The PDF digital Contract Documents for this project consist of the Drawings and Specifications and are being released by the Engineer solely as a convenience to the Bidders. Actual hard copies of Contract Documents bearing a stamp and signature of a professional engineer shall be used for the purpose of providing a bid proposal for this project.

Users of these PDF digital Contract Documents assume all risks associated with any information contained within this digital set without any liability to the Owner and/or Engineer. It is the user's responsibility to verify the information contained within the PDF digital set of Contract Documents matches the information shown on the stamped hard copy Contract Documents. In all discrepancies or differences between the PDF digital set and the hard copy set, the hard copy set of Contract Documents shall prevail.

THE CITY OF PELHAM, ALABAMA
SPECIFICATIONS - CONTRACTUAL DOCUMENTS
PELHAM WWTP
INSTALLATION of GRIT & GREASE REMOVAL EQUIPMENT

PREPARED BY
MUNICIPAL CONSULTANTS, INC.
200 CENTURY PARK SOUTH, SUITE 212
BIRMINGHAM, ALABAMA

FEBRUARY 2023

CITY OF PELHAM, ALABAMA
SPECIFICATIONS - CONTRACTUAL DOCUMENTS
PELHAM WWTP
INSTALLATION OF GRIT & GREASE REMOVAL EQUIPMENT

TABLE OF CONTENTS

GENERAL

BID DOCUMENTS

CONTRACT DOCUMENTS

SPECIAL PROVISIONS

SPECIAL PROVISIONS (Continued)

GENERAL SPECIFICATIONS

STANDARD SPECIFICATIONS

STANDARD SPECIFICATIONS - SITEWORK

STANDARD SPECIFICATIONS – ELECTRICAL

APPENDICES

GENERAL

ADVERTISEMENT FOR BIDS

Sealed proposals for the construction of **Pelham WWTP Installation of Grit & Grease Removal Equipment** will be received by The City of Pelham, Alabama (Owner) in the Development Services and Public Works (DSPW) City Hall Conference Room in Pelham, Alabama at 3162 Pelham Parkway until **2:00 p.m.,** the prevailing time, on **April 5, 2023** or by mailing to Post Office Box 1479, Pelham, Alabama 35124 at which time and place they will be publicly opened and read. The bid is comprised of the following principal items and approximate quantities:

Demolition of Existing Grit & Grease Removal Equipment

Installation of New Grit & Grease Removal Equipment

Plans and Specifications may be inspected at the City of Pelham Department of Development Services and Public Works, 3162 Pelham Parkway, Pelham, Alabama and Municipal Consultants, Inc. in Birmingham, Alabama, and they may be obtained from the office of Municipal Consultants, Inc., 200 Century Park South, Suite 212, Birmingham, Alabama 35226, upon payment of **$75.00**. Cost of plans and specifications are non-refundable.

All Bidders must be responsible, meeting the criteria and requirements set forth in the specification documents. Prequalification of Bidders is not required.

This project is considered a "Public Works" project and is governed by competitive bid laws as contained in Title 39 of the Alabama Code. Bidders, subcontractors, suppliers, and Bond Agents should be familiar with this code.

The Owner reserves the right to reject any or all proposals and to waive technicalities. No Bidder may withdraw his bid within sixty days from the date set for receiving of the same. There will not be a Pre-Bid Conference for this Project.

This project is governed by the applicable bid laws and practices of the State of Alabama.

MUNICIPAL CONSULTANTS, INC.
Consulting Engineers
200 Century Park South
Suite 212
Birmingham, AL 35226

By: Gary W. Waters
Title Mayor

BID DOCUMENTS

GENERAL INFORMATION FOR BIDDERS

BIDS will be received by The City of Pelham, Alabama (herein called the "OWNER"), in the City Hall Conference Room in Pelham, 3162 Pelham Parkway in Pelham, Alabama until **2:00 p.m.**, the prevailing time, on **April 5, 2023,** and then at said office publicly opened and read aloud.

