notification to the Engineer in writing of any deviations to the requirements of the Contract Documents. The notification of deviation shall be clearly marked by the Contractor in the body of the submittal and stated in text in the Contractor's remarks on the transmittal document of the submittal. Indicate the reasons for the deviations and the benefits to the Project.
 10. Identification of revisions on resubmittals.
 11. An 8-inch by 4-inch blank space for Contractor's and Engineer's stamps.
 12. A stamp or photographic facsimile of a stamp, initialed or signed, including a certification statement of the Contractor's review of the submittal and indicating the submittal's status relative to the requirements of the Contract Documents.
 13. Cross out all non-pertinent information on submittal sheets or drawings showing more than one particular item under consideration.

1.3 ROUTING OF SUBMITTALS

- A. Route submittals and routine correspondence as follows:
 1. Supplier to Contractor (through representative if applicable).
 2. Contractor to Engineer.
 3. Engineer to Contractor and Owner.
 4. Contractor to Supplier.
- B. Additionally, if a submittal is for products, equipment or systems which interface with the Process Instrumentation and Control Systems Supplier (PICSS) or Instrumentation and Control System Integrator, such submittal shall be reviewed by the PICSS prior to submittal to the Engineer. Include all PICSS review comments with such submittal to the Engineer.

1.4 SUBMITTAL LOG

- A. Submittal Log: Create the submittal log providing a complete listing of submittals required for the Project. Within 15 days of the Effective Date of the Agreement, provide the Engineer with the submittal log. The submittal log will define how the submittals will be numbered and described, and identify how the submittals are to be packaged.
- B. Submittal Identification and Packaging: Incorporate submittals into packages, with submittal numbering as follows: XX XX XX.XX.YY, where 'X' denotes the applicable specification section and 'Y' denotes the individual submittal number for that particular specification section, beginning with 01. The initial submittal shall be identified as "Revision" 000. Subsequent resubmittals shall be identified 001, 002, etc. Packages shall be identified as follows: XX XX XX.XXAA; where 'X' denotes the applicable specification section and 'A' indicates which submittals must be submitted together in a single package. Identify as an activity in the schedule, all major equipment submittals as well as those involving complex reviews and long lead deliveries. Provide monthly

updates of the submittal schedule information with the Contractor's updated project schedule.

- C. Samples: Provide a list of all required sample submittals in the Submittal Log. Identify sample submittals as individual submittals within the submittal packages with numbering as specified above.
- D. Guarantees/Warranties: Provide a list of all required Guarantee/Warranty submittals in the Submittal Log. Identify these submittals as individual submittals within the submittal packages with numbering as specified above.
- E. Operation & Maintenance Manuals: Provide a list of all required Operation & Maintenance Manual (O&M) submittals in the Submittal Log. Identify these submittals as individual submittals within Section 01 78 23, rather than the corresponding equipment section.
- F. Test Reports: List these submittals as individual submittals within the submittal packages identified with numbering as specified above.
- G. Submittal Procedures: Prepare all submittal packages utilizing the submittal numbering system, description and packaging conventions described above. Submittals prepared by the Contractor, which fail to follow the conventions described above, will be returned "un-reviewed". After the submittal log has been assembled, reviewed and implemented, should the Contractor determine that a submittal is required, that is not listed in the log; consult with the Engineer to determine if the submittal should be added to the log. If so, determine the submittal number, description and packaging required. The submittal and package will be added to the log by the Engineer.
- H. Submittal Transmissions: To the maximum extent possible, transmit submittals to the Engineer electronically. Exceptions are shop drawings larger than 11-inches by 17-inches, samples and color charts which shall be transmitted electronically and in hard copy format. Other exceptions to the electronic format requirement must be approved by the Engineer. Electronic and hard copies of the O&M manuals shall be provided in accordance with Section 01 78 23.

PART 2 PRODUCTS

2.1 SHOP DRAWINGS

- A. Unless otherwise specifically directed by the Engineer, make all shop drawings accurately to scale and large enough and in sufficient detail to show all pertinent features of the submitted item and its method of connection to the Work.
- B. Submit all shop drawings electronically. All electronically submitted shop drawings shall be in a searchable single file Adobe Acrobat Portable Document Format (PDF). The PDF file shall be fully indexed using the Table of Contents, searchable with thumbnails generated. Electronic files shall be scanned in no greater than 300 dpi utilizing optical character recognition (OCR) software. One signed electronic copy of the reviewed submittal shall be returned to the Contractor. Contractor will be responsible for additional markups required for additional distribution to suppliers and subcontractors.

2.2 MANUFACTURER'S LITERATURE

- A. Where the content of submitted literature from manufacturers includes data not pertinent to this submittal, clearly indicate which portion of the contents is being submitted for the Engineer's review.
- B. Submit manufacturer's literature electronically. The literature shall be reviewed and comments, if any, returned to the Contractor with the status of the submittal indicated. One electronic copy shall be returned to the Contractor.

2.3 SAMPLES

- A. Samples shall illustrate the material, workmanship and established standards by which completed work is judged.
- B. Unless otherwise specifically directed by the Engineer, use the proposed product to be furnished to make all samples.
- C. Submit the number of samples that are desired by the Contractor to be returned plus three samples, which will be retained by the Engineer. Samples shall be reviewed and comments, if any, returned to the Contractor electronically with the status of the submittal indicated.

2.4 COLORS

- A. Unless the precise color and pattern is specifically described in the Contract Documents, wherever a choice of color or pattern is available in a specified product, submit accurate color charts and pattern charts to the Engineer for review and selection.
- B. Submit the number of color and pattern charts that are desired by the Contractor to be returned plus three color and pattern charts to be retained by the Engineer. Submittal of black and white copies will not be acceptable. Charts shall be furnished to the Contractor by the vendor or supplier. Charts printed from the vendor or supplier's web-site will not be acceptable.
- C. Unless all available colors and patterns have identical costs and identical wearing capabilities, and are identically suited to the installation, completely describe the relative costs and capabilities of each.

2.5 ADMINISTRATIVE SUBMITTALS

- A. Copies: Submit electronically unless otherwise directed by the Engineer. When hard copies are to be submitted, provide a minimum of six (6) copies.
- B. Description: Submittals that are not Shop Drawings or Samples, or that do not reflect quality of product or method of construction. May include, but not limited to those Submittals identified below.
- C. Applications for Payment (and Cash Allowance Data and Values): Meet requirements of Section 01 29 73.
- D. Construction Photographs and Video: In accordance with Section 01 32 33 and as may otherwise be required in the Contract Documents.
- E. Progress Reports and Quantity Charts: As may be required in Section 01 32 16.
- F. Schedules:
 - 1. Progress Schedule(s): Meet the requirements of Section 01 32 16.
 - 2. Schedule of Values: Meet requirements of Section 01 29 73.
 - 3. Schedule of Submittal Submissions:
 - a. Prepare a list of submissions grouped by Specification section number, with identification, numbering and tracking system as specified above.
 - b. Submissions will include the following:
 - 1) Shop Drawings and Samples.
 - 2) Training plans.
 - 3) Test procedures and reports.

- 4) Operation and maintenance manuals.
- 5) Specifically required certificates, warranties, and service agreements.
- c. Coordinate submissions with the progress schedule and provide the following:
 - 1) Estimated submission date to Engineer.
 - 2) Specifically requested and clearly identified Engineer review time if shorter than that set forth herein, with justification for such request and critical dates Submittals will be needed from Engineer.
 - 3) For first 6-month period from the date the Contract Times commence or following any update or adjustment of the submissions, the estimated submission date shall be week, month, and year; for submissions beyond 6-month time period, show closest month and year.
- d. Submit to Engineer monthly:
 - 1) Updated list if changes having occurred. Otherwise, submit a written notice that no changes have occurred.
 - 2) Adjusted submissions reflecting submission activity planned for forthcoming 6-month time period and beyond. Coordinate with progress schedule updates.
- G. Training Materials: Meet the requirements of Section 01 43 33.
- H. Submittals Required by Laws, Regulations, and Governing Agencies:
 - 1. Submit promptly notifications, reports, certifications, payrolls, and otherwise as may be required, directly to the applicable federal, state, or local governing agency or their representative.
 - 2. Transmit to Engineer for Owner's records one copy of correspondence and transmittals (to include enclosures and attachments) between Contractor and governing agency.

2.6 QUALITY CONTROL SUBMITTALS

- A. Certificates:
 - 1. Manufacturer's Certificate of Compliance: As specified in Section 01 91 13.
 - 2. Certificates of Successful Testing or Inspection: Submit when testing or inspection is required by Laws and Regulations or governing agency or specified in the individual Specification sections.
 - 3. Manufacturer's Certificate of Proper Installation: As specified in Section 01 91 13.
- B. Operation and Maintenance Manual: As required in Section 01 78 23.
- C. Statements of Qualification: Evidence of qualification, certification, or registration. As required in these Contract Documents to verify qualifications of professional land surveyors, Engineers, materials testing laboratories, specialty subcontractors, trades, specialists, consultants, installers, and other professionals.
- D. Field Samples: Provide as required by individual Specifications and as may be required by Engineer during progress of Work.
- E. Written Test Reports of Each Test and Inspection: As a minimum, include the following:
 - 1. Date of test and date issued, Project title and number, testing laboratory name, address, and telephone number, and name and signature of laboratory inspector.
 - 2. Date and time of sampling or inspection and record of temperature and weather conditions.

3. Identification of product and Specification section, location of Sample, test or inspection in the Project, type of inspection or test with referenced standard or code, certified results of test.
 4. Compliance with Contract Documents, and identifying corrective action necessary to bring materials and equipment into compliance.
 5. Provide an interpretation of test results, when requested by Engineer.
- F. Disposition: Engineer will review, stamp, and indicate requirements for resubmission or acceptance on Submittal as follows:
1. Accepted:
 - a. Acceptance will indicate that Submittal conforms to intent of Contract Documents as to form and substance.
 - b. Contractor may proceed to perform Submittal related Work.
 - c. For electronic submittals, one copy of electronic file will be provided to the Owner, Resident Project Representative, Designer, and Contractor.
 - d. Distribution as follows for hard copy submittals:
 - 1) One copy furnished Owner.
 - 2) One copy furnished Resident Project Representative.
 - 3) One copy retained in Engineer's file.
 - 4) Remaining copies returned to Contractor appropriately annotated.
 2. Rejected as Noted:
 - a. One copy retained in Engineer's file.
 - b. Remaining copies returned to Contractor appropriately annotated.
 - c. Contractor shall revise/correct or develop replacement and resubmit.

2.7 FIXED ASSET REPORT SUBMITTALS

- A. The contractor shall include with each month's pay application a Fixed Asset Report, which is used to officially document the installed inventory of equipment, certain material items, and the structure itself. The report is to be developed in a MS Excel spreadsheet format and will include components of each facility constructed, added, expanded, etc., on the facility site. As work is completed the report will expand, being a cumulative summary of the installed facility work. Pay applications will not be processed until an approved Fixed Asset Report is provided each month.
- B. The format and content of the report to be filled out by the Contractor is as follow:
 1. Description: Description of the specific asset.
 2. Quantity: The specific number of units installed.
 3. Unit of Measurement: The method of determining the quantity (ex. Each, LF, CY, etc.).
 4. Manufacturer Column: The name of the asset manufacturer.
 5. Serial Number: The specific serial number for the asset.
 6. Values: The cost of the asset.
- C. At the conclusion of the project, the cumulative total of cost reported under the Fixed Asset Report will be the total contract value of the work.

- D. The report is to be submitted in both printed and electronic format. Electronic format shall be provided on USB Flash Drive.

2.8 SALES TAX REPORT

- A. To be included with each month's pay application is a Sales Tax Report, which is used to officially document the Georgia Sales Tax expended in the procurement of treatment equipment. All equipment purchased for installation within the water treatment plant will be documented within this report and will be accounted for by item cost and sales tax paid to the State of Georgia. The report is to be developed in a MS Excel spreadsheet format and will include each equipment item purchased, into which facility it is installed, the cost of the individual equipment item/component/system, and the corresponding tax paid on the individual equipment item/component/system. As work is completed or equipment received, the report will be expanded, being a cumulative summary of the treatment equipment installed within the facility.
- B. The format and content of the report shall be as shown in the example at the end of this Section:
- C. The monthly reports shall be accompanied by certified copies of invoices showing the items costs and taxes paid and a copy of the checks used for payment.
- D. The report is to be submitted in both printed and electronic format.

2.9 CONTRACT CLOSEOUT SUBMITTALS

- A. General: In accordance with Section 01 77 00.
- B. Disposition: Engineer will review, stamp, and indicate requirements for resubmission or acceptance on Submittal as follows:
 - 1. No Exceptions Noted (NEN):
 - a. An NEN status will indicate that Submittal conforms to intent of Contract Documents as to form and substance.
 - b. Contractor may proceed to perform Submittal related Work.
 - c. For electronic submittals, one copy of electronic file will be provided to the Owner, Resident Project Representative, Designer, and Contractor.
 - d. Distribution as follows for hard copy submittals:
 - 1) One copy furnished Owner.
 - 2) One copy furnished Resident Project Representative.
 - 3) One copy retained in Engineer's file.
 - 4) One copy returned to Contractor appropriately annotated.
 - 2. Furnish as Corrected (FAC), Revise & Resubmit (R&R) or Rejected (Rej):
 - a. One copy retained in Engineer's file.
 - b. One copy returned to Contractor appropriately annotated.
 - c. Contractor shall revise/correct or develop replacement and resubmit.

PART 3 EXECUTION

3.1 CONTRACTOR'S COORDINATION OF SUBMITTALS

- A. Prior to submittal for the Engineer's review, use all means necessary to fully coordinate all material and products, including the following procedures:

1. Determine and verify all field dimensions and conditions, catalog numbers and similar data.
2. Coordinate as required with all trades and all public agencies involved.
3. Submit a written statement of review and certification of compliance with the requirements of all applicable technical Specifications as well as the requirements of this Section. Contractor's certification to include the following clause:

CONTRACTOR hereby certifies that (i) CONTRACTOR has complied with the requirements of Contract Documents in preparation, review, and submission of designated Submittal and (ii) the Submittal is complete and in accordance with the Contract Documents and requirements of laws and regulations and governing agencies.

By: _____
CONTRACTOR (Authorized Signature)

4. Clearly indicate in a letter or memorandum on the manufacturer's or fabricator's letterhead, all deviations from the Contract Documents. Clearly mark the deviation in the body of the submittal and state the deviation on the transmittal form of the submittal. Describe the benefits and reasons for the deviation.
- B. Each shop drawing submittal transmittal sheet describing the submittal contents and the submittal package cover page shall bear the Contractor's stamp showing that the submittal has been fully reviewed. Shop drawings submitted to the Engineer without the Contractor's stamp will not be reviewed by the Engineer. The submittal will be returned to the Contractor for conformance with this requirement.
- C. The Owner, at its discretion, may charge the Contractor for the Engineer's review cost if more than two reviews of a submittal occur before a "No Exceptions Noted" or "Furnish as Corrected" status is achieved.
- D. Packaging of Submittals:
1. Submittals shall be packaged. Submittals in packages shall be submitted simultaneously. Unless otherwise specifically permitted by the Engineer, make all submittals in packages containing all submittals indicated by the submittal log to be packaged together.
 2. No review will be given to partial submittals or incomplete packages of submittals. It is the Contractor's responsibility to assemble the shop drawings for interconnecting and interdependent items, check them and then make one submittal to the Engineer along with Contractor's comments as to compliance, non-compliance or features requiring special attention.
- E. Design Data: When specified, provide Project-specific information as required and as necessary to clearly show calculations, dimensions, logic and assumptions, and referenced standards and codes upon which design is based.
- F. Foreign Manufacturers: When proposed, include following additional information:
1. Names and addresses of at least two companies closest to Project that maintain technical service representatives.
 2. Complete inventory of spare parts and accessories for each piece of equipment.
- G. Preparation:
1. Format: Whenever possible, schedule for and combine Shop Drawings and Samples required for submission in each Specification section or division into a single Submittal package. Also combine product data for like items into a single Submittal package.

2. Present in a clear and thorough manner and of sufficient detail to show kind, size, arrangement, and function of components, materials, and devices and compliance with Contract Documents. Identify details by reference to sheet and detail, and schedule or room numbers shown on Drawings.
3. Piping Systems: Drawn to scale.
4. Product Data: Clearly mark each copy to identify pertinent products or models and show performance characteristics and capacities, dimensions and clearances required, wiring or piping diagrams and controls, and external connections, anchorage, and supports required.
5. Equipment and Component Titles: Identical to title shown on Drawings.
6. Manufacturer's standard schematic drawings, diagrams, and product data as follows:
 - a. Modify to delete information that is not applicable to Work.
 - b. Supplement standard information to provide information specifically applicable to Work.

3.2 TIMING OF SUBMITTALS

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

3.3 REVIEWED SUBMITTALS

- A. Engineer Review:
 1. Allow a minimum of 14 days for the Engineer's initial processing of each submittal requiring review and response, except allow longer periods for submittals needing coordination with subsequent submittals. The Engineer shall inform the Contractor promptly when it is determined that a submittal being processed must be held for coordination.
 2. Acceptable submittals with no review comment shall be marked "No Exceptions Noted". A submittal with an "NEN" status shall not be resubmitted.
 3. Submittals requiring minor corrections will be marked "Furnish as Corrected". The Contractor may order, fabricate and ship the products, provided the indicated corrections are made. A submittal with an "FAC" status must be completely resubmitted for review and marked "NEN" prior to installation or use of the submitted product. The resubmission shall be accompanied by a letter as referenced in Article 1.1.B.4. above. No payment will be made for materials stored onsite or incorporated into the work until the resubmittal obtains an "NEN" status.
 4. Submittals marked "Revise and Resubmit" must be resubmitted with revisions reflecting the Engineer's comments. The resubmission shall be accompanied by a letter as referenced in Article 1.1.B.4. above. The Contractor shall not order, fabricate or ship items that correspond to an "R&R" submittal.
 5. Submittals marked "Rejected" are not acceptable. Upon return of a submittal so marked, the Contractor shall repeat the initial review procedure utilizing acceptable products.

- B. No product shall be installed that does not have a corresponding submittal bearing a status of “No Exceptions Noted” or “Furnish as Corrected”. Maintain at the job site a complete set of current submittals indicating the review status established by the Engineer.
- C. Substitutions: In the event the Contractor obtains the Engineer's approval for the use of products other than those which are listed first in the Contract Documents, the Contractor shall, at the Contractor's own expense and using methods approved by the Engineer, make any changes to structures, piping and electrical work that may be necessary to accommodate these products.
- D. Use of the “No Exceptions Noted” 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 responsibility for errors of any kind on the submittals. The Engineer’s review shall not relieve the Contractor of responsibility for errors therein and shall not be regarded as an assumption of risks or liability by the Engineer, Designer or the Owner, or by any officer or employee thereof, and the Contractor shall have no claim under the Contract on account of the failure, or partial failure, of the method of work, material or equipment so reviewed. Review is intended only to assure conformance with the design concept of the Project and compliance with the information given in the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site. The Contractor is also responsible for information that pertains solely to the fabrication processes or to the technique of construction and for the coordination of the work of all trades.

3.4 RESUBMISSION REQUIREMENTS

- A. Accept full responsibility for the completeness of each resubmittal. Verify that all corrected data and additional information previously requested by the Engineer are provided on the resubmittal. Accompany the resubmission with a letter as referenced in Article 1.1.B.4. above. Clearly mark and alert the Engineer to the presence of changes within the resubmittal that are other than those required by the Engineer’s comments on the previous submittal. Requirements specified in initial submittals shall also apply to resubmittals.

3.5 ATTACHMENTS

- A. Supplement listed below, following “END OF SECTION,” is a part of this Specification:
 - 1. Fixed Asset Report Example
 - 2. Sales Tax Report Form Example

END OF SECTION

Example Fixed Asset Report Form

Business Unit	Asset Number	Asset Description	Asset Description 2	Location Description	Manufacturer	Vendor	Serial Number	Useful Life	Ins Cls	Cost
720	104717	Valve,Pre. Treat.,Slide Gate	Tag # 147G1, 60"x96"	Preliminary Treatment				20	OE	\$15,000.00
720	104718	Valve,Pre. Treat.,Sluice Gate	Tag # 138G1, 48"x60"	Preliminary Treatment				20	OE	\$13,871.00
720	104838	Valve, Prelimin.Treat.,12" Mud	12" Mud Valve, Type V915	Preliminary Treatment				20	OE	\$7,835.00
720	104839	Valve, Prelimin.Treat.,12" Mud	12" Mud Valve, Type V915	Preliminary Treatment				20	OE	\$7,835.00
720	104840	Valve, Prelimin.Treat.,4" BFV	4" Butterfly Valve, Type V512	Preliminary Treatment				20	OE	\$415.00
720	104841	Valve, Prelim.Treat.,4" Check	4" Swing Check, Type V612	Preliminary Treatment				20	OE	\$595.00
720	104842	Panel,Control, Fine Screen	Tag # 132 CP	Preliminary Treatment				15	B/M	\$15,000.00
720	104901	Panel,Control, Air Mixing	Tag # 134 CP	Preliminary Treatment				15	B/M	\$950.00
720	104902	Panel,Control, Mixer	Tag # 130 CP	Preliminary Treatment				15	B/M	\$950.00
720	104903	Panel,Vacuum Pump Enclosure	Includes Vacuum Pump & Misc.	Preliminary Treatment				15	B/M	\$12,500.00
720	104904	Panel,Control, Grit Removal	Tag # 141 CP	Preliminary Treatment				15	B/M	\$15,500.00
720	104914	Mixer,Preliminary,Propeller Ty	Tag # 130M1,Flygt 4650 SJ	Preliminary Treatment				15	OE	\$23,367.00
720	104916	Hoist, Fine Screen Assy.	Hoist / Crane Assy.	Preliminary Treatment				20	OE	\$2,564.00
720	104917	Meter, ph, Influent	Tag # 130AE,Rosemount pH Meter	Preliminary Treatment	Rosemount			15	OE	\$2,250.00
720	104918	Blower, Influent Mixing Assy.	Tag # 134M1	Preliminary Treatment				20	OE	\$20,104.00
720	104919	Motor, Influent Mixer Assy.	Tag # 134M-MO	Preliminary Treatment				15	B/M	\$5,026.00
720	104920	Screen,Inf.Fine Screen Assy.#1	Tag#131M1,6mm scr,spac	Preliminary Treatment	Parkson	TDH		12	B/M	\$70,000.00
720	104921	Gearbox, Inf. Fine Screen #1	Tag # 131M1-GB	Preliminary Treatment	Parkson	TDH		15	B/M	\$4,750.00
720	104922	Motor, Fine Screen #1	Tag # 131M1-MO	Preliminary Treatment	Parkson	TDH		15	B/M	\$250.00
720	104923	Screen,Inf.Fine Screen Assy.#2	Tag#131M2,6mm scr,spac	Preliminary Treatment	Parkson	TDH		12	B/M	\$70,000.00
720	104924	Gearbox, Inf. Fine Screen #2	Tag # 131M2-GB	Preliminary Treatment	Parkson	TDH		15	B/M	\$4,750.00
720	104925	Motor, Fine Screen #2	Tag # 131M2-MO	Preliminary Treatment	Parkson	TDH		15	B/M	\$250.00
720	104926	Compactor #1,Screenings	Tag #132M1 Parkson Roto Press	Preliminary Treatment	Parkson	TDH		12	B/M	\$24,750.00
720	104935	Motor,Compactor #1,Fine Screen	Tag # 132M1-MO	Preliminary Treatment	Parkson	TDH		15	B/M	\$250.00
720	104936	Compactor #2,Screenings	Tag #132M2 Parkson Roto Press	Preliminary Treatment	Parkson	TDH		12	B/M	\$24,750.00
720	104937	Motor,Compactor #2,Fine Screen	Tag # 132M2-MO	Preliminary Treatment	Parkson	TDH		15	B/M	\$250.00
720	104940	Screen, Inf. Manual Bar Screen		Preliminary Treatment				12	OE	\$5,456.00
720	104941	Grit Sperator Mechanism	Tag #141,Pista Grit Sperator	Preliminary Treatment	Smith & Loveless	Smith & Loveless		12	B/M	\$68,710.00
720	104942	Gearbox, Grit Sperator	Tag # 141M-GB	Preliminary Treatment	Smith & Loveless	Smith & Loveless		15	B/M	\$12,750.00
720	104943	Motor,Grit Sperator	Tag # 141M-MO	Preliminary Treatment	Smith & Loveless	Smith & Loveless		15	B/M	\$791.00
720	104944	Pump,Grit Pump	Tag # 141P	Preliminary Treatment	Smith & Loveless	Smith & Loveless		12	B/M	\$14,000.00
720	104945	Motor, Grit Pump	Tag # 141P-MO	Preliminary Treatment	Smith & Loveless	Smith & Loveless		15	B/M	\$3,247.00
720	104946	Grit Cyclone, Wemco	Tag # 142M	Preliminary Treatment	Wemco	Principal Env.		15	B/M	\$15,500.00
720	104947	Grit Classifier, Wemco	Tag # 143M,18" Hydrogritter	Preliminary Treatment	Wemco	Principal Env.		15	B/M	\$23,900.00
720	104957	Motor, Grit Classifier	Tag # 143M-MO, Reliance	Preliminary Treatment				15	B/M	\$591.00
720	104958	Valve, Grit Wash Water	Tag # 145FV	Preliminary Treatment				20	OE	\$200.00
720	104961	Panel, Circuit Breaker	Tag # 7LP1,208Y/120V	Preliminary Treatment				15	B/M	\$1,250.00
720	105898	Valve,Yard,W3,@ Pretreatment	1.5" Gate Valve, Type V100	Preliminary Treatment				20	OE	\$75.00

Example Sales Tax Report Form

Item No.	Equipment or machinery	Function	Cost	Sales tax paid	Date paid	Pay Request No.
1	Frames	Cover for valve vault. Valves are an integral part of process piping used in the sprayfields.	\$1,914.00	\$114.84	11/19/1996	2
2	Reinforcing Steel	Used in construction of the irrigation pump station. This pump station pumps wastewater to the sprayfields for land treatment.	\$4,590.00	\$275.40	11/19/1996	2
3	PVC pipe and fittings	Onsite process piping. Piping is an integral part of the treatment process - it conveys wastewater from pump station to sprayfields.	\$23,780.00	\$1,426.80	11/19/1996	2
4	PVC pipe and fittings	Onsite process piping	\$7,354.80	\$441.29	11/19/1996	2
5	PVC pipe and fittings	Onsite process piping	\$10,613.60	\$636.82	11/19/1996	2
6	PVC pipe and fittings	Onsite process piping	\$12,077.20	\$724.63	11/19/1996	2
7	PVC pipe and fittings	Onsite process piping	\$31,223.60	\$1,873.42	11/19/1996	2
8	PVC pipe and fittings	Onsite process piping	\$13,190.40	\$791.42	11/19/1996	2
9	PVC pipe and fittings	Onsite process piping	\$39,672.78	\$2,380.37	11/19/1996	2
10	PVC pipe and fittings	Onsite process piping	\$11,688.80	\$701.33	11/19/1996	2
11	PVC pipe and fittings	Onsite process piping	\$4,477.20	\$268.63	11/19/1996	2
12	PVC pipe and fittings	Onsite process piping	\$7,844.00	\$470.64	11/19/1996	2
13	PVC pipe and fittings	Onsite process piping	\$1,517.40	\$91.04	11/19/1996	2
14	PVC pipe and fittings	Onsite process piping	\$13,190.40	\$791.42	11/19/1996	2
15	Ductile iron pipe and fittings	Onsite process piping	\$32,036.99	\$1,922.22	11/19/1996	2
16	Ductile iron pipe and fittings	Onsite process piping	\$244.26	\$14.66	11/19/1996	2
17	Ductile iron pipe and fittings	Onsite process piping	\$21,760.74	\$1,305.64	11/19/1996	2
18	Ductile iron pipe and fittings	Onsite process piping	\$2,228.21	\$133.69	11/19/1996	2
19	Ductile iron pipe and fittings	Onsite process piping	\$98,561.36	\$5,913.68	11/19/1996	2
20	Flange Bolt Sets	Onsite process piping	\$504.68	\$30.28	11/19/1996	2
21	Drain Valves	Onsite process piping - drain valves prevent freezing damage to sprinkler risers.	\$2,424.40	\$145.46	11/19/1996	2
22	Sprinklers	Onsite process piping - sprinklers irrigate wastewater on forested land for treatment.	\$51,228.40	\$3,073.70	11/19/1996	2
23	Screen	Used in the irrigation pump station to prevent clogging of sprinklers.	\$1,970.00	\$118.20	12/18/1996	3
24	Misc. metals	Onsite process piping - hatch for valve vault	\$1,565.00	\$93.90	12/18/1996	3
25	Misc. metals	Used in construction of the wastewater treatment operations bldg.	\$1,937.00	\$116.22	12/18/1996	3
26	Sprinklers	Onsite process piping - sprinklers irrigate wastewater on forested land for treatment.	\$1,213.44	\$72.81	12/18/1996	3
27	Brass adapters	Onsite process piping - adapter from ball valve to sprinkler on spray sprinkler risers	\$11,151.00	\$669.06	12/18/1996	3
28	Brass adapters	Onsite process piping - adapter from ball valve to sprinkler on spray sprinkler risers	\$2,124.00	\$127.44	12/18/1996	3
29	Tapping Saddles	Onsite process piping	\$5,572.63	\$334.36	12/18/1996	3
30	Gate Valves	Onsite process piping - sprayfield isolation valves	\$6,221.43	\$373.29	12/18/1996	3
31	Flange Bolt Sets	Onsite process piping - sprayfield isolation valves	\$292.68	\$17.56	12/18/1996	3
32	Ductile iron pipe and fittings	Onsite process piping	\$2,777.03	\$166.62	12/18/1996	3

MAINTENANCE OF UTILITY OPERATIONS DURING CONSTRUCTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Administrative Requirements
1.3	General Constraints

B. Scope

1. Coordinate with the Owner and provide all labor, materials and equipment required to maintain existing facilities in operation during construction operations.

1.2 ADMINISTRATIVE REQUIREMENTS

A. Coordination

1. The existing facility to which these modifications are being made will be maintained in continuous operation by the Owner during the entire construction period of the Contract as hereinafter specified. The intent of this section is to outline the minimum requirements necessary to ensure operation throughout the construction period.
2. The Contractor has the option of providing additional temporary facilities that can eliminate a constraint, provided it is done without cost to the Owner and provided that all requirements of these Specifications are fulfilled. Work not specifically covered in the following paragraphs may, in general, be done at any time during the Contract period, subject to the operating requirements and constraints and construction requirements outlined hereinafter. All references to days in this Section shall be consecutive calendar days.

B. Scheduling

1. Coordinate the construction schedule with the Owner so the facility is kept completely operational at all times.
2. Schedule and conduct work under the Contract so as not to impede operation. In performing the work shown and specified, plan and schedule the work to meet the facility operating requirements and the constraints and construction requirements as outlined in this Section.

1.3 GENERAL CONSTRAINTS

- A. Schedule the Work so that the facility is maintained in continuous operation. Have all short-term system or partial systems shutdowns approved by the Owner. Long-term shutdowns shall not be allowed. If, in the judgment of the Owner, a requested shutdown is not required for the Contractor to perform the Work, the Contractor shall utilize approved alternative methods to accomplish the Work. Coordinate all shutdowns with and schedule at times suitable to the Owner. Do not begin shutdowns until all required materials are on hand and ready for installation. Each shutdown period shall commence at a time approved by the Owner, and the Contractor shall proceed with the Work continuously, start to finish, until the Work is completed and normal facility operation is restored. If the Contractor

completes all required Work before the specified shutdown period has ended, the Owner may immediately place the existing system back into service.

- B. Schedule short-term shutdowns in advance and fully coordinate all desired shutdowns with the Owner in writing at least one (1) week prior in each case. Owner personnel shall operate Owner's facilities involved in the short-term shutdowns.
- C. Short-term shutdowns will be allowed for tie-ins to existing pipelines, modifying existing connected pipe, and setting up equipment for access to facilities to be modified. Duration of short-term interruptions allowed will depend on water demand. The schedule and duration of short-term shutdowns shall be at the discretion of the Owner.
- D. Furnish, at the direction of the Engineer at no extra cost to the Owner, any temporary work, facilities, protection of existing structures, piping, blind flanges, valves, equipment, etc. that may be required within the Contractor's work limits to maintain continuous and dependable facility operation.
- E. The Owner shall have the authority to order Work stopped or prohibited that would, in his opinion, unreasonably result in interrupting the necessary functions of the facility operations.
- F. If the Contractor impairs performance or operation of the facility as a result of not complying with specified provisions for maintaining facility operations, then the Contractor shall immediately make all repairs or replacements and do all work necessary to restore the facility to operation to the satisfaction of the Owner. Such work shall progress continuously to completion on a 24 hours per day, 7 days per week basis.
- G. Provide the services of emergency repair crews on call on a 24 hours per day, 7 days per week basis.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Permits and Responsibilities of Contractor:

1. Be responsible for obtaining all necessary licenses and permits, including building permits, and for complying with any applicable federal, state, county and municipal laws, codes, ordinances and regulations, in connection with the prosecution of the Work, without additional expense to the Owner.
2. Be responsible for coordinating and scheduling all necessary inspections required by applicable federal, state, county and municipal codes and regulations in relation to licenses and permits, including building permits issued for the project.

B. Take proper safety and health precautions to protect the Work, the workers, the public and the property of others.

C. Be responsible for all materials delivered and work performed until completion and acceptance of the Work.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

CODES AND STANDARDS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Standard Organizations
1.3	Symbols

B. Description

- Whenever reference is made to conform to the standards of any technical society, organization, body, code or standard, it shall be construed to mean the latest standard, code, specification or tentative specification adopted and published at the time of advertisement for Bids. This shall include the furnishing of materials, testing of materials, fabrication and installation practices. In those cases where the Contractor's quality standards establish more stringent quality requirements, the more stringent requirement shall prevail. Such standards are made a part hereof to the extent which is indicated or intended.
- The inclusion of an organization under one category does not preclude that organization's standards from applying to another category.
- In addition, all work shall comply with the applicable requirements of local codes, utilities and other authorities having jurisdiction.
- All material and equipment, for which an Underwriter's Laboratories (UL) Standard, an American Gas Association (AGA) or National Sanitation Foundation (NSF) approval or an American Society of Mechanical Engineers (ASME) requirement is established, shall be so approved and labeled or stamped. The label or stamp shall be conspicuous and not covered, painted, or otherwise obscured from visual inspection.
- The standards which apply to this Project are not necessarily restricted to those organizations which are listed in Paragraph 1.2.

1.2 STANDARD ORGANIZATIONS

A. Piping and Valves:

- ANSI American National Standards Institute
- API American Petroleum Institute
- ASME American Society of Mechanical Engineers
- AWWA American Water Works Association
- DIPRA Ductile Iron Pipe Research Association
- FCI Fluid Controls Institute
- NSF National Sanitation Foundation

B. Materials:

- AMA Acoustical Materials Association
- ANSI American National Standards Institute

3. ASTM American Society for Testing and Materials
- C. Painting and Surface Preparation:
1. NACE National Association of Corrosion Engineers
 2. SSPC The Society for Protective Coatings
- D. Electrical and Instrumentation:
1. ICEA Insulated Cable Engineers Association
 2. IEEE Institute of Electrical and Electronic Engineers
 3. IPCEA Insulated Power Cable Engineers Association
 4. NEC National Electric Code
 5. NEMA National Electrical Manufacturers Association
 6. NFPA National Fire Protection Association
 7. UL Underwriter's Laboratories
- E. Aluminum:
1. AA Aluminum Association
 2. AAMA American Architectural Manufacturers Association
- F. Steel, Concrete, and Asphalt:
1. ACI American Concrete Institute
 2. AISC American Institute of Steel Construction, Inc.
 3. AISI American Iron and Steel Institute
 4. CRSI Concrete Reinforcing Steel Institute
 5. NRMA National Ready-Mix Association
 6. PCA Portland Cement Association
 7. PCI Prestressed Concrete Institute
- G. Welding:
1. ASME American Society of Mechanical Engineers
 2. AWS American Welding Society
- H. Government and Technical Organizations:
1. ASQC American Society of Quality Control
 2. CFR Code of Federal Regulations
 3. CSI Construction Specifications Institute
 4. EPA Environmental Protection Agency
 5. FCC Federal Communications Commission
 6. FS Federal Specifications
 7. ISO International Organization for Standardization
 8. NBS National Bureau of Standards
 9. OSHA Occupational Safety and Health Administration
- I. Equipment:

1. AFBMA Anti-Friction Bearing Manufacturers Association, Inc.
2. AGMA American Gear Manufacturers Association

1.3 SYMBOLS

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

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 43 33

MANUFACTURER SERVICES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Qualification
1.3	Submittals
1.4	Coordination
1.5	Installation, Start-up, and Testing Services
1.6	Operator Training Services
1.7	Documentation

B. Scope

1. The work under this Section defines the minimum scope of services to be provided by the Contractor during material storage, installation, testing, start-up, and operator training using factory representatives of the manufacturers of the installed equipment.
2. Furnish all labor, materials, tools, equipment, and services for the cleaning up or preparation of all equipment which is required in conjunction with the instruction work to be performed for the Owner's personnel.
3. Although such work may not be explicitly specifically indicated elsewhere, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation, and to provide instructions upon the functions of that installation.
4. Provide instruction for all equipment and systems for which operating and maintenance data is required.
5. Instruction sessions may be combined to some extent between several pieces of similar equipment within the same training session, but only if that combination is defined in the Contractor's instruction program submittal and approved by the Engineer.
6. A minimum of one instruction session or two 1/2-day sessions for each major type of equipment will be required. Anticipate that up to ten of the Owner's employees will participate in any particular instruction session, and be prepared to provide the required number of handouts, manuals, and tools for each session.
7. Perform additional instruction of the Owner's personnel for any and all items of work that are incomplete at the time initial instruction sessions are scheduled.

1.2 QUALIFICATIONS

- A. Qualification of the manufacturer's representatives for installation, start-up, and operator training purposes shall be appropriate for the equipment being installed. Manufacturer's representatives shall be subject to the approval of the Engineer. Where equipment has significant process complexity, furnish the services of engineering personnel knowledgeable in the process involved and the function of the equipment.

- B. References in various equipment sections of the terms “factory representative” or “field representative” shall mean an employee of the equipment manufacturer who is completely knowledgeable of the manufacturing, installation, operation and maintenance of the equipment. A sales representative does not qualify. Any field or factory representative not an active employee of the manufacturer must provide documentation from the manufacturer stating that the individual, by name, has been formally trained in the installation, operation and maintenance of the equipment and is authorized to make the required certification to perform the required services.

1.3 SUBMITTALS

- A. Submit a list of proposed instruction sessions for the entire Project no later than ninety days prior to scheduled Substantial Completion of the Work. Organize the list by Specification Section and its contents will be subject to the approval of the Engineer and Owner.
- B. After approval of the list of the proposed instruction sessions and no later than sixty days prior to the scheduled Substantial Completion of the Work, submit course outlines for each of the approved instruction sessions. Outlines shall be organized by Specification Section, and their contents will be subject to the approval of the Engineer. Include both classroom and hands-on training in the outlines.
- C. After approval of the program content, submit a proposed schedule for each of the approved instruction sessions which are to be organized by Specification Section, and the scheduled dates will be subject to the approval of the Engineer.
- D. Submit a separate instruction request/report for each system or type of equipment, subject to the Owner’s approval of availability of personnel.
 - 1. Submit request/report with preliminary information indicated, to the Engineer at least two weeks prior to first instruction period.
 - 2. After each instruction session, submit three copies of the completed report to the Engineer.

1.4 COORDINATION

- A. Do not begin instructions until component assembly or system has been tested as specified in Section 01 91 13 and is in satisfactory operating condition.
- B. Prior to instruction sessions, assemble instructional aids, tools, test equipment, and “Final” copies of Operations and Maintenance Manuals.
- C. All instruction sessions shall be planned and scheduled such that the Owner’s participants will utilize “Final” copies of the Project Operations and Maintenance Manuals which will have been previously provided. These copies are in addition to the quantities which have to be provided to the Owner under Section 01 78 23. The use of preliminary or draft copies of these manuals will not be acceptable.
- D. Schedule and coordinate the visits of factory representatives during installation, start-up and operator training in accordance with the requirements of Section 01 91 13 of these Specifications.
- E. Notify the Engineer 72 hours prior to any impending visit by factory representatives so that the Engineer can be present.

1.5 INSTALLATION, START-UP, AND TESTING SERVICES

- A. Furnish the services of a factory representative to provide the pre-start-up maintenance, installation, inspection, functional testing, and operational testing in accordance with Section 01 91 13 and the equipment sections of these Specifications.

- B. Perform installation, start-up, and testing services in advance of operator training. Operator training services are to be provided on a separate day from start-up and testing services, unless approved otherwise by the Owner.