Each BID must be submitted in a sealed envelope, addressed to the City of Pelham, Alabama at 3162 Pelham Parkway, Pelham, Alabama 35124. Each sealed envelope containing a BID must be plainly marked on the outside as BID for **Pelham WWTP Installation of Grit & Grease Removal Equipment** and the envelope should bear on the outside the name of the BIDDER, his address, his license number if applicable and the name of the Project for which the BID is submitted. If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to the OWNER at Post Office Box 1479, Pelham, Alabama 35124.

All BIDS must be made on the required BID form with the entire bound documents intact. 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. A copy of the BIDDER'S State Contractor's License for the state in which the work will be performed must be attached to the BID DOCUMENTS.

The OWNER may waive any informalities or minor defects or reject any or 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 or after the Notice of Award is transmitted to the BIDDER, provided the Award is made within the 60 days herein described. 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 the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the BID Schedule by examination of the site and a review of the Drawings and Specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.

The OWNER shall provide to BIDDERS prior to BIDDING, all information which is pertinent to, and delineates and describes, the land owned, and rights-of-way acquired or to be acquired.

The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the Contract.

Each BID must be accompanied by a BID BOND payable to the OWNER in the amount described in the General Specifications. As soon as the BID prices have been compared, the

OWNER will return the BONDS of all except the three lowest responsible BIDDERS. When the Agreement is executed, the BONDS of the two remaining unsuccessful BIDDERS will be returned. The BID BOND of the successful BIDDER will be retained until the payment BOND and performance BOND have been executed and approved, after which it will be returned. A cashier's check may be used in lieu of a BID BOND as described in the General Specifications.

A performance BOND and a payment BOND, each in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the Contract and as provided in the General Specifications.

Attorneys-in-fact who sign BID BONDS or payment BONDS and performance BONDS must file with each BOND a certified and effective dated copy of their power of attorney.

The party to whom the Contract is awarded will be required to execute the Agreement and obtain the performance BOND and payment BOND within fifteen (15) calendar days from the date when NOTICE OF AWARD is delivered to the BIDDER. The NOTICE OF AWARD shall be accompanied by the necessary Agreement and BOND forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may at his option consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the property of the OWNER.

The OWNER within fifteen (15) days of receipt of acceptable performance BOND, payment BOND and Agreement signed by the party to whom the Agreement was awarded shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The NOTICE TO PROCEED shall be issued within a reasonable time frame of the execution of the Agreement by the OWNER. 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 a reasonable time frame or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

The OWNER may make such investigations as he deems necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the WORK contemplated therein.

A conditional or qualified BID will not be accepted. The OWNER reserves the right to reject any BID that is submitted by a BIDDER that is determined by the OWNER to not be a responsible BIDDER or whose BID proposal is not responsive. In determining whether a BIDDER or BID is responsible and/or responsive, the OWNER reserves the right to also request and consider the following factors in Section III.2 of the General Specifications and/or the Special Provisions (if applicable).

Award will be made in concurrence with the Special Provisions "Award of Contract", the General Specifications, and any Supplemental General Conditions.

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.

Each BIDDER is responsible for thoroughly inspecting the site and for reading and being thoroughly familiar with all the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way whatsoever relieve any BIDDER from any obligation in respect to his BID.

Further, the BIDDER agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provision of the equal opportunity clause set forth in these Specifications if included herein.

The low BIDDER shall supply the names and addresses of major material SUPPLIERS and SUBCONTRACTORS when requested to do so by the OWNER in addition to those required in the Bid Documents. Either the act of not providing the names required with the submittal of the Bid Documents or the act of not providing such additional names that may be requested after Bids are received, will be grounds for the OWNER to disqualify the BIDDER for not being responsive.

This project is considered a "Public Works" project and is governed by competitive bid laws as contained in Title 39 (1997) of the Alabama Code. Bidders, subcontractors, suppliers, and Bond Agents should be familiar with this code.