1.6 OPERATOR TRAINING SERVICES

- A. Provide all instruction as required to ensure understanding of all operating and maintenance procedures by the Owner designated personnel.
- B. Instruct Owner's personnel in operation and maintenance of equipment and systems. Provide all necessary instruction to satisfaction of the Owner.
- C. Schedule training sessions at the convenience of the Owner. Training sessions may have to be scheduled outside of the Contractor's normal working hours.
- D. Explain use of Operating and Maintenance Manuals.
- E. Tour building areas involved and identify:
 - 1. Maintenance and access points.
 - 2. Control locations and control equipment.
- F. Explain operating sequences:
 - 1. Identify location and show operation of switches, valves, etc., used to start, stop, and adjust systems.
 - 2. Explain use of flow diagrams, operating sequences, diagrams, etc.
 - 3. Demonstrate operation through complete cycle(s) and full range of operation in all modes, including testing and adjusting relevant to operation.
- G. Explain use of control equipment, including temperature settings, switch modes, available adjustments, reading of gauges, and functions that must be serviced only by authorized factory representative.
- H. Explain troubleshooting procedures:
 - 1. Demonstrate commonly occurring problems.
 - 2. Note procedures which must be performed by factory personnel.
- I. Explain maintenance procedures and requirements:
 - 1. Point out items requiring periodic maintenance.
 - 2. Demonstrate typical preventive maintenance procedures and recommend typical maintenance intervals.
 - 3. Demonstrate other commonly occurring maintenance procedures not part of preventive maintenance program.
 - 4. Identify maintenance materials to be used.
- J. Furnish all tools and/or test equipment required for proper instruction of the Owner's personnel. Distribute tools and/or test equipment in "sets" with each two participants having a "set" to work with and retain upon completion of the instruction. Each participant shall sign for their tools at the start of the instruction session, and copies of the assignment documents shall be provided to the Engineer by the Contractor.
- K. Thirty-day operating period after start-up: The manufacturers' representative for each piece of equipment shall return to the project site 30 days after successful completion of the operating test to review the equipment performance, correct any equipment problems, and conduct follow-up operation and maintenance classes as required by the Owner. This

follow-up trip is required in addition to the specified services of manufacturer's representative prior to and during equipment start-up. At this time, if there are no equipment problems, each manufacturer shall certify to the Owner in writing that his equipment is fully operational and capable of meeting operating requirements. If the certification is accepted by the Engineer and Owner, the warranty period for that piece of equipment shall be considered to have begun as of the start-up date. If the equipment is operating incorrectly, the factory representative will make no certification to the Owner until the problems are corrected and the equipment demonstrates a successful 30 days operating period. At the conclusion of that period, the warranty start date will be decided upon by the Owner.

- L. Six month operating period after start-up: The manufacturer's representative for each piece of equipment shall return to the project site six months after the successful completion of the operating test to review the equipment performance, correct any equipment problems, and conduct follow-up operation and maintenance classes as required by the Owner. This follow-up trip is required in addition to the specified services of manufacturer's representative prior to and during equipment start-up. At the time of this trip, if there are no equipment problems, each manufacturer shall certify to the Owner in writing that his equipment is fully operational and capable of meeting operating requirements. If the equipment is operating incorrectly, the service representative will make no certification to the Owner until the problems are corrected and the equipment demonstrates a successful 30-day operating period after problems are corrected.

1.7 DOCUMENTATION

- A. Provide the services of an experienced professional audio-visual firm to record on digital video all operators instruction(s), training sessions, and seminar(s), both initial and follow-up sessions. Videos shall incorporate professionally produced graphic elements and other animation to ensure the trainings are compelling and dynamic. Video shall be edited to fit an educational/training format using cutaways and other techniques to reinforce the trainer's dialogue and message. The audio-video firm shall have the appropriate technical resources on staff to edit the videos consistent with the engineering aspects appropriate to the specified equipment. Equipment vendors shall provide drawings and/or other visual aids in electronic format to the audio-video firm. Fully inform all subcontractors, suppliers, and manufacturers of the requirement prior to award of any subcontracts. To the greatest extent possible, the training sessions and corresponding videos shall be conducted and documented individually by equipment type.
- B. Obtain from all manufacturers an electronic file of all operation and training information and training presentation materials in searchable Adobe Acrobat Portable Document Format (PDF). Fully index the PDF file using the Table of Contents, searchable with thumbnails generated. File(s) shall be identified by specification section. Scan all documents at 300dpi or greater utilizing optical character recognition (OCR) software. All text in the document must be text selectable with the exception of pages which are in their entirety drawings or diagrams. Word searches of the PDF document must function successfully. PDF files that fail to comply with the indexing and searchable features described above will not be acceptable.
- C. Submit a draft copy of the video on USB flash drives to the Engineer for review prior to making copies of the training sessions. Video will be reviewed for sound, lighting, and tape quality.
- D. Once approved, provide the Owner six copies of the video for each occasion and/or each piece of equipment. Properly label and log the video per its contents. Provide the video along with a release from the manufacturer authorizing unlimited use of the videos by the Owner.

- E. At the completion of each training session, the training session will be certified by representatives from the Manufacturer, Contractor, Owner and Engineer. Deliver a training attendance roster for each session identifying all participants to the Engineer.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Definitions
1.3	References
1.4	Submittals
1.5	Owner's Quality Assurance
3.1	General
3.2	Submittal Quality Control
3.3	Testing Quality Control
3.4	Completion Inspection

B. Scope

1. The work covered under this section includes all services necessary to ensure the required quality standards are met by the Contractor throughout the project.

1.2 DEFINITIONS

- A. Contractor Quality Control (CQC): The means by which Contractor ensures the construction, including that performed by subcontractors and suppliers, complies with the requirements of the Contract.

1.3 REFERENCES

- A. The following is a list of standards which may be referenced in this section:

1. ASTM International (ASTM):
 - a. D3740, Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
 - b. E329, Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspections.

1.4 SUBMITTALS

A. Informational Submittals

1. CQC Plan: Submit, not later than 30 days after receipt of Notice-to-Proceed. At a minimum include the following:
 - a. Name, title, and contact information for Contractor Quality Control Officer and onsite Quality Control personnel.
 - b. Procedures Contractor follows to ensure quality of completed work.
 - c. Description of how Contractor manages quality control of subcontractors.

1.5 OWNER'S QUALITY ASSURANCE

- A. All work is subject to Owner's quality assurance inspection and testing at all locations and at all reasonable times before acceptance to ensure strict compliance with the terms of the Contract Documents.
- B. Owner's quality assurance inspections and tests are for the sole benefit of Owner and do not:
 - 1. Relieve Contractor of responsibility for providing adequate quality control measures.
 - 2. Relieve Contractor of responsibility for damage to or loss of the material before acceptance.
 - 3. Constitute or imply acceptance.
 - 4. Affect the continuing rights of Owner after acceptance of the completed Work.
- C. The presence or absence of a quality assurance inspector does not relieve Contractor from any Contract requirements.
- D. Promptly furnish all facilities, labor and material reasonably needed for performing such safe and convenient inspections and tests as may be required by Engineer.
- E. Owner may charge Contractor for any additional cost of inspection or test when Work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes re-inspection or retest necessary. Quality assurance inspections and tests will be performed in a manner that will not unnecessarily delay the Work.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 GENERAL

- A. Maintain an adequate inspection system and perform such inspections as will ensure that the work conforms to the Contract Documents.
- B. Maintain complete inspection records and make them available at all times to Owner and Engineer.
- C. The quality control system shall consist of plans, procedures, and organization necessary to produce an end product that complies with the Contract Documents. The system shall cover all construction and demolition operations, both onsite and offsite, including Work by subcontractors, fabricators, suppliers, and purchasing agents, and shall be keyed to the proposed construction sequence.

3.2 SUBMITTAL QUALITY CONTROL

- A. Provide submittals in accordance with the requirements of Section 01 33 23.
- B. Certify all submittals are in compliance with the Contract requirements.
- C. Where manufacturing testing and/or sampling is required, provide test results on forms approved by the Engineer.

3.3 TESTING QUALITY CONTROL

- A. Testing Procedure
 - 1. Perform tests specified or required to verify control measures are adequate to provide a product which conforms to the Contract requirements.

2. Procure services of a licensed testing laboratory.
3. Perform the following activities and record the following data:
 - a. Verify testing procedures comply with the Contract requirements.
 - b. Verify facilities and testing equipment are available and comply with testing standards.
 - c. Check test instrument calibration data against certified standards.
 - d. Verify recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
 - e. Documentation:
 - 1) Record results of all tests taken, both passing and failing.
 - 2) Include specification paragraph reference, location where tests were taken, and sequential control number identifying the test.
 - 3) Actual test report may be submitted later, if approved by the Engineer, with reference to the test number and date taken.
 - 4) Provide directly to the Engineer an information copy of tests performed by an offsite or commercial test facility. Have test results signed by an engineer registered in the State of Georgia.
 - 5) Failure to submit timely test reports, as stated, may result in nonpayment for related Work performed and disapproval of the test facility for this Contract.

B. Testing Laboratories

1. Utilize laboratory facilities, including personnel and equipment, for testing concrete, and steel which meet criteria detailed in ASTM D3740 and ASTM E329.
2. Utilize laboratory facilities accredited by the American Association of Laboratory Accreditation (AALA), National Institute of Standards and Technology (NIST), National Voluntary Laboratory Accreditation Program (NVLAP), or other approved national accreditation authority.
3. Provide personnel certified by the American Concrete Institute (ACI) for performing concrete testing.
4. Owner reserves the right to reject the testing laboratory selected by the Contractor.

3.4 COMPLETION INSPECTION

- A. Conduct an inspection of the Work at the completion of all Work or any milestone established by a completion time stated in the Contract. Inspection to be performed by the Contractor's Quality Control Officer and onsite Quality Control personnel.
- B. Contractor Punch List
 1. Develop a punch list of items which do not conform to the Contract requirements and indicate the estimated date by which the deficiencies will be corrected.
 2. Perform second inspection to verify all deficiencies have been corrected and notify the Engineer and Owner.
 3. Complete Contractor punch list prior to Engineer and Owner preparing a final punch list.

END OF SECTION

SECTION 01 45 29

TESTING LABORATORY SERVICES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Payment for Testing Services
1.3	Laboratory Duties
1.4	Contractor Responsibilities
1.5	Quality Assurance
1.6	Product Handling
1.7	Furnishing Materials
1.8	Code Compliance
1.9	Contractor's Convenience Testing
1.10	Schedules for Testing
1.11	Taking Specimens
1.12	Transporting Samples

B. Scope

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

1.2 PAYMENT FOR TESTING SERVICES

- A. The cost of testing services required by the Contract to be provided by the Contractor shall be paid for by the Owner, i.e., concrete testing, soil compaction, and asphalt testing.
- B. The cost of material testing described in various sections of these Specifications or as required in referenced standards to be provided by a material manufacturer, shall be included in the price bid for that item and shall not be paid for by the Owner.
- C. The cost of retesting any item that fails to meet the requirements of these Specifications shall be paid for by the Contractor. Retesting shall be performed by the testing laboratory working for the Owner.

1.3 LABORATORY DUTIES

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

1.4 CONTRACTOR RESPONSIBILITIES

- A. Cooperate with laboratory personnel; provide access to Work and/or manufacturer's requirements.
- B. Provide to the laboratory, representative samples, in required quantities, of materials to be tested.
- C. Furnish copies of mill test reports.
- D. Furnish required labor and facilities to:
 - 1. Provide access to Work to be tested;
 - 2. Obtain and handle samples at the site;
 - 3. Facilitate inspections and tests;
 - 4. Provide a clear, level and unobstructed location for placement of concrete curing box(s) adjacent to the work area as agreed upon with the testing laboratory and the Engineer. Provide power and lighting at the curing box location.

- E. Furnish climatically controlled curing box(es) for field storage of cast concrete cylinders or other samples. Furnish multiple boxes when concrete placement activities are being performed at multiple locations across the project site. Use of field constructed curing boxes will not be acceptable. Meet the following requirements for the curing box construction:
 - 1. Comply with ASTM C31, C192 and C511 standards.
 - 2. Manufactured and marketed for the specific purpose described herein.
 - 3. Include a digital thermometer, heat/cool indicator lights; temperature set buttons and a capacity of 22 standard 6" x 12" cylinders.
 - 4. Use curing box to maintain temperature and humidity of the concrete cylinder specimens for 48 hours.
- F. Notify the laboratory sufficiently in advance of operation to allow for the assignment of personnel and schedules of tests.
- G. Laboratory Tests: Where such inspection and testing are to be conducted by an independent laboratory agency, the sample(s) shall be selected by such laboratory or agency, or the Engineer, and shipped to the laboratory by the Contractor at Contractor's expense.
- H. Provide copies of all correspondence between the Contractor and testing agencies to the Engineer.

1.5 QUALITY ASSURANCE

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

1.6 PRODUCT HANDLING

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

1.7 FURNISHING MATERIALS

- A. Furnish all materials necessary for testing.

1.8 CODE COMPLIANCE

- A. Inspections and tests required by codes or ordinances or by a plan approval authority, and made by a legally constituted authority, shall be the responsibility of, and shall be paid for by the Contractor, unless otherwise provided in the Contract Documents.

1.9 CONTRACTOR'S CONVENIENCE TESTING

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

1.10 SCHEDULES FOR TESTING

A. Establishing Schedule

- 1. The Contractor shall, by advance discussion with the testing laboratory selected by the Owner, determine the time required for the laboratory to perform its tests and to issue

each of its findings, and make all arrangements for the testing laboratory to be on site to provide the required testing.

2. Provide all required time within the construction schedule.

- B. When changes of construction schedule are necessary during construction, coordinate all such changes of schedule with the testing laboratory as required.
- C. When the testing laboratory is ready to test according to the determined schedule, but is prevented from testing or taking specimens due to incompleteness of the Work, all extra costs for testing attributable to the delay will be back-charged to the Contractor and shall not be borne by the Owner.

1.11 TAKING SPECIMENS

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

1.12 TRANSPORTING SAMPLES

- A. Transport all samples, except those taken by testing laboratory personnel, to the testing laboratory.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	General
1.3	Temporary Utilities
1.4	First Aid Facilities
1.5	Sanitary Facilities
1.6	Potable Water
1.7	Enclosures and Construction Facilities
1.8	Parking Facilities
1.9	Temporary Heating
3.1	Storage Yards and Buildings
3.2	Parking Areas

B. Scope

1. Temporary facilities required for this work include, but are not necessarily limited to:
 - a. Temporary utilities such as water and electricity.
 - b. First aid facilities.
 - c. Sanitary facilities.
 - d. Potable water.
 - e. Temporary enclosures and construction facilities.
 - f. Temporary heat.

1.2 GENERAL

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

1.3 TEMPORARY UTILITIES

A. General

1. Provide and pay all costs for all water, electricity and other utilities required for the performance of the Work.
2. Pay all costs for temporary utilities until Project completion.

3. Include costs for temporary utilities, all power, water and the like necessary for the performance of equipment testing as required by the Contract Documents.
- B. Temporary Water: Provide all necessary temporary piping, and upon completion of the Work, remove all such temporary piping. Provide and remove water meters.
- C. Temporary Electricity:
 1. Provide all necessary wiring for the Contractor's use.
 2. Furnish, locate and install area distribution boxes such that the individual trades may use their own construction type extension cords to obtain adequate power, and artificial lighting at all points where required by inspectors and for safety.
 3. Provide all temporary electrical services, wire, generators, etc. required for performance of the Work inclusive of maintaining existing facilities in service during required primary electrical service shutdowns.
 4. Pay all fuel bills for temporary power required for the performance of the Work where required during shutdowns, bypass pumping etc.
 5. Use of Owner's existing standby generator facilities will not be allowed.
- D. Lighting: Provide temporary lighting to meet all applicable safety requirements to allow erection, application or installation of materials and equipment, and observation or inspection of the Work.
- E. Water:
 1. Owner will provide a place of temporary connection for construction water at site. Provide temporary facilities and piping required to bring water to point of use, and remove when no longer needed.
 2. Provide a means to prevent water used for construction and testing from flowing back into source pipeline. Device(s) shall be as approved by Owner for backflow prevention.

1.4 FIRST AID FACILITIES

- A. Provide a suitable first aid station, equipped with all facilities and medical supplies necessary to administer emergency first aid treatment. Maintain standing arrangements for the removal and hospital treatment of any injured person. Make all first aid facilities and emergency ambulance service available to the Owner and the Engineer's personnel.

1.5 SANITARY FACILITIES

- A. Prior to starting the Work, furnish for use of Contractor's personnel on the job, subcontractors, and all other on-site personnel, all necessary toilet facilities which shall be secluded from public observation. These facilities shall be either chemical toilets or shall be connected to the Owner's sanitary sewer system. Keep all facilities, regardless of type, in a clean and sanitary condition and comply with the requirements and regulations of the area in which the Work is performed. Adequacy of these facilities will be subject to the Engineer's review and maintenance of same must be satisfactory to the Engineer at all times.
- B. Use of Owner's existing sanitary facilities by construction personnel will not be allowed.

1.6 POTABLE WATER

- A. Furnish a supply of potable drinking water for employees, subcontractors, inspectors, engineers and the Owner who are associated with the Work.

1.7 ENCLOSURES AND CONSTRUCTION FACILITIES

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

1.8 PARKING FACILITIES

- A. Provide parking facilities for the Contractor's and Contractor's subcontractors' personnel. The storage and work facilities provided by the Owner will not be used for parking by the Contractor's or subcontractor's personnel.

1.9 TEMPORARY HEATING

A. General:

1. All heating required during the progress of the Work, prior to the installation of the permanent heating system, shall be classified "temporary heat".
2. Prior to the installation of permanent heating equipment, furnish approved heaters and fuel as required.
3. Keep equipment and surroundings in clean, safe condition.
4. Pay all fuel bills for temporary heat.

B. Temperatures:

1. Maintain a minimum temperature of 50 degrees F and a maximum temperature of 75 degrees F in the building during the working hours and above freezing at all other times, except as otherwise specified.
2. See requirements of various other sections of these Specifications for minimum temperature to be maintained for the application of work under the various trades.

- C. Millwork: Supply adequate heating and ventilation to dry out buildings before installation of finished millwork and trim is started.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 STORAGE YARD AND BUILDINGS

- A. Temporary Storage Yards: Construct temporary storage yards for storage of products that are not subject to damage by weather conditions.
- B. Temporary Storage Buildings:
 1. Provide environmental control systems that meet recommendations of manufacturers of equipment and materials stored.
 2. Arrange or partition to provide security of contents and ready access for inspection and inventory.
 3. Store combustible materials (paints, solvents, fuels, etc.) in a well-ventilated and remote building meeting safety standards.

3.2 PARKING AREAS

- A. Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, Owner's operations, or construction operations.

- B. Provide parking facilities for personnel working on the Project. No employee or equipment parking will be permitted on Owner's existing paved areas.

END OF SECTION

SECTION 01 56 16

DUST CONTROL

PART 1 GENERAL

1.1 SCOPE

- A. Limit blowing dust caused by construction operations by applying water or employing other appropriate means or methods to maintain dust control, subject to the approval of the Owner.

1.2 PROTECTION OF ADJACENT PROPERTY

- A. Visit the site and note the buildings, equipment, landscaping, roads, parking areas and other facilities near the Work site that may be damaged by construction operations. Make adequate provision to fully protect the surrounding area. Contractor will be held fully responsible for all damages resulting from Contractor's operations.
- B. Protect all existing facilities (indoors or out) from damage by dust, fumes, spray or spills (indoors or out). Protect motors, bearings, electrical gear, instrumentation and building or other surfaces from dirt, dust, welding fumes, paint spray, spills or droppings causing wear, corrosion, malfunction, failure or defacement by enclosure, sprinkling or other dust palliatives, masking and covering, exhausting or containment.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 57 00

ENVIRONMENTAL AND PROPERTY PROTECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Use of Chemicals
1.3	Responsibility for Spills and Accidental Discharges
1.4	Protection of Work and Property
1.5	Air Pollution Control
1.6	Noise Control
1.7	Water Pollution Control

B. General

1. Conduct operation in a manner to prevent damage to and pollution of the environment and existing property surrounding the area of work by every means possible. Furnish all necessary items for fulfilling the work described herein.

1.2 USE OF CHEMICALS

- A. All chemicals used during construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either EPA or FDA. Use of all such chemicals and disposal of residues shall be in conformance with instructions.

1.3 RESPONSIBILITY FOR SPILLS AND ACCIDENTAL DISCHARGES

- A. In the event that the Contractor causes or has a spill or accidental discharge for which the Owner is fined by the State of Georgia EPD, the Contractor agrees to remediate the spill or discharge immediately in accordance with current EPD regulations and to pay any fines assessed against the Owner and/or Contractor.