A Pre-Bid conference for prospective BIDDERS will not be held. It shall be the responsibility of the bidders to have a thorough understanding of the plans, specifications, and other contract documents and to include all costs in their bids for fully complying with all requirements.

BID BOND

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

_____ as Principal, and _____ as Surety, are hereby held and firmly bound unto **The City of Pelham, Alabama** as OWNER in the penal sum of _____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns. Signed, this _____ day of _____, 20_____. The Condition of the above obligation is such that whereas the Principal has submitted to the Owner a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the **Pelham WWTP Installation of Grit & Grease Removal Equipment**.

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void. Otherwise, the same shall remain in force and effect, it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the amount that is allowed by Alabama Code, Title 39 (1997) for Public Works projects.

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

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

_____ (L.S.)
Principal

_____
Surety

By: _____

IMPORTANT - 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.

CITY OF PELHAM, ALABAMA
SPECIFICATIONS - CONTRACTUAL DOCUMENTS
PELHAM WWTP
INSTALLATION OF GRIT & GREASE REMOVAL EQUIPMENT

INSURANCE REQUIREMENTS CERTIFICATION

The Contractor selected for the Project will be required to provide insurance in full accordance with all the requirements of the Specifications. See the sections pertaining to insurance in the Special Provisions and in the General Specifications. Bidders shall ensure that if awarded the Project, the insurance provided will be in full accordance with all these requirements. This includes the exact endorsements and coverages as listed. No exceptions will be allowed.

The Bidder hereby certifies that he has provided all insurance requirements to his insurance provider for their careful review and pricing, and has verified that if his bid is accepted, all the insurance required by the Specifications, including the exact endorsements and coverages, will be provided. The Contractor also certifies that if the Contractor's current insurance provider will not provide the insurance required by the Specifications, then the Bidder has located another insurance provider for the Project that will issue insurance for the Project in full accordance with all requirements of the Specifications.

Finally, the Contractor certifies that he has included all costs necessary in his Bid to provide all insurance in full accordance with all the Specifications.

Contractor _____

By _____

Date _____

THE CITY OF PELHAM, ALABAMA
SPECIFICATIONS - CONTRACTUAL DOCUMENTS
PELHAM WWTP
INSTALLATION OF GRIT & GREASE REMOVAL EQUIPMENT

LIST OF SUBCONTRACTORS

Contractors submitting a proposal are required to list in the spaces provided the name of each of the subcontractors they will use if awarded the Contract. No substitutions will be allowed without approval of the Owner. The Bidder shall list the names of major subcontractors. If all the information is not provided with the bid, this will be grounds for the Owner to disqualify the Bidder for not being responsive.

ITEM OF WORK	SUBCONTRACTOR NAMES
Electrical	_____
Painting	_____

Note: If the Contractor will not use a subcontractor for an Item of Work, he shall write "None" in the blank for the Subcontractor for that Item of Work.

If the Bidder does not write in the name of a Subcontractor, he shall submit with his bid detailed evidence satisfactory to the Engineer that he has sufficient personnel experienced in that trade on his full-time staff to perform that item of work on this project. Failure to submit such satisfactory evidence with the Bid, or the submission of inaccurate, misleading, or incorrect information, will be grounds for the Owner to disqualify the Bidder for not being responsive.

The Bidder certifies that if his bid is accepted, the above subcontracting firms or businesses will be awarded subcontracts for the above portions of the work.

Contractor _____

By _____

Date _____

THE CITY OF PELHAM, ALABAMA
SPECIFICATIONS - CONTRACTUAL DOCUMENTS
PELHAM WWTP
INSTALLATION OF GRIT & GREASE REMOVAL EQUIPMENT

BASIS OF PAYMENT

BASE BID

For unit price items, the quantities shown in the "Items of Work" reflect estimates. The actual quantities will be adjusted during construction to reflect the conditions encountered, or other changes, or Owner preferences. Inasmuch as the actual quantities may vary considerably from the quantities listed in the schedule or shown on the drawings, the bidders shall insert prices that represent his actual costs. The Contractor shall not be paid an amount higher than he bids.

The cost of all work required for the project shall be included in the "Items of Work" listed for the project.

The Contract Unit or Lump Sum Bid Amounts shall be payment in full for furnishing all resources (materials, labor, equipment, etc.) necessary to install and complete each portion of the project in complete accordance with the requirements of the Plans and Specification-Contractual Documents. The Contract Bid Amounts shall include the cost of completing all work described under each bid item description and all necessary incidental work not included or listed as a separate bid item. Incidental work may include, but not be limited to, all necessary excavation (earth or rock), backfilling (earth or stone), demolition, sheeting, shoring, piling, bracing, bypass pumping, dewatering, well pointing, clearing, grubbing, erosion control, locating all utilities and existing piping, repairing or replacing damaged facilities, restoration, grassing, disposal of excess materials, traffic/pedestrian control in accordance with the regulations of all authorities or agencies having jurisdiction over the work areas, permit compliance, and all other miscellaneous tasks necessary to fully complete the projects, etc. The quantities actually required may be significantly more or less than the quantities shown. **The Contractor will be paid for only the quantities actually and properly installed and approved for payment. The Contractor shall be paid only the price he bids for each item regardless of the conditions encountered, the quantity actually required, or the unit price.**

ITEM 1 – INSTALLATION OF GRIT & GREASE REMOVAL EQUIPMENT

The Contract Lump Sum Price Bid shall be payment in full for the furnishing of all labor, materials, machinery, equipment, and all incidentals necessary and required to demolish the existing Grit & Grease Removal Equipment and install the new Grit & Grease Removal Equipment that has been purchased by Pelham. It shall include demolition of the existing equipment, installing and assembling all new equipment, installation of rail assemblies, painting, electrical and SCADA work, adjusting new equipment, and demonstrating that new equipment performs as intended in all modes and issues appropriate alarms. It shall include all

appurtenances, incidentals, and miscellaneous equipment and work shown or specified for these facilities or as reasonably inferred or required for complete and operable facilities, in full compliance with the Contract.

ITEM 2 – ALLOWANCE FOR MISCELLANEOUS WORK

The Contract Lump Sum Price shall represent an allowance for additional work to be made, at the sole discretion of the Owner, that is not shown or inferred from the Contract Documents (Plans and Specifications). All Owner-directed work shall be in full conformance with the Contract Documents and the Owner's requirements. The Owner reserves the right to add or not add Owner-directed work to the Contract. Payment to the Contractor for all Owner-directed work shall be established on a case-by-case basis. Before any work under this item is performed, the Owner shall issue a written directive detailing the work to be performed and the payment to be made to the Contractor for the work. Any unused portion of this item shall revert to the Owner at the completion of the project.

BID

Proposal of _____ (hereinafter called "BIDDER"), organized and existing under the laws of the State of _____ doing business as _____ .*

To the **City of Pelham, Alabama** (hereinafter called "OWNER").

In compliance with your Advertisement for Bids, BIDDER hereby proposes to perform all WORK for the construction of **Pelham WWTP Installation of Grit & Grease Removal Equipment** in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, at the prices stated below, and in accordance with the "Basis of Payment" herein.

By submission of this BID, each BIDDER certifies, and in the case of a joint BID, each party thereto certifies as to his 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.

No BIDDER may withdraw a BID within 60 days after the actual date of the opening thereof or after the Notice of Award is transmitted to the BIDDER, provided the Award is made within the 60 days herein described. 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 the BIDDER.

Upon receipt of written notice of the acceptance of this bid, BIDDER will execute the formal contract attached within fifteen (15) days and deliver a Surety Bond or Bonds as required by the General Conditions. The bid security attached is to become the property of the OWNER in the event the contract and bond are not executed within the time set forth, as liquidated damages for the delay and additional expenses to the OWNER caused there.