1.4 PROTECTION OF WORK AND PROPERTY

A. General:

1. Where completion of the Work requires temporary or permanent removal and/or relocation of existing utility, coordinate all activities with owner of said utility and perform all work to their satisfaction at no additional cost to Owner.
2. Do not impair operation of existing water treatment system. Prevent construction material and other debris from entering pipelines and process associated with the existing treatment facility.
3. Maintain original site drainage wherever possible.

- B. Finished Construction: Protect finished floors and concrete floors exposed as well as those covered with composition tile or other applied surfacing.

1.5 AIR POLLUTION CONTROL

- A. Minimize air pollution from construction operations.

- B. Conduct operations of dumping rock and of carrying rock away in trucks to cause a minimum of dust. Strictly adhere to applicable environmental regulations for dust prevention.
- C. Provide and maintain temporary dust-tight partitions, bulkheads, or other protective devices during construction to permit normal operation of existing facilities. Construct partitions of plywood, insulating board, plastic sheets, or similar material. Construct partitions in such a manner that dust and dirt from demolition and cutting will not enter other parts of existing building or facilities. Remove temporary partitions as soon as need no longer exists.

1.6 NOISE CONTROL

- A. Provide acoustical barriers so noise emanating from tools or equipment will not exceed legal noise levels.
- B. Noise Control Ordinance: Clayton County Code of Ordinances, Section 62-3.3.

1.7 WATER POLLUTION CONTROL

- A. Do not dispose of volatile wastes such as mineral spirits, oil, chemicals, or paint thinner in storm or sanitary drains. Disposal of wastes into streams or waterways is prohibited. Provide acceptable containers for collection and disposal of waste materials, debris, and rubbish.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 60 00

GENERAL EQUIPMENT STIPULATIONS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Coordination
1.3	Unit Responsibility
1.4	Adaptation and Location of Equipment
1.5	Patent Royalties
1.6	Equipment Warranty
1.7	Workmanship and Materials
1.8	Equipment Specifications
1.9	Electrical Requirements
1.10	Operating Fluids and Gases
1.11	Lubrication and Lubrication Fittings
1.12	Safety Guards
1.13	Equipment Bases
1.14	Control and Instrumentation Components
1.15	Alignment of Motors and Equipment
1.16	Grouting
1.17	Welding and Brazing
1.18	Erection and Setting
1.19	Special Tools and Accessories
1.20	Shop Testing
1.21	Shop Priming and Painting
1.22	Field Priming
1.23	Field Painting
1.24	Galvanizing
1.25	Vibration Testing
1.26	Hydraulic Systems
1.27	Noise Criteria
1.28	Identification of Piping and Equipment
1.29	Safety Signs
1.30	Failure of Equipment to Perform

B. Scope

1. These general equipment stipulations apply, in general, to all equipment and piping. They supplement the detailed equipment Specifications, but in case of conflict, the detailed equipment Specifications shall govern.
2. Furnish, install, test, and place in acceptable operation all mechanical equipment and all necessary accessories as specified herein, as shown on the Drawings, and as required for a complete and operable system.
3. Provide mechanical equipment complete with all accessories, special tools, spare parts, mountings, and other appurtenances as specified, and as may be required for a complete and operating installation.
4. It is the intent of these Specifications that the Contractor provide the Owner complete and operational equipment/systems. To this end, it is the responsibility of the Contractor to coordinate all interfaces with related mechanical, structural, electrical, instrumentation and control work and to provide necessary ancillary items such as controls, wiring, etc., to make each piece of equipment operational as intended by the Specifications.
5. The completed installation shall be free from excessive vibration, cavitation, noise, and oil or water leaks.

1.2 COORDINATION

- A. Assume full responsibility for the coordination of the installation of all equipment, materials and products furnished under these Contract Documents. Be completely responsible for verification that all structures, piping and equipment components furnished by the Contractor and/or subcontractors and suppliers are compatible. Start-up each equipment system and make all necessary alterations. All such alterations shall be made at the Contractor's expense.

1.3 UNIT RESPONSIBILITY

- A. Equipment manufacturers assigned unit responsibility for systems comprised of several components shall be responsible for furnishing a complete system in accordance with the requirements of these Specifications. The manufacturer shall be responsible for all coordination between component manufacturers and shall provide all submittals, installation and start-up services and certifications on the system as a unit.

1.4 ADAPTATION AND LOCATION OF EQUIPMENT

- A. No responsibility for alteration of a planned structure to accommodate other types of equipment will be assumed by the Owner. Equipment which requires alteration of the structures will be considered only if the Contractor assumes all responsibility for making and coordinating all necessary alterations. All such alterations shall be made at the Contractor's expense.
- B. Install the work in such manner that the equipment, piping, vents, conduit, panels, ductwork and appurtenances be as neatly installed with adequate space for maintenance and passage of personnel.

1.5 PATENT ROYALTIES

- A. Include the cost of all royalties and fees for patents covering materials, articles, apparatus, devices or equipment in prices bid.

1.6 EQUIPMENT WARRANTIES

- A. Warrant all equipment against faulty or inadequate design, improper assembly or erection, defective materials, breakage or other failure. The warranty period shall be defined in Section 01 78 33 and the specific equipment specifications of these Specifications.

1.7 WORKMANSHIP AND MATERIALS

- A. Design, fabricate, and assemble all equipment in accordance with the most modern engineering and shop practice. Individual parts shall be manufactured to standard sizes and gauges so that repair parts, furnished at any time, can be installed in the field. Like parts of duplicate units shall be interchangeable. Equipment shall be new and shall not have been in service at any time prior to delivery, except as required by tests.
- B. Provide materials suitable for service conditions. Iron castings shall be tough, close grained, gray iron free from blowholes, flaws or excessive shrinkage and shall conform to ASTM A48, Class 30 minimum. Plugging of defective castings shall not be permitted. Castings shall be annealed to remove internal stresses prior to machining and shall have the mark number and heat number cast on them.
- C. Except where otherwise specified, structural and miscellaneous fabricated steel used in items of equipment shall conform to the Standards of the American Institute of Steel Construction. All structural members shall be considered as subject to shock or vibratory loads.
- D. Make all replaceable or expendable elements such as filters, screens, drive belts, fuses and lamps easily accessible and replaceable without need of dismantling equipment or piping. Provide standard type of all such items that are readily available from multiple suppliers.
- E. Provide stainless steel plugs for threaded openings for drains or vents in pump volutes, compressor or fan scrolls, air receivers, and heat exchangers which are plugged during normal operation.
- F. Include detailed installation instructions and a parts list for all equipment delivered to the Project site.
- G. Isolate all dissimilar metals to the satisfaction of the Engineer.

1.8 EQUIPMENT SPECIFICATIONS

- A. The use of singular or plural terminology in the Specifications is not intended to define the number of units required to fulfill Contract requirements. Bidders must consult the Drawings and Specifications to determine how many units of a particular piece of equipment are required. This does not relieve the Contractor of the responsibility to provide all equipment specified when multiple units are specifically required in the Specifications.

1.9 ELECTRICAL REQUIREMENTS

- A. All electrical equipment and appurtenances, including but not limited to motors, panels, conduit and wiring, etc., specified in the equipment specifications shall comply with the applicable requirements of the Division 26 specifications and the latest National Electric Code.
- B. In the individual equipment specifications, specified motor horsepower is intended to be the minimum size motor to be provided. If a larger motor is required to meet the specified operating conditions and performance requirements, furnish the larger sized motor and upgrade the electrical service (conduit, wires, starters, etc.) at no additional cost to the Owner.
- C. Furnish and install motor starters and controls under Division 26 and Division 40 unless otherwise specified in the individual equipment specifications.

1.10 OPERATING FLUIDS AND GASES

- A. Provide in sufficient quantity of all operating fluids and gases recommended by the manufacturer and required for operation of the equipment to fill all equipment and to replace all fluids and gases consumed during testing and start-up.

1.11 LUBRICATION AND LUBRICATION FITTINGS

- A. Equipment shall be adequately lubricated by systems which require attention no more frequently than weekly during continuous operation. Lubrication systems shall not require attention during start-up or shutdown and shall not waste lubricants.
- B. Provide in sufficient quantities lubricants of the type recommended by the equipment manufacturer to fill all lubricant reservoirs and to replace all lubricants consumed during testing, start-up and initial operation. Provide sufficient quantities of lubricants to lubricate all equipment for one year of normal service before final acceptance of the equipment will be made by the Owner.
- C. When special run-in oil or storage lubricants are used, flush out and replace with the required service lubricant.
- D. Tag each piece of equipment with a cloth tag showing proper type lubricant, period between lubrications, date of lubrication and worker's initials. Have space for 10 lubrication notations.
- E. Except for rotating shaft couplings, bring all lubrication fittings to the outside of all equipment so that they are readily accessible from the outside without the necessity of removing covers, plates, housings or guards. Make fittings accessible from safe, permanent platforms or walk areas. Provide bull-neck, check type fittings for use with a portable high pressure grease gun. Provide minimum 3/16-inch stainless steel tubing, securely mounted parallel to equipment lines and protected where exposed to damage for connection from a remote fitting to the point of use.

1.12 SAFETY GUARDS

- A. Provide safety guards on all sides of all belt or chain drives, fan blades, couplings and other moving or rotating parts. Fabricate safety guards from 16 USS gauge or heavier galvanized or aluminum-clad sheet steel or 1/2-inch mesh galvanized expanded metal. Band expanded metal safety guards to eliminate sharp edges. Design each guard for easy installation and removal. Provide all necessary supports and accessories for each guard. Supports and accessories, including bolts, shall be galvanized. Design all safety guards in outdoor locations to prevent the entrance of rain and dripping water. Comply with OSHA General Industry Standards, Part 1910, Subpart O, Machinery and Machine Guarding. Provide tachometer access on shaft ends.

1.13 EQUIPMENT BASES

- A. Where shown on the Drawings, install equipment on a raised, reinforced concrete base, a minimum of 4 inches in height and extending beyond the equipment baseplate approximately 2 inches on all sides.
- B. Consult the Engineer concerning electrical conduit locations prior to pouring the concrete base.
- C. Provide a cast iron or welded steel baseplate for each pump, compressor and any other item of equipment which is to be installed on a concrete base, unless otherwise specified. Support each unit and drive assembly on a single baseplate of neat design. Provide pads for anchoring and adequate grout holes for all baseplates. Provide a raised lip all around and a threaded drain connection for pump baseplates. Anchor baseplates to the concrete

base with suitable anchor bolts and the space beneath filled with epoxy or non-shrink grout as specified in the grouting section.

- D. On direct coupled equipment, dowel motor and driven equipment to a common base with a minimum of two dowels each.

1.14 CONTROL AND INSTRUMENTATION COMPONENTS

- A. Control and instrumentation equipment furnished by the mechanical equipment manufacturer shall conform to the applicable requirements of Divisions 26 and 40.

1.15 ALIGNMENT OF MOTORS AND EQUIPMENT

- A. In every case where a drive motor is connected to a driven piece of equipment by a flexible coupling, the coupling halves shall be disconnected and the alignment between the motor and the equipment checked and corrected. Machinery shall first be properly aligned and leveled by means of steel wedges and shims or jacking screws near anchor bolts. Anchor bolts shall be tightened against the shims on wedges or jacking screws and the equipment shall again be checked for level and alignment before placing grout. Wedges shall not be placed between machined surfaces.
- B. In general, follow the procedures set up in the Standards of the Hydraulic Institute, Instructions for Installation, Operation, and Maintenance of Centrifugal Pumps for checking and correcting the alignment. Equipment shall be properly leveled and brought into angular and parallel alignment.
- C. Install equipment in such a way that no strain is transmitted to the equipment by piping systems or adjacent equipment.
- D. Alignment shall be performed in the manufacturer's shop between drivers and driven equipment. After installation, a laser alignment shall be performed in the field by an independent testing laboratory acceptable to the Engineer and retained by the Contractor. The laser alignment shall be performed in the presence of a qualified manufacturer's field representative. The laser alignment system shall be either a combined laser emitter and laser target detector or separate units for the emitter and detector.
- E. Operate the driven equipment under load for at least 90 minutes prior to performing the field alignment. Alignment tolerance values shall be as recommended by the driven equipment manufacturer or as specified in the equipment specification section. Comply with the equipment manufacturer's recommended alignment procedures. Recheck alignment after equipment has operated under load for a minimum of 24 hours.
- F. Use either shims or factory installed adjusting bolts to level the equipment and correct a soft foot condition.
- G. Provide shims meeting the following Specifications:
 - 1. Commercially die-cut.
 - 2. Made of corrosion and crush resistant stainless steel, which is dimensionally stable when subjected to high compression over long periods of time.
 - 3. Consistent over the whole shim area, without seams or folds from bending.
 - 4. Clean, free from burrs, bumps, nicks, and dents of any kind.
 - 5. Size numbers or trademarks etched into the shim, not printed or stamped.
 - 6. Use the smallest commercial shim that will fit around the hold-down bolt without binding.
 - 7. A maximum of three shims may be used in the overall shim pack.

8. Rest shims on bare metal, not paint or other coatings.
 9. For both driver and driven machines, provide a minimum 0.125 inch shim (± 0.0003 inch) between all machine feet and mounting base, excluding alignment shims.
 10. Select all shims from the proper size pre-cut series (A, B, C, D, etc.) to match the machine mounting bolt size and to maximize coverage of the machine footprint being supported. Use multiple or oversized shims where the area of the machine footprint is 150 percent or greater than the proper size pre-cut series shim footprint.
- H. Submit both a shop and a field alignment report containing the following information:
1. Alignment tolerances used.
 2. Soft foot.
 3. Vertical angularity (pitch) at the coupling point.
 4. Vertical offset at the coupling point.
 5. Correct soft foot at all feet of both driver and driven machines. Actual allowable uncorrected soft foot measured at any machine foot shall be less than a maximum of 0.002 inch of required shim. This includes soft foot caused by angled foot or base conditions.
 6. Horizontal angularity (yaw) at the coupling point.
 7. Horizontal offset at the coupling point.

1.16 GROUTING

- A. Use a special epoxy, non-shrink, or sand-cement grout in the placement of all pump, motor and equipment baseplates or bedplates, column baseplates, other miscellaneous baseplates and other grouting applications as shown on the Drawings.

1.17 WELDING AND BRAZING

- A. All welds are to be sound and free from embedded scale and slag. All butt welds shall be continuous, and where exposed to view, shall be ground smooth. All continuous welds shall be gas and liquid-tight. Welds in piping shall have full penetration and shall be smooth on the inside of the pipe. Intermittent welds shall have an effective length of at least 2 inches and shall be spaced not more than 6 inches apart.
- B. Conform all welding of steel and aluminum, including materials, welding techniques, general safety practices, appearance and quality of welds, and methods of correcting defective work, to the latest requirements of AWS Specifications.
- C. Conform structural steel welding to the requirements of the AWS Structural Welding Code. The general recommendations and requirements of the AWS Structural Welding Code shall also apply to welded aluminum structures.
- D. The welding process and welding operators shall meet qualification tests and welding performance tests in accordance with the latest provisions of ASME Boiler and Pressure Vessel Code, Section IX, Welding and Brazing Qualifications. Welding process and qualification procedures for welding of pipe shall conform to the latest requirements of ANSI B31.1, Section 327, Welding, and Section 328, Brazing and Soldering. All welding qualification tests shall be witnessed by the Engineer, except as provided herein. All costs associated with the qualification or testing of welders and welding operators shall be borne by the Contractor.
- E. Provide reports certifying that the welding procedures, welders and welding operators that the Contractor intends to use meet the requirements specified above. Submit these reports to the Engineer prior to beginning the Work. In the case of welder qualifications for shop

welding and for carbon steel field welding, welders presenting certified qualification papers validated within the preceding 6-month period will not be required to take the qualification tests. In the case of field welding of stainless steel or aluminum, all welders shall be required to take the qualification tests regardless of past experience or availability of certified qualification papers.

- F. Field welding practices shall conform to OSHA construction standards, Part 1926, Subpart J, Welding and Cutting. Shop welding practices shall conform to OSHA General Industry Standards, Part 1910, Subpart Q, Welding, Cutting, and Brazing.
- G. Use welding electrodes for structural steel which conform to the standard recommendations of the AISC. Use welding electrodes for stainless steel which conform to applicable AWS Specifications and shall be as recommended by "Welded Austenitic Chromium-Nickel Stainless Steels, Techniques and Properties", published by the International Nickel Company, New York, New York. Use welding electrodes for aluminum which conform to applicable AWS Specifications.
- H. Each welder and welding operator must identify all welds with welder's assigned symbol.
- I. Remove welders performing unsatisfactory work from the welding process.
- J. The Owner may inspect any weld by radiographic or other means. Repair or replace welds not in accordance with the requirements specified herein at the Contractor's expense. Grounds for rejection of welds include excessive porosity, nonmetallic inclusions, lack of fusion, incomplete penetration and cracking.

1.18 ERECTION AND SETTING

- A. In the erection and setting of all fabricated equipment, exercise care to ensure that each item of equipment is adequately supported so as not to bend or distort under its own weight until adequate foundation support and anchorage are provided. Use lifting lugs, angles or clips provided on equipment, in erecting and setting the equipment. Conform to the requirements of OSHA Construction Standards, Part 1926, Subpart R, Steel Erection, Subpart H, Material Handling, Storage, Use, and Disposal, and Subpart N, Cranes, Derricks, Hoists, and Conveyors for the erection and setting of equipment and structural steel. Erection of structural steel shall conform to the latest requirements of the AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings.
- B. During placement and prior to any grouting or connection of adjacent piping, the equipment shall be leveled and aligned true to level, plumb, alignment and grade with all parts bearing or fitting the structure or equipment accurately and securely. It shall not be permitted to cock out of alignment, nor shall the Contractor redrill, reshape or force fit any fabricated items.
- C. Take all measurements necessary to properly fit Contractor's work in the field, at Contractor's sole responsibility for these measurements and the proper working out of all details. The Contractor shall be responsible for the correct fitting of all work in the field and the accurate placement of all anchor bolts installed by Contractor.
- D. Bring all parts to be erected or assembled into close contact. Before assembly, thoroughly clean all surfaces to be in contact with each other. Drift pins may be used only for bringing members into position, never to enlarge or distort holes. Torching or burning of holes or cutting of fabricated items to correct misalignment or shop errors shall not be permitted. Enlargement of holes necessary to make field connections shall be done only with the Engineer's approval by reaming with twist drills and in a manner acceptable to Engineer.
- E. Furnish all equipment with suitable eyebolt lifting lugs or lifting angles to facilitate handling.

1.19 SPECIAL TOOLS AND ACCESSORIES

- A. Equipment requiring periodic repair and adjustment shall be furnished complete with all special tools, instruments and accessories required for proper maintenance. Special tools and accessories shall include those tools and accessories not normally available in an industrial hardware or mill supply house. Equipment requiring special devices for lifting or handling shall be furnished complete with those devices.

1.20 SHOP TESTING

- A. Test all equipment in the shop of the manufacturer in a manner which conclusively proves that its characteristics comply fully with the requirements of the Contract Documents and that it will operate in the manner specified or implied.
- B. Do not ship any equipment to the project until the Engineer has been furnished a certified copy of test results and has notified the Contractor, in writing, that the results of such tests are acceptable.
- C. Forward seven (7) certified copies of the manufacturer's actual test data and interpreted results thereof to the Engineer for review.
- D. If required by the individual equipment Specifications, make arrangements for the Owner/Engineer to witness performance tests in the manufacturer's shop. Notify the Engineer ten (10) working days before shop testing commences. Expenses are to be paid by Contractor.
- E. Shop test electric motors in accordance with applicable requirements of Section 26 00 01, General Electrical Provisions.

1.21 SHOP PRIMING AND PAINTING

- A. Comply with the requirements of Section 09 91 00 of these Specifications for all equipment shop priming and painting, including surface preparation, workmanship and materials.

1.22 FIELD PRIMING

- A. Coat in the field with one or more coats of primer all iron and carbon steel surfaces not specified to be galvanized or shop primed and all ferrous or nonferrous surfaces specified to be field primed and painted in accordance with the requirements of Section 09 91 00 of these Specifications.

1.23 FIELD PAINTING

- A. Except for interior surfaces of vessels and enclosed equipment not specified to be field painted, field paint, after installation, all ferrous and nonferrous surfaces of equipment which have received one or more coats of shop or field applied primer in accordance with the requirements of Section 09 91 00 of these Specifications.

1.24 GALVANIZING

- A. All galvanizing shall be done by the hot-dip process after fabrication in conformity with requirements of ASTM A123, Grade 100; ASTM A153, ASTM A384 and ASTM A385. Articles to be galvanized shall be pickled before galvanizing. Articles to be painted shall not be quenched.
- B. Where galvanized bolts are specified or required by the Drawings, zinc plated bolts will be acceptable provided zinc plating conforms to ASTM B633, Type II.
- C. Areas of galvanizing damaged at the factory by welding or burning or otherwise damaged shall be thoroughly stripped and cleaned and recoated with zinc to the required thickness by the hot dip process. Areas of galvanizing damaged in the field during transportation,

handling or installation shall be stripped, cleaned, and recoated with zinc to the required thickness in accordance with ASTM A780, Annex A3.

- D. Provide galvanized articles free from uncoated spots, blisters, flux, black spots, dross, projections and other defects not consistent with acceptable galvanizing practice.
- E. Zinc and cadmium plating shall be subject to visual examination to determine uniformity of coating. The Engineer may require that the coating uniformity be tested in accordance with ASTM A239 or ASTM E376.

1.25 VIBRATION TESTING

- A. Test in the field for acceptable vibration levels, each pump or blower having a rated power of 50 HP, or greater, unless specified otherwise in the Specifications. Vibration testing shall be performed by an experienced, factory-trained and authorized vibration analysis expert (not a sales representative) retained by the Contractor for this work. Test each unit separately without duplicate equipment running. Perform all field testing in the presence of the Engineer. Furnish to the Engineer four certified copies of vibration test data for each test performed.
- B. Where specified in the Specifications, equipment which is assembled and tested on the manufacturer's floor shall also be checked triaxially for vibration by the manufacturer. Submit the results of these tests, along with location of vibration check points, to the Engineer. Make all readings on an X-Y recorder with appropriate scales indicated and an explanation thereon of any recordings exceeding specified limits. The field tests shall include substantiation of the manufacturer's test data.
- C. For systems with variable speed drives, conduct tests at various speeds between maximum and minimum. For systems with two-speed drives, conduct tests at both speeds. For systems with constant-speed drives, conduct tests under various loading conditions as determined by the Engineer.
- D. Test rotating equipment for vibration in the field after installation by the following method. Equipment, complete with drive systems, in place at the job site, shall not vibrate more than the values allowed herein, unless otherwise specified in the detailed equipment specifications. All field tests shall be running tests with the equipment operating on the product for which it is intended or a substitute acceptable to the Engineer. The term displacement, as used herein, shall mean total peak-to-peak movement of vibrating equipment, in mils; velocity shall mean the peak velocity or speed of the vibrating equipment, in inches per second; acceleration shall mean the maximum acceleration which occurs during the vibration cycle, measured in Gs. Displacement and velocity shall be measured by a meter equal to IRD Mechanalysis Vibration Meter Model 306, or Bently-Nevada Model TK-8. Acceleration shall be measured by suitable equipment equal to IRD Mechanalysis or Bently-Nevada, subject to approval of the Engineer. Frequency of vibration, in cycles per minute (cpm), shall be determined when vibration exceeds specified levels or as otherwise necessary. Vibration shall be measured on the bearing housing, unless other locations are deemed necessary by the vibration analysis expert and Engineer.
- E. For all equipment tested, check vibration in the radial and axial directions. For pumps, vibration shall not exceed that permitted by the Hydraulic Institute.
- F. Critical speeds of all rotating equipment shall meet the following:
 - 1. For stiff shaft designs, the first critical speed of the rotating equipment shall be at least 25 percent above the maximum design operating speed.
 - 2. For flexible shaft designs, critical speeds shall be at least 2 percent above or below normal design operating speeds.

- G. The Contractor shall be responsible for vibration testing unit and system assembly and results, which shall be within the specified limits. Copies of test results shall be submitted to the Engineer for review. Should the vibration field test results exceed shop test results or the limits specified herein, the Contractor shall correct the deficiencies within 30 days. After corrections have been completed, the vibration testing shall be rerun and the results resubmitted to the Engineer for review.

1.26 HYDRAULIC SYSTEMS

- A. Securely restrain all pipes, tubes and hoses for hydraulic fluid against movement.
- B. Equip all hydraulic fluid reservoirs for hydraulic power packs with a low level shut-off mechanism which shall stop operation of the power pack when the level of fluid in the reservoir reaches a predetermined low level.
- C. Equip all hydraulic systems with an alarm to notify the operator of system malfunction.

1.27 NOISE CRITERIA

- A. Unless otherwise specified, noise levels for all operating equipment shall not exceed 80 dB at 5 feet from the equipment when measured on the A scale of a calibrated sound level meter at slow response.
- B. Meet noise criteria without the use of special external barriers or enclosures.

1.28 IDENTIFICATION OF PIPING AND EQUIPMENT

- A. General: Paint all equipment and piping specified to be painted per the color coded as specified in Section 09 91 00 of these Specifications.
- B. Equipment: Provide an identification nameplate and dataplate for all major items of equipment.
 - 1. Nameplates: The Contractor shall submit a suitable list of all items of major equipment to the Engineer, who will furnish the Contractor with an identification numbering system. The nameplates shall be of Type 304 stainless steel, No. 6 finish, and not less than No. 16 gauge with indented stamped lettering. Nameplates shall be attached to equipment bases in easily visible and accessible locations. Nameplates shall be fastened in a permanent manner, arranged not to damage the equipment, with not less than four stainless steel fasteners.
 - 2. Dataplates: Provide a stainless steel dataplate for each item of mechanical equipment. Provide separate dataplates for motors, engines and driven equipment. Dataplates shall include the following minimum information:
 - a. Name of equipment (from equipment specifications)
 - b. Manufacturer
 - c. Model designation
 - d. Serial number
 - e. Rated horsepower
 - f. Service factor
 - g. Electrical and insulation data
 - h. Speed (rpm)
 - i. Capacity and head (discharge pressure)
 - j. Net weight

- k. Lettering shall be upper case, block style in size and spacing to suit the nameplate. The identification nameplates shall not be painted.
- C. Valves: Identify all valves with a round brass disc, approximately 1-1/2 inches in diameter and not less than No. 14 gauge, coated with a clear lacquer. Fasten discs to valves in a permanent manner; attachment by chain to handwheels or other operators is not acceptable. Stamp discs using indented numerals and/or letters with a valve number corresponding to its identification number in the valve schedule to be included in the operation and maintenance manual.
- D. Provide engraved, laminated plastic type identification nameplates for all pushbutton stations, switches, motor controllers, transmitters and other control equipment. Affix nameplate on or adjacent to the switch, pushbutton station, etc.
- E. All manufacturers' nameplates, identification nameplates and ASME code plates located on areas of equipment to be insulated shall be removed and reattached on uninsulated areas in a manner acceptable to the Engineer.

1.29 SAFETY SIGNS

- A. Furnish and install permanent safety signs on all mechanical and electrical equipment where a hazard may exist. Make signs suitable for exterior use and in accordance with current OSHA requirements. Mount signs in accordance with manufacturer's recommendations and in locations in accordance with governing agency regulations. Use stainless steel fasteners.
- B. Safety signs shall be approximately 10 inches high by 14 inches wide, colored yellow and black on minimum 0.080-inch aluminum stock.
- C. Safety signs shall be furnished and will include, but not be limited to, the following:
 - 1. The following sign shall be affixed to all equipment which may be started automatically from a remote location:

CAUTION

THIS EQUIPMENT MAY START AUTOMATICALLY BY REMOTE CONTROL

- 2. The following sign shall be affixed to all electrical equipment or instrument panels, as applicable:

CAUTION - SHOCK HAZARD

THIS EQUIPMENT IS POWERED BY MULTIPLE SOURCES
CONTACTS MAY BE ENERGIZED AFTER LOCAL POWER IS DISCONNECTED

- 3. The following sign shall be provided at all areas where oxygen or flammable materials are stored or used (colored red, white and black):

DANGER

NO SMOKING, MATCHES, OR OPEN FLAMES

- 4. The following sign shall be affixed to all entrance hatches or access manways on covered tanks and vessels:

CAUTION

OXYGEN DEFICIENT OR TOXIC CONDITIONS MAY EXIST
FOLLOW PRESCRIBED PROCEDURES BEFORE ENTRY

- 5. The following sign shall be provided at all compressor vents and equipment blowoffs:

CAUTION

LOUD BLOWDOWN MAY OCCUR WITHOUT WARNING

1.30 FAILURE OF EQUIPMENT TO PERFORM

- A. Promptly correct any defects in the equipment or failure to meet the guarantees or performance requirements of the Specifications by replacements or otherwise.
- B. If the Contractor fails to make these corrections, or if the improved equipment fails again to meet the guarantees or specified requirements, the Owner, notwithstanding his having made partial payment for work and materials which have entered into the manufacture of said equipment, may reject said equipment and order the Contractor to remove it from the premises at the Contractor's expense.
- C. Upon receipt of said sums of money, the Owner will execute and deliver to the Contractor a bill of sale of all his rights, title, and interest in and to said rejected equipment; provided, however, that said equipment shall not be removed from the premises until the Owner obtains from other sources other equipment to take the place of that rejected.
- D. Said bill of sale shall not abrogate Owner's right to recover damages for delays, losses, or other conditions arising out of the basic contract.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 65 00

TRANSPORTATION AND HANDLING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Preparation for Shipment
1.3	Transportation
1.4	Handling
1.5	Owner Furnished Equipment

B. Scope

1. Provide transportation of all equipment, materials and products furnished under these Contract Documents to the Work site. In addition, provide preparation for shipment, loading, unloading, handling and preparation for installation and all other work and incidental items necessary or convenient to the Contractor for the satisfactory prosecution and completion of the Work.
2. Repair or replace all equipment, materials and products damaged during transportation or handling at no additional cost to the Owner prior to being incorporated into the Work.

1.2 PREPARATION FOR SHIPMENT

- A. When practical, factory assemble products. Matchmark or tag separate parts and assemblies to facilitate field assembly. Cover machined and unpainted parts that may be damaged by the elements with a strippable protective coating.
- B. Package products to facilitate handling and protect from damage during shipping, handling, and storage. Mark or tag outside of each package or crate to indicate its purchase order number, bill of lading number, contents by name, name of Project, and Contractor, Equipment number, and approximate weight. Include complete packing lists and bills of materials with each shipment.
- C. Spare Parts, Special Tools, Test Equipment, Expendables, and Maintenance Materials:
 1. Furnish as required by the Specifications prior to:
 - a. starting functional testing, or
 - b. operation of the equipment by the Owner, or
 - c. 75 percent Project completion, whichever occurs first.
 2. Properly package to avoid damage, in original cartons insofar as possible. Replace parts damaged or otherwise inoperable.
 3. Firmly fix to, and prominently display on, each package.
 - a. Minimum 3-inch by 6-inch manila shipping tag with the following information:
 - 1) Manufacturer's part description and number.
 - 2) Applicable equipment description.
 - 3) Quantity of parts in package.

- 4) Equipment manufacturer.
- 5) Applicable Specification section.
- 6) Name of Contractor.
- 7) Project name.

4. Deliver materials to project site and place at a location as determined by the Owner.

- D. Notify Engineer upon arrival.
- E. Protect equipment from exposure to the elements and keep thoroughly dry and dust-free at all times. Protect painted surfaces against impact, abrasion, discoloration, or other damage. Grease or oil all bearings and similar items.
- F. For major equipment items, request a minimum 7-day advance notice of shipment from manufacturers. Upon receipt of manufacturer's advance notice of shipment, promptly notify Engineer of anticipated date of equipment arrival.
- G. Factory Test Results: Reviewed and accepted by Engineer before product shipment as required in individual Specification sections.

1.3 TRANSPORTATION

- A. Suitably box, crate or otherwise protect all equipment during transportation.
- B. Where equipment will be installed using existing cranes or hoisting equipment, ensure that the weights of the assembled sections do not exceed the capacity of the cranes or hoisting equipment.
- C. Remove small items and appurtenances such as gauges, valves, switches, instruments and probes which could be damaged during shipment from the equipment prior to shipment. Package and ship these items separately. Plug or seal all openings to prevent the entrance of water or dirt.

1.4 HANDLING

- A. Handle products in accordance with the manufacturer's written instructions, and in a manner to prevent damage. Store products, upon delivery, in accordance with manufacturer's instructions, with labels intact and legible, in approved storage yards or sheds. Provide manufacturer's recommended maintenance during storage, installation, and until products are accepted for use by Owner.
- B. Strictly follow lifting and handling drawings and instructions furnished by the manufacturer or supplier. Use eyebolts or lifting lugs furnished on the equipment in handling the equipment. Do not use shafts and operating mechanisms as lifting points. Use spreader bars or lifting beams when the distance between lifting points exceeds that permitted by standard industry practice.
- C. Under no circumstances shall equipment or products such as pipe, structural steel, castings, reinforcement, lumber, piles, poles, etc., be thrown or rolled off of trucks onto the ground.
- D. Use padded slings and chains, as required, to prevent damage to protective coatings and finishes.

1.5 OWNER FURNISHED EQUIPMENT

- A. Owner furnished equipment shall mean any Owner purchased equipment and such being required by these Specifications to be installed by the Contractor.
- B. Off load and store all Owner furnished equipment per this Section of these Specifications.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 66 00

STORAGE AND PROTECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Storage and Protection
1.3	Extended Storage
1.4	Owner Furnished Equipment

B. Scope

1. The work under this Section includes, but is not necessarily limited to, the furnishing of all labor, tools and materials necessary to properly store and protect all materials, equipment, products and the like, as necessary for the proper and complete performance of the Work.
2. Select and secure a storage site or sites necessary for the construction of this Project.

1.2 STORAGE AND PROTECTION

A. Storage

1. Maintain ample way for foot traffic at all times, except as otherwise approved by the Engineer. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration. Keep running account of products in storage to facilitate inspection and to estimate progress payments for products delivered but not installed in the Work.
2. Properly replace all property damaged by reason of storing of material at no additional cost to the Owner.
3. Deliver all packaged materials in original unopened containers and store until ready for use.
4. All materials shall meet the requirements of these Specifications at the time that they are used in the Work.
5. Store products in accordance with manufacturer's instructions.

B. Protection

1. Use all means necessary to protect the materials, equipment and products of every section before, during and after installation and to protect the installed work and materials of all other trades.
2. All materials shall be delivered, stored and handled to prevent the inclusion of foreign materials and damage by water, breakage, vandalism or other causes.
3. Substantially constructed weathertight storage sheds with raised floors shall be provided and maintained as may be required to protect adequately those materials and products stored on the site which may require protection from damage by the elements.

- C. Replacements: In the event of damage, immediately make all repairs and replacements necessary for the approval of the Engineer and at no additional cost to the Owner.

- D. Box, crate or otherwise completely enclose and protect all equipment during shipment, handling, and storage. Protect all equipment from exposure to the elements and keep thoroughly dry at all times. Store compressors, blowers, pumps, motors, valves, control panels, instrumentation, electrical equipment and other equipment having antifriction or sleeve bearings in weathertight warehouses which are maintained at a temperature of at least 60 degrees F. Other equipment may be stored outside under cover. Store all equipment above ground level and adequately support on wood blocking or other approved support material. Strictly adhere to printed storage instructions of the manufacturers.
- E. Protect painted, anodized or otherwise coated surfaces against impact, abrasion, discoloration and other damage. Clean and coat, to the satisfaction of the Engineer, all coated surfaces which are damaged prior to acceptance of equipment with the same or equivalent coating used in the original application.
- F. Protect electrical equipment, motors, controls, and insulation against moisture or water damage. Keep all space heaters provided in the equipment connected and operating at all times until equipment is placed in service. Provide electrical equipment stored without space heaters with desiccants to protect against moisture damage. Provide silica gel desiccant in porous bags at not less than 1 ounce per cubic foot of volume. Replace desiccant periodically.
- G. Store electrical equipment and instrumentation in a location that is free from excessive or injurious amounts of vibration.
- H. Periodically rotate rotating equipment such as pumps, motors, fans and compressors. In the absence of specific exercising instructions by the equipment manufacturers, rotate each item of rotating equipment a minimum of 10 revolutions at intervals not to exceed 20 days. When shafts are too difficult to rotate by hand, use nonmetallic grips to turn the shafts.
- I. Start up and operate vehicles such as trucks, forklifts, tractors, lawn mowers and other engine-powered equipment at intervals not to exceed 15 days. Run equipment until engine temperatures and pressures are in normal operating ranges. Operate all lifting, lowering, tilting, loading and unloading accessories at least once during the exercise period. Move equipment under power from the parked position and run a sufficient distance so as to ensure proper lubrication of drive train and suspension components. Use qualified operators thoroughly familiar with the proper operation of the equipment to exercise the vehicles. Store forklifts, tractors, lawn mowers and other small engine-powered equipment indoors in garages or other suitable structures. Wash trucks stored outdoors using approved materials at intervals not to exceed 15 days. Conduct all exercising and storage of vehicular equipment in a manner acceptable to the Engineer.
- J. Fill interiors of gear and bearing cases housing oil-lubricated gears and bearings with a rust inhibiting oil prior to storage or, if extended storage is anticipated, coated periodically with a rust inhibiting oil mist at intervals of time acceptable to the Engineer. Protect interiors of large pumps and compressors using vapor phase inhibitor paper or porous bags of rust inhibiting, vapor emitting crystals. Coat exposed shafts with rust preventative compound, then wrap with oil-impregnated paper and polyethylene film and seal with waterproof tape prior to shipment.
- K. Protect individually packaged, unpainted steel parts with a wrapping of vapor phase inhibiting or oil-impregnated paper and polyethylene film prior to shipment.
- L. Store parts and equipment not requiring periodic inspection or maintenance unopened in their original packaging until used.
- M. Store parts, instruments, controls and small items of equipment above ground or floor level on suitable shelves or racks in a heated, watertight warehouse.
- N. Cover flanged openings on equipment with suitable solid wooden or metal blanks securely

bolted to the flange using a minimum of four bolts and a suitable rubber gasket. Provide watertight seal on ends of threaded pipe and fittings with metal or plastic caps. Seal other openings with two layers of 6 mil polyethylene securely taped in place with waterproof tape.

- O. Maintain a maintenance log on each item of mechanical and electrical equipment requiring periodic attention in storage. Enter oil and grease changes, exercising, desiccant replacement, nitrogen purge checks, heater checks, insulation checks and other periodic maintenance in the log. Make the maintenance log available to the Engineer on request.
- P. Perform a resistance test on all motor windings and heater elements following storage and prior to installation as a check for insulation deterioration or moisture damage during storage.
- Q. Immediately prior to installation, clean equipment of any protective coatings used during storage and remove any rust, dirt, grit or other foreign material.
- R. After installation and prior to start-up, flush out and regrease all grease-lubricated joints, shaft couplings and bearings. Completely drain, flush and refill all oil reservoirs and sumps with the proper lubricant. Check screens and filters for contamination and replace if necessary. The equipment shall then be tagged, signed and dated, indicating that the equipment has been properly lubricated for start-up.
- S. After storage, check rubber parts such as valve seats, diaphragms, expansion joints, gaskets, hoses and shaft couplings for hardening or cracking. Replace deteriorated parts prior to start-up at Contractor's own expense.
- T. Unless otherwise permitted in writing by the Engineer, store building products and materials such as cement, grout, plaster, gypsumboard, particleboard, resilient flooring, acoustical tile, paneling, finish lumber, insulation, wiring, etc., indoors in a dry location. Building products such as rough lumber, plywood, concrete block and structural tile may be stored outdoors under a properly secured waterproof covering.
- U. Support tarps and other coverings above the stored equipment or materials on wooden strips to provide ventilation under the cover and minimize condensation. Arrange tarps and covers to prevent ponding of water.

1.3 EXTENDED STORAGE

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

1.4 OWNER FURNISHED EQUIPMENT

- A. Provide storage and protection for all Owner furnished equipment and materials, including extended storage as specified above.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 71 13

MOBILIZATION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Price and Payment Procedures
1.3	Submittals
1.4	Delivery
1.5	Tools and Supplies
1.6	Demobilization

B. Scope

1. The Work covered by this section includes furnishing all labor, materials, and equipment to prepare the site for construction, moving equipment to the site, and coordination with the Owner for work at existing wastewater pump stations.