BIDDER hereby agrees to commence WORK under this Contract on or before a date to be specified in the NOTICE TO PROCEED and to fully complete the PROJECT within the calendar days as specified in Section 1 of the Special Provisions. Bidder further agrees to pay as liquidated damages, the sum as specified in Section 1 of the Special Provisions for each consecutive calendar day thereafter.

* Insert "a corporation", "a partnership", or "an individual" as applicable.

BIDDER acknowledges receipt of the following ADDENDUM:

_____

_____

BIDDER agrees to perform all the work described in the Contract Documents for the following unit prices or lump sum:

Note: The Owner has Sales and Use Tax Exemption status under Alabama law. BIDS shall include only those taxes which are applicable based on this tax exemption status. See Special Provisions for "Application For Tax Certificate of Exemption".

ITEMS OF WORK
BID SCHEDULE

BASE BID

ITEM	QUANT	UNIT	DESCRIPTION	UNIT PRICE	TOTAL
1	1	Lump Sum	Installation of Grit & Grease Removal Equipment	$_____	$_____
2	1	Lump Sum	Allowance for Miscellaneous Work	$ **20,000.00**	$ **20,000.00**

TOTAL OF BASE BID $ _____

ACCOUNTING OF SALES AND USE TAX SAVINGS

Pursuant to Alabama Law, (Alabama Act 2018-234), BIDDER accounts for the Sales and Use Tax savings which are NOT included in the Items of Work - Bid Schedule as follows:

Bidder shall write in the estimated Sales and Use Tax savings which are NOT included in:

1. BASE BID: $ _____

Failure to provide an accounting of Sales and Use Tax savings in the blank(s) above shall be grounds for the Owner to render the bid non-responsive. Other than determining responsiveness, the estimated Sales and Use Tax savings shall not affect the bid pricing nor be considered in the determination of the lowest responsible and responsive bidder. Accordingly, the Contractor will not be paid for the Sales and Use Tax savings written in the blank(s) above. Bidder shall reference the Special Provisions for "Application for Tax Certificate of Exemption".

Respectfully submitted:

_____	_____
Signature	Address
_____	_____
Print Name and Title	
_____	_____
Alabama License Number	Date

(SEAL - if BID is by a Corporation)

Attest _____

ALABAMA IMMIGRATION LAW COMPLIANCE

State of _____

County of _____

FORM FOR SECTIONS 9 (a) and (b) BEASON-HAMMON ALABAMA TAXPAYER AND CITIZEN PROTECTION ACT; CODE OF ALABAMA, SECTIONS 31-13-9 (a) and (b)

AFFIDAVIT FOR BUSINESS ENTITY/EMPLOYER /CONTRACTOR
(To be completed as a condition for the award of any contract, grant, or incentive by the State of Alabama, any political subdivision thereof, or any state-funded entity to a business entity)

Before me, a notary public, personally appeared _____ (print name) who, being duly sworn, says as follows:

As a condition for the award of any contract, grant, or incentive by the State of Alabama, any political subdivision thereof, or any state-funded entity to a business entity or employer that employs one or more employees, I hereby attest that in my capacity as _____ _____(state position) for _____ (state business entity/employer/contractor name) that said business entity/employer/contractor shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien.

I further attest that said business entity/employer/contractor is enrolled in the E-Verify program. (ATTACH DOCUMENTATION ESTABLISHING THAT BUSINESS ENTITY/EMPLOYER/CONTRACTOR IS ENROLLED IN THE E-VERIFY PROGRAM) and will utilize the E-Verify program to verify the employment status of employees and potential employers according to Federal Rules and Regulations.

I further attest that all sub-contractors in my employment shall not knowingly employ, have for employment, or continue to employ an unauthorized alien; and are duly enrolled in the E-Verify program and upon request can produce the appropriate forms verifying such action.