1.2 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment

1. Measurement: The work of this section will not be measured separately for payment.
2. Payment: Mobilization will be paid for at the price indicated in the approved Schedule of Values, and will include accumulating tools, apparatus, equipment, materials, and personnel and performing final removal and demobilization. The mobilization costs will be paid as follows:
 - a. Forty-five (45) percent of the mobilization costs will be paid upon submittal and Owner approval of the following:
 - 1) Schedule of Values
 - 2) Construction Schedule
 - 3) Submittal Log
 - 4) Preconstruction photographs
 - 5) Acquisition of any permits required to be obtained by the Contractor
 - 6) Proof of payment for the payment bond, performance bond, and any other insurance requirements
 - b. Forty-five (45) percent of the mobilization costs will be paid upon the completion of moving equipment and tools to the site, establishment of a field office when required, and having personnel on-site.
 - c. Ten (10) percent of the mobilization costs will be paid upon approval of the Engineer that the Contractor has left the work site in a clean condition after completion of all phases of the Work and post-construction photographs have been submitted and approved.
3. Mobilization payments will be subject to the retainage amounts stipulated in the Contract.

1.3 SUBMITTALS

- A. Refer to Section 01 33 23 – Shop Drawings, Product Data, and Samples, for submittal requirements and procedures.
- B. Submit a plan of the proposed layout of the construction site, including fences, roads, parking, and staging and storage areas, within seven days after the date of the Notice-to-Proceed.

1.4 DELIVERY

- A. Comply with all local governing ordinances and regulations and these specifications for the delivery to the jobsite of construction tools, equipment, temporary buildings, materials, and supplies.

1.5 TOOLS AND SUPPLIES

- A. Provide construction tools, equipment, materials, and supplies of the type and quantities necessary to facilitate the timely execution of the Work.
- B. Provide personnel, products, construction materials, equipment, tools, and supplies at the jobsite at the time they are scheduled to be installed or utilized.

1.6 DEMOBILIZATION

- A. Upon completion of the Work, remove construction tools, apparatus, equipment, mobile units and buildings, unused materials and supplies, and personnel from the jobsite.
- B. Restore all areas utilized or disturbed to their original, natural state, or as called for in the Contract Documents.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 73 29

CUTTING AND PATCHING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Submittals
1.3	Payment for Cost
2.1	Materials
3.1	Inspection
3.2	Preparation
3.3	Performance

B. Scope

1. The work under this Section includes, but is not necessarily limited to, cutting and patching work as indicated on the Drawings, herein specified and as necessary for proper and complete performance of the Work.
2. Requirements for cutting and patching may be described in various sections of these Specifications.
3. Execute cutting, including excavating and filling, or patching of work required to:
 - a. Make several parts fit properly.
 - b. Uncover work to provide for installation of ill-timed work.
 - c. Remove and replace defective work.
 - d. Remove and replace work not conforming to requirements of the Contract Documents.
 - e. Remove samples of the installed work as specified for testing.
 - f. Install specified work in existing construction.
4. In addition, upon written instruction of the Engineer:
 - a. Uncover work to provide for the Engineer's observation of covered work.
 - b. Remove samples of the installed materials for testing.
 - c. Remove work to provide for alteration of existing work.
5. Protection of Work:
 - a. Do not endanger any work by cutting or altering the Work or any part of it.
 - b. Do not cut or alter the work of another contractor without written consent of the Engineer.

1.2 SUBMITTALS

- A. Prior to cutting which affects the structural safety of the Project or the work of another contractor, submit a written notice to the Engineer requesting consent to proceed with cutting. The notice shall include:

1. Identification of Project.
 2. Description of defective Work.
 3. Necessity for cutting.
 4. Effect on other work or on the structural integrity of the Project.
 5. Description of the proposed work including:
 - a. Scope of cutting and patching
 - b. Subcontractor and trades to execute work
 - c. Products proposed to be used
 - d. Extent of refinishing
 6. Alternatives to cutting and patching.
 7. Designation of party responsible for the cost of cutting and patching.
- B. Cost Estimate: Prior to cutting and patching performed on instruction of the Engineer, submit a cost estimate.
- C. Should conditions of the Work or the schedule necessitate alternative materials or methods, submit a written recommendation to the Engineer that includes:
1. Compelling conditions for alternative materials or methods.
 2. Recommended alternative materials or methods.
 3. Submittals as required for substitutions.
- D. Uncovered Work: Submit written notice to the Engineer designating the time the work will be uncovered for the Engineer's observation.

1.3 PAYMENT FOR COST

- A. Contractor's Costs: Costs caused by ill-timed or defective work or work not conforming to the Contract Documents, including costs for additional services of the Engineer, shall be paid by the Contractor.
- B. Owner's Costs: Cost of work done as the result of the Engineer's/Owner's instructions, which is not shown on the Drawings or specified, other than defective or non-conforming work, will be paid for by the Owner.

PART 2 PRODUCTS

2.1 MATERIALS

- A. All products and materials shall conform to the requirements of the Specifications for the type of work being performed, except where no products are specified in these Specifications for the item being replaced; then the products and materials shall be of an equivalent type, quality, thickness and width of the item removed.

PART 3 EXECUTION

3.1 INSPECTION

- A. Inspect existing conditions of the Work including elements subject to movement or damage during cutting and patching, or excavating and backfilling.
- B. After uncovering work, inspect conditions affecting the installation of new products.

3.2 PREPARATION

- A. Provide shoring, bracing and support as required to maintain structural integrity of the Project.
- B. Provide protection for other portions of the Project and provide protection from the elements.

3.3 PERFORMANCE

- A. Execute fitting and adjustments of products to provide finished installation that complies with specified tolerances and finishes.
- B. Execute cutting and demolition by means that will prevent damage to other work and will provide proper surfaces to receive installation of repairs and new work.
- C. Execute excavating and backfilling as specified in Section 31 23 00.
- D. Restore work which has been cut or removed and install new products to provide completed work in accordance with the requirements of the Contract Documents.
- E. Refinish entire surfaces as necessary to provide an even finish. Refinish continuous surfaces to the nearest intersection. Completely refinish assemblies.

END OF SECTION

SECTION 01 74 23

CLEANING AND WASTE MANAGEMENT

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Quality Assurance
1.3	Hazardous Material and Waste
1.4	Disposal of Waste
2.1	Cleaning Materials and Equipment
2.2	Compatibility
3.1	Progress Cleaning
3.2	Final Cleaning
3.3	Cleaning During Owner Occupancy
3.4	Waste Disposal Compliance

B. Scope

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

1.2 QUALITY ASSURANCE

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

1.3 HAZARDOUS MATERIAL AND WASTE

- A. Handle hazardous waste and materials in accordance with applicable local, state, and federal regulations. Dispose of waste in approved landfills as applicable.
- B. Prevent accumulation of wastes which create hazardous conditions.
- C. No burning or burying rubbish and waste materials on the site is allowed.
- D. No disposal of hazardous wastes or materials into sanitary or storm sewers is allowed.

1.4 DISPOSAL OF WASTE

- A. The definitions contained in Georgia Environmental Protection Division Rules 391-3-4-.01 shall be applicable to this Project. The term waste shall include excess and surplus materials, and shall include liquid and solid wastes.
- B. Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

- C. Except as otherwise specified, do not allow waste materials that are to be disposed of to accumulate on-site.
- D. Remove and transport waste in a manner that will prevent spillage on adjacent surfaces and areas.
- E. Burning: Do not burn waste materials on site.
- F. Dispose of waste removed from the Project site in sites permitted by the Georgia Environmental Protection Division for the acceptance of type of waste being disposed. The acceptable types of permitted disposal facilities are as follows:
 - 1. Inert Waste Landfills
 - 2. Municipal Solid Waste Landfills
 - 3. Municipal Solid Waste Landfills permitted to receive only construction and demolition wastes.
- G. Exceptions to Paragraph F are as follows:
 - 1. Dispose of hazardous waste in accordance with Georgia Environmental Protection Division Rules 391-3-11.
 - 2. Handle and dispose of asbestos-containing waste in accordance with Georgia Environmental Protection Division Rules 391-3-14.
 - 3. Excess earth material and excess excavated rock material may be placed on sites for which the Contractor provides to the Owner a signed affidavit from the property owner that the placement of such material is acceptable to the property owner. The Contractor and property owner shall be responsible for all permitting of such disposal.
- H. No waste shall be placed at a transfer station facility.
- I. Maintain records related to all waste removed from the Project site so as to allow the Owner or the Engineer to readily determine the following:
 - 1. Date waste removed from Project site.
 - 2. Name of hauler (company and driver) transporting such waste.
 - 3. General description of waste transported.
 - 4. "Truck tickets" indicating the waste disposal site and amount of waste disposed therein.
- J. For all wastes hauled to any landfill, the handler of such wastes must be licensed under Permit-by-Rule in accordance with Georgia Environmental Protection Division rules 391-3-4-06.

PART 2 PRODUCTS

2.1 CLEANING MATERIALS AND EQUIPMENT

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

2.1 COMPATIBILITY

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

PART 3 EXECUTION

3.1 PROGRESS CLEANING

A. General

1. Do not allow the accumulation of scrap, debris, waste material and other items not required for construction of this Work.
2. At least each week, and more often if necessary, completely remove all scrap, debris and waste material from the job site.
3. Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the environment.

B. Site

1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris and waste material. Remove all such items to the place designated for their storage.
2. Restack materials stored on site weekly.
3. At all times maintain the site in a neat and orderly condition which meets the approval of the Engineer.

C. Structures

1. Weekly, and more often if necessary, inspect the structures and pick up all scrap, debris and waste material. Remove all such items to the place designated for their storage.
2. Weekly, and more often if necessary, sweep all interior spaces clean. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by using a hand-held broom.
3. As required preparatory to installation of successive materials, clean the structures or pertinent portions as recommended by the manufacturer of the successive material.
4. Following the installation of finish floor materials, clean the finish floor daily. "Clean", for the purpose of this paragraph, shall be interpreted as meaning free from all foreign material which, in the opinion of the Engineer, may be injurious to the finish floor material.
5. Schedule cleaning operations so that dust and other contaminants resulting from cleaning operations will not fall on wet, recently painted surfaces.

3.2 FINAL CLEANING

- A. Definitions: Unless otherwise specifically specified, "clean" for the purpose of this Article shall be interpreted as the level of cleanliness generally provided by commercial building maintenance subcontractors using commercial quality building maintenance equipment and materials.
- B. General: Prior to completion of the Work, remove from the job site all tools, surplus materials, equipment, scrap, debris and waste. Conduct final progress cleaning as described in 3.1 above.
- C. Site: Unless otherwise specifically directed by the Engineer, hose down all paved areas on the site and all public sidewalks directly adjacent to the site; rake clean other surfaces of the grounds. Completely remove all resultant debris.
- D. Structures
 1. Remove all traces of soil, waste material, splashed material, and other foreign matter to provide a uniform degree of exterior cleanliness. Visually inspect all exterior surfaces and remove all traces of soil, waste material, and other foreign matter. Remove all traces of splashed materials from adjacent surfaces. If necessary to achieve a uniform

degree of exterior cleanliness, hose down the exterior of the structure. In the event of stubborn stains not removable with water, the Engineer may require light sandblasting or other cleaning at no additional cost to the Owner.

2. Visually inspect all interior surfaces and remove all traces of soil, waste material, smudges and other foreign matter. Remove all paint droppings, spots, stains and dirt from finished surfaces.
 3. Clean all glass inside and outside.
 4. Polish all surfaces requiring the routine application of buffed polish. Provide and apply polish as recommended by the manufacturer of the material being polished.
- E. Post-Construction Cleanup: Remove all evidence of temporary construction facilities, haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other evidence of construction, as directed by the Engineer.
- F. Restoration of Landscape Damage: Restore any landscape feature damaged by the Contractor as nearly as possible to its original condition at the Contractor's expense. Perform restoration to the satisfaction of the Engineer.
- G. Timing: Schedule final cleaning as approved by the Engineer to enable the Owner to accept the Project.

3.3 CLEANING DURING OWNER OCCUPANCY

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

3.4 WASTE DISPOSAL COMPLIANCE

- A. Comply with the Clayton County Solid Waste Collection and Disposal Service Ordinance for all waste hauling and disposal.

END OF SECTION

SECTION 01 77 00

CONTRACT CLOSEOUT

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Submittals
1.3	Record Documents
1.4	Release form Agreements
3.1	Supplement

B. Scope

1. The Work covered by this section included providing all required documentation to the Engineer and Owner for proper verification of completion and closeout of the Project.

1.2 SUBMITTALS

A. Quality Control Submittals: Written procedures for maintaining and markup of Record Documents.

B. Contract Closeout Submittals: Submit prior to processing of application for final payment.

1. Record Documents.
2. Complete set of Approved Shop Drawings, Samples, and Operation and Maintenance Manuals.
3. Two copies of all Special Bonds, Special Warranties, and Service Agreements.
4. Consent of Surety to Final Payment.
5. Releases or Waivers of Liens and Claims.
6. Contractor's requests for Substantial and Final Completion.
7. Certificates of Inspection and Occupancy if required by local jurisdiction.
8. Registry of training sessions conducted and list of attendees for all manufacturer's operation and maintenance training sessions.
9. Registry of final maintenance and lubrication of filter and/or oil lube protected equipment.
10. Registry of all Spare Parts and Special Tools provided to the Owner as required by individual specification sections organized by specification section inclusive of documentation depicting receipt by Owner.
11. Final Application for Payment: Submit in accordance with procedures and requirements stated in General Conditions.
12. A final written tabulation, plus other documentation as may be required, of all taxes, including sales tax, paid by the Contractor to assist the Owner in obtaining sales and/or use tax refunds for eligible machinery and equipment used for the primary purpose of reducing or eliminating air or water pollution as provided for in Chapter 48-8-3 (36) and (37) of the Official Code of Georgia.

1.3 RECORD DOCUMENTS

A. See Section 01 78 39

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 SUPPLEMENT

A. Supplements listed below, following “END OF SECTION,” are a part of this Specification:

1. Required Close-out Document Checklist

END OF SECTION

Required Close-out Document Checklist

The following checked documents are required to be submitted by the Contractor prior to close-out of this project and issuance of final payment. Acceptance of checked documents will constitute completion of the submittal process.

Document	Date Submitted	Date Accepted
<input checked="" type="checkbox"/> Redlined/Record Drawings	_____	_____
<input checked="" type="checkbox"/> Manufacturer's Certificate of Proper Installation	_____	_____
<input checked="" type="checkbox"/> Manufacturer's Service Record	_____	_____
_____ Facility Acceptance Form	_____	_____
<input checked="" type="checkbox"/> Sales Tax Reports as follows:	_____	_____
_____ ST-12	_____	_____
_____ ST-12A	_____	_____
_____ ST-M7	_____	_____
<input checked="" type="checkbox"/> Notice of Final Completion	_____	_____
<input checked="" type="checkbox"/> Final Contractor's Affidavit	_____	_____
_____ CMMS Report	_____	_____
<input checked="" type="checkbox"/> Fixed Asset Report	_____	_____
<input checked="" type="checkbox"/> O&M Manuals (as required by Section 01 78 23)	_____	_____
<input checked="" type="checkbox"/> Training Documents	_____	_____
<input checked="" type="checkbox"/> Warranties	_____	_____
_____ Filing of Notice of Termination (NOT)	_____	_____

OPERATING AND MAINTENANCE DATA

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Submittal Schedule
1.3	Submittal Format
1.4	Contents of Operating and Maintenance Manual

B. Scope

1. Provide four (4) copies of a complete and comprehensive reference manual (Operating and Maintenance Manual) containing operating and maintenance data to enable operators and plant engineers to correctly operate, service and maintain all equipment and accessories covered by the Specifications and Drawings. The data contained in the manual shall explain and illustrate clearly and simply all principles and theory of operation, operating instructions, maintenance procedures, calibration procedures and safety precautions and procedures for the equipment involved.
2. Include the cost of the Operating and Maintenance Manual in the Contract Price. No separate payment will be made for the Operating and Maintenance Manual.
3. Start-up will not be permitted until Operation and Maintenance manuals have been submitted to and approved by the Engineer.

1.2 SUBMITTAL SCHEDULE

- A. Submit, for the Engineer's approval in PDF format, preliminary drafts of proposed formats and outlines of contents of manuals within 60 calendar days after the Notice to Proceed. The Engineer will notify the Contractor, in writing, of any deficiencies in the manual and will return one copy of the manual for completion and/or correction.
- B. Submit preliminary copies of manuals, in PDF format, before the work covered by the Contract Documents is 40 percent complete. The Engineer will notify the Contractor, in writing, of any deficiencies in the manual and will return one copy of the manual for completion and/or correction.
- C. Resubmissions: Clearly identify each correction or change made. Provide a letter listing all comments made by the Engineer and the actions or response by the manufacturer or vendor to each comment with the resubmission. Where the Engineers comment applies to multiple areas of the initial submittal address all areas in the response. Identify where supplemental information has been provided and where it is located within the resubmission in the response letter.
- D. Submit four final copies of the revised and completed manual, complete in detail as specified below before the work covered by the Contract Documents is 70 percent complete. Also submit six copies of the manual in digital format as specified below.
- E. Digital Copies of Manuals: Provide Operations and Maintenance Manuals in digital format concurrently with both the preliminary and final hard copy submissions. Materials available in digital format shall be furnished in accordance with the following:

1. Provide all textual data as an electronic file in searchable Adobe Acrobat Portable Document Format (PDF). The PDF file(s) shall be fully indexed using the Table of Contents, searchable with thumbnails generated. File(s) shall be identified by utilization of a “six dot two dot two” convention (XXXXXX.XX.YY.pdf) where X is the eight digit number corresponding to the specification section, and YY is an identification number. All documents shall be scanned at 300dpi or greater utilizing optical character recognition (OCR) software. All text in the document must be text selectable with the exception of pages which are in their entirety drawings or diagrams. Word searches of the PDF document must function successfully. PDF files that fail to comply with the indexing and searchable features described above will not be acceptable. All drawing data shall be provided in DWG version 2010 format or higher.
2. Materials not available in original digital format (available only in paper format) shall be scanned as noted above into a PDF format and cleaned to remove smudges, fingerprints, artifacts, and other extraneous marks. Include the following features, as applicable:
 - a. Preserve all notes, version stamps, etc.
 - b. Color maps: scanned in not less than the number of colors of the document or 16 colors, whichever is greater.
 - c. Color photographs: saved in not less than 256 colors.
 - d. Black and white or monochrome scans (non-text): minimum 16 gray scale levels.
 - e. File Type: save color maps, color photographs, and black and white and gray scale photograph files as GIF or JPG files, compatible with Adobe Photoshop Version 4.0.
 - f. Scan documents in the existing color format of the document, i.e. color documents shall be scanned in color, and black and white or monochrome in gray scale.
3. After the documents are in correct digital format, furnish them to the Engineer on a USB flash drive. Provide a label including the required information or the O&M Manual cover sheet identified in Article 1.3, paragraph C of this Section. Provide a detailed paper printout of the files on the media with all media transmittals. This printout is to include a file name, file size, date of creation, submittal number, and a brief but accurate description of the file. Do not transmit files electronically. Provide two (2) copies of the USB flash drive for each Operation and Maintenance Manual to the Engineer.

1.3 SUBMITTAL FORMAT

- A. Assemble each hard copy of the manual in one or more loose leaf binders, each with title page, typed table of contents, typed list of tables, typed list of figures, and heavy section dividers with reinforced holes and numbered plastic index tabs. Provide uniform 3-ring, hardback type, with transparent vinyl pocket front cover suitable for inserting identifying cover and with a transparent vinyl pocket on the spine for label binders for all manuals. All data shall be punched for binding. Arrange composition and printing so that punching does not obliterate any data. Include the project title, specification section number and title, and manual title on the cover and binding edge of each manual, all as approved by the Engineer.
- B. Reduce all copies of shop drawings, figures and diagrams to either 8-1/2 x 11-inches or to 11-inches in the vertical dimension and as near as practical to 17-inches in the horizontal dimensions. Fold such sheets to 8-1/2 x 11-inches. Print the manual and other data on first quality paper, 8-1/2 x 11-inch size with standard 3-hole punching. Label Vol. 1 of “X”, Vol. 2 of “X”, etc., where “X” is the total number of volumes in the set where more than one is required. Include the table of contents for the entire set, identified by volume

number in each binder. Text, figures and drawings shall be clearly legible and suitable for dry process reproductions.

- C. Provide a cover sheet that includes the following information with each submittal:
 - 1. The date of submittal and the dates of any previous submittals.
 - 2. The Project title.
 - 3. Submittal numbering in accordance with Section 01 33 23 of these Specifications.
 - 4. The names of:
 - a. Contractor
 - b. Supplier
 - c. Manufacturer
 - 5. Identification of the product, with the Specification section number, permanent equipment tag numbers and applicable Drawing No.
- D. The Engineer will not recommend final acceptance of the Work until the Operating and Maintenance Manual is complete and satisfactory to Engineer.

1.4 CONTENTS OF OPERATING AND MAINTENANCE MANUAL

- A. Include a title page which includes all information specified in Article 1.3, paragraph C. of this Section in each manual. In addition, include manufacturer's address, phone number, facsimile number, and contact; manufacturer's equipment name and model number; supplier's address, phone number, facsimile number, and contact on the title page.
- B. Include a table of contents identifying the location of each item listed below, for each component supplied in each manual. For items not applicable to a component, the table of contents shall list N/A for the page number.
- C. For all equipment, furnish a complete, detailed listing of all equipment, components and accessories showing component name, manufacturer, model number and quantity information as outlined below:
 - 1. Provide a summary page for each piece of equipment detailing the following information:
 - a. Equipment Number
 - b. Equipment Description
 - c. Serial Number
 - d. Model Number
 - e. Manufacturer
 - 1) Address
 - 2) Phone
 - 3) Representative
 - f. Supplier
 - 1) Address
 - 2) Phone
 - 3) Representative
 - g. Local Service Provider
 - 1) Address

- 2) Phone
- 3) Representative
- h. Location of Equipment
- i. Equipment Design Criteria
 - 1) HP
 - 2) Flow Rate, etc.
- j. Performance Data
- k. Normal Operating Characteristics
- l. Limiting Conditions
- 2. Detailed disassembly, overhaul and reassembly, installation, alignment, adjustment and checking instructions.
- 3. Detailed operating instructions for start-up, calibration, routine and normal operation, regulation and control, safety, shutdown and emergency conditions. Detailed list of settings for relays, pressure switches, temperature switches, level switches, thermostats, alarms, relief valves, rupture discs, etc.
- 4. Detailed preventative maintenance procedures and schedules, including detailed lubrication instructions and schedules, identification of required lubricants and operating fluids (description, specification and trade name of at least two manufacturers), and diagrams illustrating lubrication points.
- 5. Detailed guide to equipment and/or process “troubleshooting”.
- 6. Detailed parts lists identified by title, materials of construction, manufacturer's part number, list of recommended spare parts identified as specified above, current cost list for recommended spare parts, predicted life of parts subject to wear, and an exploded or concise cut-away view of each equipment assembly. The manufacturer’s part numbers must match those used for the spare parts, documentation, identification, and turn-over. Should no spare parts be required, state in the Table of Contents that “No spare parts are required”.
- 7. Electrical and instrumentation schematics, including motor control centers, control panels, wiring diagrams, instrument panels and analyzer panels. All panels must have as-built schematics inside them at contract close-out.
- 8. List of all special tools supplied and description of their use. Special tools include any tool not normally available in an industrial hardware or mill supply house. Should no special tools be required, state in the Table of Contents that “No special tools are required”.
- 9. List of names and addresses of nearest service centers for parts, overhaul and service.
- 10. Procedures for storing, handling and disposing of any chemicals or products used with the equipment or system.
- 11. For equipment and systems, also provide the following:
 - a. Control and wiring diagrams provided by the controls manufacturer.
 - b. Sequence of operations by the controls manufacturer.
 - c. Charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- 12. The supplier's operation and maintenance information will address the particular equipment furnished, with specific details on operation and maintenance practices.

General data is not acceptable. Information contained in the manual which is not appropriate to the Project shall be marked out and noted as “N/A”.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

WARRANTIES AND BONDS

PART 1 GENERAL

1.1 PROJECT MAINTENANCE AND WARRANTY

- A. Maintain and keep in good repair the Work covered by these Drawings and Specifications until acceptance by the Owner.
- B. Warrant for a period of 1-year from the date of Owner's written acceptance of the Work and/or Owner's written final acceptance of the Project, as defined in the Contract Documents, that the completed Work is free from all defects due to faulty products or workmanship. Promptly make such corrections as may be necessary by reason of such defects. The Owner will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments or other work that may be made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect throughout the warranty period.
- C. The Contractor shall not be obligated to make replacements which become necessary because of ordinary wear and tear, or as a result of improper operation or maintenance, or as a result of improper work or damage by another Contractor or the Owner, or to perform any work which is normally performed by a maintenance crew during operation.
- D. In the event of multiple failures of major consequences prior to the expiration of the warranty period described above, disassemble, inspect and modify or replace, as necessary, the affected unit to prevent further occurrences. Replace all related components which may have been damaged or rendered non-serviceable as a consequence of the failure. Provide a new warranty period against defective or deficient design, workmanship, and materials equal to the original warranty period commencing on the day that the item is reassembled and placed back into operation. As used herein, multiple failure shall be interpreted to mean two or more successive failures of the same kind in the same item or failures of the same kind in two or more items. Major failures may include, but are not limited to, cracked or broken housings, piping, or vessels, excessive deflections, bent or broken shafts, broken or chipped gear teeth, premature bearing failure, excessive wear or excessive leakage around seals. Failures which are directly and clearly traceable to operator abuse, such as operations in conflict with published operating procedures or improper maintenance, such as substitution of unauthorized replacement parts, use of incorrect lubricants or chemicals, flagrant over-or under-lubrication and using maintenance procedures not conforming with published maintenance instructions, shall be exempted from the scope of the warranty period. Should multiple failures occur in a given item, disassemble, inspect, modify or replace, as necessary, and re-warrant for the original full warranty period all products of the same size and type.
- E. Furnish all labor, materials, tools and equipment required and make such repairs and removals and perform such work or reconstruction as may be made necessary by any structural or functional defect or failure resulting from neglect, faulty workmanship or faulty materials, in any part of the Work performed by the Contractor. Such repair shall also include refilling of trenches, excavations or embankments which show settlement or erosion after backfilling or placement.
- F. Except as noted on the Drawings or as specified, all structures such as embankments and fences shall be returned to their original condition prior to the completion of the Contract. Promptly repair any and all damage to any facility not designated for removal, resulting from the Contractor's operations, at no cost to the Owner.

- G. The Contractor shall be responsible for all road and entrance reconstruction and repairs and maintenance of same for a period of one year from the date of final acceptance. In the event the repairs and maintenance are not made immediately and it becomes necessary for the owner of the road to make such repairs, the Contractor shall reimburse the owner of the road for the cost of such repairs.
- H. In the event the Contractor fails to proceed to remedy the defects upon notification within 10 days of the date of such notice, the Owner reserves the right to cause the required materials to be procured and the work to be done, as described in the Drawings and Specifications, and to hold the Contractor and the sureties on Contractor's bond liable for the cost and expense thereof.
- I. Notice to Contractor for repairs and reconstruction will be made in the form of a registered letter addressed to the Contractor at Contractor's home office.
- J. Neither the foregoing paragraphs nor any provision in the Contract Documents, nor any special guarantee time limit implies any limitation of the Contractor's liability within the law of the place of construction.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

RECORD DOCUMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Maintenance of Documents and Samples
1.3	Quality Assurance
1.4	Recording
1.5	Record Drawings
1.6	Specifications
1.7	Submittal

B. Scope

1. The work under this Section includes, but is not necessarily limited to, the compiling, maintaining, recording and submitting of project Record Documents as herein specified.
2. Record Documents include, but are not limited to:
 - a. Drawings;
 - b. Specifications;
 - c. Change orders and other modifications to the Contract;
 - d. Engineer field orders or written instructions, including Requests for Information (RFI) and Clarification Memorandums;
 - e. Reviewed shop drawings, product data and samples;
 - f. Test records.
3. Maintain on the Project site throughout the Contract Time an up-to-date set of Record Drawings.

1.2 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Storage:

1. Store documents and samples in the Contractor's field office, apart from documents used for construction.
2. Provide files and racks for storage of documents.
3. Provide locked cabinet or secure storage space for storage of samples.

B. File documents and samples in accordance with format of these Specifications.

C. Maintenance:

1. Maintain documents in a clean, dry, legible condition and in good order.
2. Do not use record documents for construction purposes.
3. Maintain at the site for the Owner one copy of all record documents.

D. Make documents and samples available at all times for inspection by Engineer.

- E. Failure to maintain the Record Documents in a satisfactory manner may be cause for withholding of a certificate for payment.

1.3 QUALITY ASSURANCE

- A. Furnish qualified and experienced person, whose duty and responsibility is to maintain Record Documents.
- B. Accuracy of Records:
 - 1. Provide dimensions, distances and coordinates to the nearest 0.1 foot on Record Drawings, unless noted otherwise.
 - 2. Unless noted otherwise, provide elevations to the nearest 0.01 foot for all pertinent items constructed by the Contractor on Record Drawings.
 - 3. Coordinate changes within Record Documents, making legible and accurate entries on each sheet of Drawings and other documents where such entry is required to show change.
 - 4. Purpose of Project Record Documents is to document factual information regarding aspects of Work, both concealed and visible, to enable future modification of Work to proceed without lengthy and expensive site measurement, investigation, and examination.
- C. Make entries within 24 hours after receipt of information that a change in Work has occurred.
- D. Prior to submitting each request for progress payment, request Engineer's and Inspector's review and approval of current status of Record Documents. Failure to properly maintain, update, and submit Record Documents may result in a deferral by Engineer to recommend the whole or any part of the Contractor's Application for Payment, either partial or final.

1.4 RECORDING

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

1.5 RECORD DRAWINGS

- A. Provide a title block on the Record Drawings indicating that the drawings are Record Drawings, the name of the company preparing the Record Drawings, and the date the Record Drawings were prepared.
- B. Legibly mark drawings to record actual construction, including:
 - 1. All Construction:
 - a. Changes of dimension and detail.
 - b. Changes made by Requests for Information (RFI), field order, work change directives, clarification memorandums or by change order.
 - c. Details not on original Drawings.
 - 2. Site Improvements, Including Underground Utilities:
 - a. Horizontal coordinates and vertical elevation of all exposed and underground utilities and appurtenances, both new facilities constructed and those utilities encountered, referenced to permanent surface improvements.

- b. Location of and dimensions of roadways and parking areas, providing dimensions to back of curb when present.
 - c. The locations shall be referenced to at least two easily identifiable, permanent landmarks (e.g., power poles, valve markers, etc.) or benchmarks.
 - d. Include mapping grade quality (sub meter accuracy) coordinates in Georgia State Plane Coordinates West Zone of all manholes, valves, fire hydrants, vaults, etc. on the Record Drawings. Base control on NAD 83 for horizontal and NAVD 88 for vertical.
3. Structures:
- a. Depths of various elements of foundation in relation to finished first floor datum or top of wall.
 - b. Location of internal and buried utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
4. Dimensions on Schematic Layouts: Show on Record Drawings, by dimension, the centerline of each run of items such as described in previous subparagraph above.
- a. Clearly identify the item by accurate note such as “cast iron drain”, “Galv. Water”, and the like.
 - b. Show, by symbol or note, vertical location of item (“under slab”, “in ceiling plenum”, “exposed”, and the like).
 - c. Make identification so descriptive that it may be related reliably to Specifications.
5. Making Entries on Drawings:
- a. Using an erasable colored pencil (not ink or indelible pencil, clearly describe change by graphic line and note as required.
 - 1) Color Coding:
 - a) Green when showing information deleted from Drawings.
 - b) Red when showing information added to Drawings.
 - c) Blue and circled in blue to show notes.
 - b. Date entries.
 - c. Call attention to entry by “cloud” drawn around area or areas affected.

1.6 SPECIFICATIONS

A. Legibly mark each section to record:

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

1.7 SUBMITTAL

A. At contract closeout, deliver Record Documents to the Engineer for the Owner.

B. Accompany submittal with transmittal letter, in duplicate, containing:

- 1. Date
- 2. Project title and number
- 3. Contractor's name and address

4. Title and number of each record document
5. Signature of Contractor or Contractor's authorized representative

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01 78 43

SPARE PARTS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Submittals
1.3	Source of Supply
1.4	Delivery, Storage, and Handling
3.1	General

B. Scope

1. The Work covered by this section includes furnishing all spare parts as identified in the individual equipment specifications.

1.2 SUBMITTALS

- A. Provide a list of all spare parts to be provided as part of the Work, including manufacturer/supplier name and contact information.

1.3 SOURCE OF SUPPLY

- A. Provide spare parts manufactured by the original equipment manufacturer.
- B. Provide maintenance materials identical to those installed.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver required items to the Place of the Work and store in temporary locations determined by Contractor or permanent locations designated by Owner.
- B. Deliver and store items in original factory packaging or other securely packaged form.
- C. Identify, on carton or package, manufacturer's name, name of item, and part number, as applicable. Identify equipment, system, area, room no., etc. for which each item is intended.
- D. Maintain an inventory list of all items delivered. For each item, record description of item, quantity, and location where stored.
- E. Stored items shall remain in Contractor's care, custody, and control until acceptance of the Work. Protect stored items against theft or damage.
- F. Handle items as necessary, until stored in permanent locations designated by Owner.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 GENERAL

- A. Furnish parts and materials in manufacturer's unopened cartons, boxes, crates, or other protective covering suitable for preventing corrosion or deterioration for the maximum

length of storage which may be normally anticipated. Clearly mark and identify packaging as to their contents and storage instructions.

- B. Deliver parts and materials to the Owner upon completion of the Work or when the Owner assumes partial utilization in accordance with the specifications.
- C. Provide a letter of transmittal including the following:
 - 1. Date of letter and transfer of parts and materials.
 - 2. Contract title and sewer number.
 - 3. Contractor's name and address.
 - 4. A complete inventory of the parts and material listing the applicable specification section for each.
 - 5. A place for the Owner to sign and signify receipt of the parts and materials.
- D. Maintain responsibility for loss or damage to parts and materials until they are received and accepted by the Owner.

END OF SECTION

SECTION 01 91 13

EQUIPMENT TESTING AND FACILITY STARTUP

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes

<u>Paragraph</u>	<u>Title</u>
1.2	Definitions
1.3	Unit Responsibility
1.4	Submittals
1.5	Service
1.6	Concurrent Service
1.7	Pre-startup Coordination Meeting
1.8	Physical Checkout
1.9	Functional Test
1.10	Test Certification
1.11	Vibration and Noise Testing
1.12	Alignment of Motors and Equipment
2.1	General
2.2	Documentation
2.3	System and Equipment Performance Tests
3.1	Contractor's Testing and Start-up Representative(s)
3.2	Equipment Testing
3.3	30-Day Operating Test Period – Facility Startup and Performance Evaluation
3.4	Final Acceptance
3.5	Supplement

B. Scope

1. The work under this Section defines the minimum scope of services to be provided by the Contractor during equipment pre-start-up maintenance, equipment inspection, equipment testing, and equipment functional testing.
2. Furnish all labor, materials, tools, equipment, and services for completion, as determined by the Owner and or the Engineer, of all equipment pre-start-up maintenance, all equipment inspection and testing to determine if the equipment is installed in accordance with the manufacturers recommendations, all equipment functional testing to determine if the equipment is capable of meeting the design intent, and the facility operational test period.
3. Although such work may not be explicitly specifically indicated elsewhere, furnish all labor, materials, tools, equipment, and services necessary for the installation of all supplementary or miscellaneous items, appurtenances, piping, valves, electrical, instrumentation, and devices, etc. incidental to or necessary for completion of all

equipment pre- start-up maintenance, all equipment inspection, all equipment testing, all equipment functional testing, and the facility operational test period.

4. The exact sequence of the facility start-up will depend upon a start-up schedule proposed by the Contractor and reviewed by the Engineer. The facility start-up schedule will be based upon the schedule information generated via the Project Schedule and a priority list of the equipment and systems developed by the Engineer, which are critical and required for startup. The start-up schedule will be updated on a monthly basis, or as directed by the Engineer.
5. Make sure that all Work is completed in time to support field and startup testing. Initial testing of the systems may begin only after the Engineer has received full documentation and certification by the manufacturer and Contractor of the complete and correct installation of equipment associated with the Work. Certify to the Engineer that all auxiliary systems and components associated with testing have been correctly installed/constructed and completed.
6. All equipment testing and operation may be witnessed by the Engineer and shall be performed as required to confirm that the Work has been constructed and/or installed properly and will operate satisfactorily under the specified conditions of service. No power is to be turned on to any piece of equipment and no equipment is to be started or tested by the Contractor outside the presence of the manufacturer's technical representative.
7. Verify the integrity of the Work and make any adjustments, calibrations and/or remedial measures required to prepare the Work for acceptance and performance testing.

1.2 DEFINITIONS

- A. Facility: Entire Project, or an agreed-upon acceptable portion, including its entire unit processes.
- B. Field Quality Control: Term, as used in individual specification sections, which refers to specified on-site functional and performance testing of equipment.
- C. Functional Test: Test or tests in presence of Engineer to demonstrate that installed equipment meets manufacturer's installation, calibration, and adjustment requirements and other requirements as specified.
- D. Performance Test: A test performed in presence of Engineer and Owner and after any required functional test, to demonstrate and confirm that individual equipment meets the performance requirements specified in individual specification sections.
- E. Source Quality Control: Term, as used in individual specification sections, which refers to specified testing performed on specified equipment at manufacturer's facility prior to shipment.
- F. Unit Process: As used in this section, a unit process is a portion of the facility that performs a specific process function, such as filtration, pumping, and chemical storage/feed.

1.3 UNIT RESPONSIBILITY

- A. A single manufacturer shall assume unit responsibility for all items so specified in each section. Unit responsibility shall require that all items be products of, or guaranteed by, the manufacturer. The manufacturer shall be responsible for all coordination between components and provide all submittals, installation and start-up assistance and certifications on the equipment as a unit.

1.4 SUBMITTALS

A. Administrative Submittals:

1. Submit field test schedules and plan for equipment, units, and systems at least 14 days prior to start of related testing. Include test plan, procedures, and log format.
2. Submit summary log of all testing and training activities, by specific equipment item, as applicable.
3. Functional and performance test schedules, test plan, procedures, and log format: Submit at least 90 days prior to start of related testing.
4. Facility Startup and Performance Evaluation Plan: Submit at least 90 days prior to commencement of startup.

B. Quality Control Submittals:

1. Completed Manufacturer's Certificate of Proper Installation as required by individual specification sections. Submit prior to beginning Facility Startup procedures.
2. Test Reports: Functional and performance testing, in format acceptable to Engineer.
3. Written documentation, signed by Engineer, of functional and performance test for each piece of equipment tested.
4. Certification of calibration for testing equipment, when so specified.

1.5 SERVICE

A. Furnish the services of a competent factory representative of the equipment to be installed, for the purpose of supervising and/or inspecting the installation, placing the equipment in service and calibrating and adjusting each item of equipment. Qualification of the representative shall be appropriate to the type of equipment furnished and subject to the approval of the Engineer. Where equipment furnished has significant process complexity, furnish the services of engineering personnel knowledgeable in the process involved and the function of the equipment. Furnish these services for minimum number of days recommended by the manufacturer and approved by the Engineer.

B. In addition to the service period, furnish the services of a competent factory representative of the manufacturer of the equipment listed above for one day during the initial operation for instructing the repair of the equipment. The initial operation period is in addition to any time required by the manufacturer's representatives to perform adjustments or accomplish performance testing. Schedule all factory representatives to be present at the same time for the purpose of coordinating the operation of all equipment.

1.6 CONCURRENT SERVICE

A. When approved by the Engineer, periods of service on more than one item of equipment furnished by the same manufacturer may run concurrently. Each of these manufacturers shall furnish supervisory and/or inspection service for all equipment which manufacturer furnishes.

1.7 PRE-STARTUP COORDINATION MEETING

A. A pre-test/startup coordination meeting will be conducted by the Engineer to discuss the overall testing and startup program associated with the equipment being provided under this contract. The Engineer will notify the Contractor of the time and place of the meeting. The purpose of this meeting will be to review the testing and startup requirements, review the Contractor's testing plan and readiness to begin testing, and develop a startup plan.

- B. The Contractor, Engineer, and Owner shall have the required representatives at this meeting.
- C. The Contractor shall arrange for attendance of major equipment manufacturer's technical representatives, as needed.

1.8 PHYSICAL CHECKOUT

- A. During this initial inspection, each piece of equipment is to be evaluated for non-dynamic, non-operational concerns. The focus shall be to confirm the readiness of a unit or system for initial operation of the equipment in a normal duty cycle for a period of 24 hours. To the maximum extent practical, the full capabilities of each piece of equipment, including remote operation, instrumented control schemes, alternate modes of operation, and emergency operation, should be available prior to physical checkout in order to facilitate and expedite the transition from physical checkout to field testing.
- B. After the physical checkout is completed, each manufacturer's technical representative and the Contractor shall certify to the Owner, in writing, and on the Manufacturer's letterhead, that the equipment is fully installed in accordance with manufacturer's instructions and operating requirements, and ready to be tested in an operating mode without violation of or voiding any aspect or detail of the manufacturer's warranty.

1.9 FUNCTIONAL TEST

- A. Perform a functional test on each piece of equipment. The test shall consist of operation of the equipment on a normal duty cycle for a sufficient period of time to determine satisfactory operation (24 hours minimum). To the maximum extent practical, exercise the full capabilities of all equipment including remote operation, instrumented control schemes, alternate modes of operation and emergency operation. Functional test will not be deemed satisfactorily completed until all local and remote functionality and control has been demonstrated. Satisfactory completion of the Functional Test requires installation of all permanent wiring, terminations, control systems and devices.

1.10 TEST CERTIFICATION

- A. After the functional test is completed, each manufacturer shall certify to the Owner, in writing, that the equipment is fully operational and capable of meeting operating requirements.
- B. Certification of start-up and full testing shall be performed by the manufacturer using the services of an authorized representative trained in this type service. Written certification shall be filed with the Engineer on the manufacturer's stationary. Written certification shall indicate that tests were made in accordance with the manufacturer's recommendations, that the test and start-up operation has been satisfactory and that the equipment is fully operational under design requirements.
- C. References in various equipment sections to the terms "factory representative" or "field representative" shall mean an employee of the manufacturer of the equipment who is completely knowledgeable of the construction, installation, operation and maintenance of the equipment. A sales representative does not qualify. Any field or factory representative not an active employee of the manufacturer must provide documentation from the manufacturer stating that the individual, by name, has been formally trained in the installation, operation and maintenance of the equipment and is authorized to make the required certification or perform the required services.

1.11 VIBRATION AND NOISE TESTING

- A. Conduct all vibration and noise testing in accordance with the requirements of Section 01 60 00. Satisfactory completion of the Functional Test requires satisfactory completion and reporting of vibration and noise testing.

1.12 ALIGNMENT OF MOTORS AND EQUIPMENT

- A. Conduct all motor and equipment alignment in accordance with the requirements of Section 01 60 00. Satisfactory completion of the Functional Test requires satisfactory completion and reporting of motor and equipment alignment.

PART 2 PRODUCTS

2.1 GENERAL

- A. Prepare test plans and documentation plans as specified in the following paragraphs. The Engineer will not witness any test work for the purpose of acceptance until all test documentation and calibration plans and the specified system or equipment test plans have been submitted and accepted.

2.2 DOCUMENTATION

A. Documentation Plans

1. Develop a records keeping system to document compliance with the requirements of this Section. Include identification (by make, manufacturer, model, and serial number) of all test equipment, date of original calibration, subsequent calibrations, calibration method, and test laboratory in calibration documentation.
2. Equipment and system documentation shall include date of test, equipment number or system name, nature of test, test objectives, test results, test instruments employed for the test and signature spaces for the Engineer's witness and the Contractor's quality assurance manager. Establish a separate file for each system and item of equipment. Include the following information as a minimum in these files:
 - a. Factory performance tests
 - b. Field calibration tests
 - c. Field pressure tests
 - d. Field performance tests
 - e. Field operational tests
3. Samples showing the format and level of detail required for the documentation forms are included at the end of this section. The Contractor is advised that these are samples only and are not specific to this project nor to any item of equipment or system to be installed under this contract. Develop test documentation forms specific to each item of equipment and system installed under this contract. Produce acceptable documentation forms for all systems and items of equipment for review by the Engineer as a condition precedent to the Contractor's receipt of progress payments in excess of 50 percent of the contract amount. Once the Engineer has reviewed and taken no exception to the forms proposed by the Contractor, produce sufficient forms to provide documentation of all testing work to be conducted as a part of this contract.

B. Test Plans

1. Develop test plans detailing the coordinated, sequential testing of each item of equipment and system installed under this contract. Each test plan shall be specific to the item of equipment or system to be tested. Test plans shall identify by specific equipment or tag number each device or control station to be manipulated or observed during the test procedure and the specific results to be observed or obtained. Test plans

shall also be specific as to support systems required to complete the test work, temporary systems required during the test work, subcontractors' and manufacturers' representatives to be present and expected test duration. As a minimum, the test plans shall include the following features:

- a. Step-by-step proving procedure for all control and electrical circuits by imposing low voltage currents and using appropriate indicators to affirm that the circuit is properly identified and connected to the proper device.
 - b. Calibration of all analysis instruments and control sensors.
 - c. Performance testing of each individual item of mechanical, electrical, and instrumentation equipment. Select performance tests to duplicate the operating conditions described in the project manual.
 - d. System tests designed to duplicate, as closely as possible, operating conditions described in the project manual.
2. Include in the test plans a complete description of the procedures to be employed to achieve the desired test environment.
 3. As a condition precedent to receiving progress payments in excess of 75 percent of the contract amount, or in any event, progress payments due to the Contractor eight weeks in advance of the date the Contractor wishes to begin any testing work (whichever occurs earliest in the project schedule), submit all test plans required for the systematic field performance and operational tests for all equipment and systems installed under this contract. Once the Engineer has reviewed and taken no exception to the Contractor's test plans, reproduce the plans in sufficient number for the Contractor's purposes and an additional ten copies for delivery to the Engineer. Do not begin test work until the Contractor has delivered the specified number of final test plans to the Engineer.

C. Testing Schedule

1. Produce a testing schedule setting for the sequence contemplated for performing the test work. Provide the schedule in bar chart form, plotted against calendar time. Detail the equipment and systems to be tested, and coordinate with the construction schedule specified in Section 01 32 16. Show the contemplated start date, duration of the test and completion of each test in the test schedule. Submit the test schedule no later than 4 weeks in advance of the date testing is to begin. The Engineer will not witness any testing work for the purpose of acceptance until the Contractor has submitted a schedule to which the Engineer takes no exception. Update the test schedule weekly, showing actual dates of test work, indicating systems and equipment testing completed satisfactorily and meeting the requirements of these specifications.

2.3 SYSTEM AND EQUIPMENT PERFORMANCE TESTS

- A. Test each item of mechanical, electrical, and instrumentation equipment installed under this contract to demonstrate compliance with the performance requirements of these specifications.
- B. Test each electrical, instrumentation, mechanical, and piping system installed or modified under this contract in accordance with the requirements of these specifications.

PART 3 EXECUTION

3.1 CONTRACTOR'S TESTING AND STARTUP REPRESENTATIVE(S)

- A. Designate and furnish Contractor's personnel dedicated solely to coordinate and expedite testing and facility startup. At a minimum include I&C/Electrical subcontractor coordinator, Vendor Start-up/Commissioning coordinator.
- B. Have the personnel identified in Section 01 31 19 present during equipment testing and facility startup meetings. Make the personnel available at all times during the testing and the facility startup and performance evaluation period.

3.2 EQUIPMENT TESTING

A. Preparation

1. General:

- a. Complete installation of each unit and related processes before testing, including all related manufacturer's representative services.
- b. Furnish qualified manufacturer's representatives, when required by individual specification sections, to assist in testing.
- c. Furnish related operating and maintenance manuals, and have on hand necessary testing devices, spare parts, and special tools before testing any unit or system.
- d. Obtain from equipment manufacturer's representative the Manufacturer's Certificate of Proper Installation Form, when required by individual specification sections.
- e. Schedule equipment testing and facility startup meetings to discuss test schedule, plan of test, materials, chemicals and liquids required, facilities operations interface, and Owner involvement.
- f. Provide temporary valves, gauges, piping, test equipment and other materials and equipment required to conduct testing.
- g. Provide written documentation, on Contractor's form, of functional and performance test results for each piece of equipment tested. Provide space on form for Engineer's signature that testing is complete.

2. Cleaning and Checking: Prior to beginning functional testing:

- a. Calibrate testing equipment in accordance with manufacturer's instructions.
- b. Inspect and clean equipment, devices, connected piping, and structures to ensure they are free of foreign material.
- c. Lubricate equipment in accordance with manufacturer's instructions.
- d. Turn rotating equipment by hand when possible to confirm that equipment is not bound.
- e. Open and close valves by hand and operate other devices to check for binding, interference, or improper functioning.
- f. Check power supply to electric-powered equipment for correct voltage.
- g. Adjust clearances and torque.
- h. Test piping for leaks.
- i. Balance HVAC systems, measuring airflow (cfm) static pressure, and component pressure losses.

3. Ready-to-test determination will be by Engineer and Owner based at least on the following:

- a. Notification by Contractor of equipment readiness for testing.
- b. Acceptable testing plan.

- c. Acceptable Final Operation and Maintenance Manuals including electronic copies.
- d. Receipt of Manufacturer's Certificate of Proper Installation, if so specified.
- e. Adequate completion of Work adjacent to, or interfacing with, equipment to be tested.
- f. Availability and acceptability of manufacturer's representative, when specified, to assist in testing of respective equipment.
- g. Satisfactory fulfillment of other specified manufacturers' responsibilities.
- h. Equipment and electrical tagging complete.
- i. Delivery of all spare parts and special tools.

B. Functional Testing

- 1. Conduct as specified in individual specification sections.
- 2. Notify Owner, Engineer, and manufacturer's representative in writing at least 21 days prior to scheduled date of testing.
- 3. If, in Engineer's opinion, equipment meets the functional requirements specified, such equipment will be accepted for purposes of advancing to performance testing phase, if so required by the individual Specification Sections.

C. Performance Testing

- 1. Conduct as specified in individual specification sections.
- 2. Notify Engineer and Owner at least 21 days prior to scheduled date of test.
- 3. Performance testing shall not commence until equipment has been approved by Engineer as having satisfied functional test requirements specified.
- 4. Follow approved testing plan and detailed procedures specified.
- 5. Source and type of fluid, gas, or solid for testing shall be as specified.
- 6. Unless otherwise indicated, furnish all labor, materials, and supplies for conducting the test and taking all samples and performance measurements.
- 7. Prepare performance test report summarizing test method and results.
- 8. If, in Engineer's opinion, equipment meets performance requirements specified, such equipment will be accepted as to conforming to Contract requirements.

3.3 30-DAY OPERATING TEST PERIOD – FACILITY STARTUP AND PERFORMANCE EVALUATION

A. General:

- 1. Support Owner's operations personnel throughout Facility Startup and Performance Evaluation Period.
- 2. Equipment shall be accepted by Engineer as having met requirements of specified functional testing prior to facility startup.
- 3. Sequence each unit process to the point that the complete facility is operational for evaluation of unit process and complete facility performance.
- 4. Demonstrate proper operation of required interfaces within and between individual unit processes.
- 5. Include equipment furnished by Owner.
- 6. Provide Subcontractor and equipment manufacturers' staff adequate to prevent delays.

7. Schedule ongoing Work so as not to interfere with or delay the completion of facility startup.
 8. After the facility is operating, complete performance testing of those items of equipment not previously tested.
- B. Facility Startup and Performance Evaluation Plan:
1. Develop a plan in conjunction with Owner's operations personnel detailing step-by-step instructions for startup of each unit process and the complete facility.
 2. Include a method of evaluation and overall performance report for each unit process, and the complete facility.
 3. Provide bound copies of Startup and Performance Evaluation Forms. Use one form for each unit process; use example form attached, or one designed by Contractor.
 4. Startup and Performance Evaluation Form will minimally include the following:
 - a. Description of unit process being started.
 - b. All equipment and devices included in the unit process.
 - c. Unit process startup procedures (i.e., valves to be open/closed, order of equipment startup, etc.).
 - d. Requirements for water, power, chemicals, etc. needed for startup.
 - e. Contractor and Vendor Certifications that each unit process is capable of performing its intended function(s), including fully automatic operation.
 - f. Space for evaluation comments.
- C. Owner Responsibilities:
1. Assist Contractor in developing a Facility Startup and Performance Evaluation Plan detailing step-by-step instructions for startup of each unit process and the complete facility.
 2. Provide water, power, chemicals, and other items as required for testing and facility startup, unless otherwise indicated.
 3. Operate process units and devices, with support of Contractor.
 4. Provide labor and materials as required for sampling and laboratory analyses.
- D. 30-Day Operating Test Period:
1. Make adjustments, repairs, and corrections necessary to complete facility startup.
 2. Startup of entire facility or any portion thereof shall be considered complete when, in opinion of Engineer, facility or designated portion has operated in the manner intended for 30 continuous days without significant interruption. This period is in addition to training, functional, performance test, and biological stabilization period specified elsewhere.
 3. Significant Interruption: May include any of the following events:
 - a. Failure of Contractor to provide and maintain qualified onsite startup personnel as scheduled.
 - b. Failure to meet specified performance for more than 2 consecutive hours.
 - c. Failure of any critical equipment or unit process that is not satisfactorily corrected within 5 hours after failure.
 - d. Failure of any noncritical equipment or unit process that is not satisfactorily corrected within 8 hours after failure.

- e. As may be determined by Engineer.
- 4. A significant interruption will require the startup then in progress to be stopped and restarted after corrections are made.
- E. Facility Performance Evaluation:
 - 1. During the 30-Day Operating Test Period, conduct a performance evaluation for purpose of evaluating full capabilities of facility and performance of control system, until all unit processes are operable and under control of control system.
 - 2. Certify, on the Facility Performance Evaluation Form, that each unit process is capable of performing its intended function(s), including fully automatic and computerized operation.

3.4 FINAL ACCEPTANCE

- A. When the system operating test period is completed for the total project, the Contractor shall request, in writing, a final inspection. When the Engineer and Owner find the work of the Contractor complete and acceptable, in accordance with the provisions of the contract documents, the Engineer will recommend to the Owner that the job be accepted.
- B. In the event that the final inspection reveals deficiencies in meeting the contract requirements, the Contractor shall complete all remaining items of work, and make adjustments found to be necessary. Upon receipt of written notice from the Contractor that the work is complete and ready for re-inspection, the Engineer will make a final inspection.
- C. The Contractor will be notified in writing by the Owner of the acceptance of segments of the work and/or the final acceptance of the work, as defined in the contract documents. The date of acceptance of segments of the work and/or date of final acceptance shall be the termination date for the Contractor's liability for physical properties of the facilities and the beginning of the respective warranty periods.

3.5 SUPPLEMENT

- A. Supplements listed below, following "END OF SECTION," are a part of this Specification:
 - 1. Equipment Start-up and Testing Log
 - 2. Equipment Start-up and Testing Report
 - 3. Manufacturer's Certificate of Compliance
 - 4. Manufacturer's Certificate of Proper Installation
 - 5. Equipment Test Report Form

END OF SECTION

Hicks WPP Blower Upgrade

EQUIPMENT START-UP/TESTING REPORT

DATE: _____

CONTRACT NUMBER AND TITLE: _____

CONSTRUCTION MANAGER: _____

MANUFACTURER: _____

EQUIP ITEM/TAG NO: _____

SYSTEM: _____

FACILITY NAME: _____ FACILITY NO.: _____ STRUCTURE NO.: _____

DCS LOOP: _____ POWER SOURCE: _____

CONSTRUCTION MANAGER STARTUP TYPED NAME: _____

SIGNATURE: _____

MANUFACTURER REPRESENTATIVE: TYPED NAME: _____

SIGNATURE: _____

ENGINEER REPRESENTATIVE: TYPED NAME: _____

SIGNATURE: _____

Unit Process Description: (Include description of all equipment and devices)

Start-up Procedure: (Describe procedure for sequential start-up & evaluation, including valves to be opened/closed, order of equipment start-up, etc.)

Start-up Requirements: (Water, power, chemicals, etc.)

Test Procedures: **Passed**

Test Procedures:	Passed

Hicks WPP Blower Upgrade	EQUIPMENT START-UP/TESTING REPORT
Evaluation Comments:	
Contractor Certification: I certify the Unit Process is capable of performing its intended function(s), including fully automatic operation.	
CONTRACTOR NAME:	
START-UP REPRESENTATIVE: _____ DATE: _____	
Authorized Signature	

Manufacturer's Certificate of Compliance

Project: HICKS WPP BLOWER UPGRADE	Project No.:
Owner: Clayton County Water Authority	
Equipment/System:	Spec. Section:
Equipment Serial No.:	Equipment Tag No.:
Manufacturer:	

Comments:

I hereby certify the above referenced product, material, or service called for by the Contract for the named project will be furnished in accordance with all applicable requirements. I further certify the product, material, or service is of the quality specified and conforms in all respects with the contract requirements, and is in the quantity shown.

Date of Execution: _____

Manufacturer's Authorized Representative: _____
(Print Name)

Manufacturer's Authorized Representative: _____
(Signature)

Manufacturer's Certificate of Proper Installation

To Engineer: ENGINEERING STRATEGIES, INC.	
Project: HICKS WPP BLOWER UPGRADE	Project No.:
Owner: Clayton County Water Authority	
Equipment/System:	Spec. Section:
Equipment Serial No.:	Equipment Tag No.:
Manufacturer:	

I hereby certify the above-referenced equipment/system has been: (check Applicable)

- Installed in accordance with Manufacturer's recommendations.
- Inspected, adjusted, properly aligned and is free from undue stress from piping or anchor bolts.
- Serviced with proper initial lubricants.
- Electrical and mechanical connections are complete and meet quality and safety standards.
- All Applicable human and/or equipment safety devices have been properly installed.
- The equipment is ready to operate under full load conditions.

Comments:
I, the undersigned Manufacturer's Representative, hereby certify that I am (i) a duly authorized representative of the manufacturer, (ii) empowered by the manufacturer to inspect, approve, and operate this equipment, and (iii) authorized to make recommendations required to assure the equipment furnished by the manufacturer is complete and operational. I further certify all information contained herein is true and accurate.
Date:
Manufacturer:
By Manufacturer's Authorized Representative: _____ <div style="text-align: center; margin-left: 350px;">Signature</div>

EQUIPMENT TEST REPORT FORM

NOTE: This example equipment test report is provided for the benefit of the Contractor and is not specific to any piece of equipment to be installed as a part of this project. The example is furnished as a means of illustrating the level of detail required for the preparation of equipment test report forms for this project.

CITY OF SAMPLE

**EXAMPLE WASTEWATER TREATMENT PLANT
STAGE IV EXPANSION PROJECT**

ABC Construction Company, Inc., General Contractor
XYZ Engineering, Inc., Engineer

EQUIPMENT TEST REPORT

Equipment Name: Submersible Pump 2
 Equipment Number: P25202
 Specification Ref: 43 21 39
 Location: Wet Well

	Contractor		Engineer	
	Verified	Date	Verified	Date
PREOPERATIONAL CHECKLIST				
<u>Mechanical</u>				
Lubrication				
Alignment				
Anchor bolts				
Seal water system operational				
Equipment rotates freely				
Safety guards				
Valves operational				
Hopper purge systems operational				
Sedimentation tank/hopper clean				
O&M manual information complete				
Manufacturer's installation certificate complete				
<u>Electrical</u> (circuit ring-out and high-pot tests)				
Circuits:				
Power to MCC 5				
Control to HOA				

	Contractor		Engineer	
	Verified	Date	Verified	Date
Indicators at MCC:				
Red (running)				
Green (power)				
Amber (auto)				
Indicators at local control panel				
Wiring labels complete				
Nameplates:				
MCC				
Control station				
Control panel				
Equipment bumped for rotation				
<u>Piping Systems</u>				
Cleaned and flushed:				
Suction				
Discharge				
Pressure tests				
Temporary piping screens in place				
<u>Instrumentation and Controls</u>				
Flowmeter FE2502F calibration				
Calibration Report No.				
Flow recorder FR2502G calibrated against transmitter				
VFD speed indicator calibrated against independent reference				
Discharge overpressure shutdown switch calibration				
Simulate discharge overpressure Shutdown				
FUNCTIONAL TESTS				
<u>Mechanical</u>				
Motor operation temperature satisfactory				
Pump operating temperature satisfactory				
Unusual noise, etc?				
Pump operation: 75 gpm/50 psig				
Measurement:				
Flow:				
Pressure:		Test gage number:		
Alignment hot				
Dowelled in				
Remarks:				

	Contractor		Construction Manager	
	Verified	Date	Verified	Date
<u>Electrical</u>				
Local switch function:				
Runs in <i>HAND</i>				
No control power in <i>OFF</i>				
Timer control in <i>AUTO</i>				
Overpressure protection switch PS2502C functional in both <i>HAND</i> and <i>AUTO</i>				
Overpressure protection switch PS2502C set at 75 psig				
PLC 2500 set at 24-hour cycle, 25 min <i>ON</i>				
OPERATIONAL TEST				
48-hour continuous test. Pump cycles as specified, indicators functional, controls functional, pump maintains capacity, overpressure protection remains functional, hour meter functional				

RECOMMENDED FOR BENEFICIAL OCCUPANCY

Engineer _____ Date _____

ACCEPTED FOR BENEFICIAL OCCUPANCY

Owner's Representative _____ Date _____