_____Signature of Affiant

Sworn to and subscribed before me this _____day of _____, 2____.

I certify that the affiant is known (or made known) to me to be the identical party he or she claims to be.

_____Signature and Seal of Notary Public

E-VERIFY DOCUMENTATION
AND
STATE CONTRACTORS LICENSE

TO BE INSERTED HERE

CONTRACT DOCUMENTS

NOTICE OF AWARD

To: _____

_____

_____

_____

PROJECT Description: **Pelham WWTP**

Installation of Grit & Grease Removal Equipment

The OWNER has considered the BID submitted by you on (Bid Date) for the above described WORK in response to its Advertisement for Bids and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of $_____.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND and certificates of insurance within fifteen (15) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within fifteen (15) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____ day of _____, 20_____.

The City of Pelham, Alabama

_____

By _____

Name Gary W. Waters

Title Mayor

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged

By _____

this the _____day of _____, 20 _____.

By _____

Title _____

NOTICE TO PROCEED

To: _____ Date: _____

_____ Project: _____

_____ **Pelham WWTP**

_____ **Installation of Grit & Grease**

_____ **Removal Equipment**

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 20_____ on or before _____,20____ and you are to complete the WORK within _____ consecutive calendar days thereafter. The date of completion of all WORK is therefore _____, 20_____.

The City of Pelham, Alabama

_____

By _____

Name Gary W. Waters

Title Mayor

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged

By _____

this the _____day of _____, 20 _____.

By _____

Title _____

Bond Number

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____ (Corporation, Partnership, or Individual), hereinafter called Principal, and

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

The City of Pelham, Alabama
(Name of Owner)

P.O. Box 1479 Pelham, Alabama 35124
(Address of Owner)

hereinafter called OWNER, in the penal sum of _____

_____ Dollars,

($ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain Contract with the OWNER, dated the _____ day of _____, 20_____, a copy of which is hereto attached and made a part hereof for the construction of:

Pelham WWTP Installation of Grit & Grease Removal Equipment

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said Contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one-year guaranty period, and if he shall satisfy all claims and demands incurred under such Contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS, WHEREOF, this instrument is executed in _____ counterparts, each one
(Number)

of which shall be deemed an original, this the _____ day of _____, 20_____

ATTEST:

_____
(Principal)

_____ By_____(s)
(Principal) Secretary

(SEAL)

_____ _____
(Witness as to Principal) (Address)

_____ _____
(Address)

_____ _____
Surety

ATTEST:

_____
(Surety) Secretary

(SEAL)

_____ By_____
Witness as to Surety Attorney in Fact

_____ _____
(Address) (Address)

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: 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.

Bond Number

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a (Corporation, Partnership, or Individual), hereinafter called Principal, and

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

The City of Pelham, Alabama
(Name of Owner)

P.O. Box 1479 Pelham, Alabama 35124
(Address of Owner)

hereinafter called OWNER, in the penal sum of

Dollars,

($) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain Contract with the OWNER, dated the _____ day of _____, 20_____, a copy of which is hereto attached and made a part hereof for the construction of:

Pelham WWTP Installation of Grit & Grease Removal Equipment

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said Contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one-year guaranty period, and if he shall satisfy all claims and demands incurred under such Contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS, WHEREOF, this instrument is executed in _____ counterparts, each one
(Number)

of which shall be deemed an original, this the _____ day of _____, 20_____.

ATTEST:

_____
(Principal)

_____ By_____(s)
(Principal) Secretary

(SEAL)

_____ _____
(Witness as to Principal) (Address)

_____ _____
(Address)

_____ _____
Surety

ATTEST:

_____
(Surety) Secretary

(SEAL)

_____ By _____
Witness as to Surety Attorney in Fact

_____ _____
(Address) (Address)

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: 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.

CERTIFICATE OF INSURANCE

AND

INSURANCE ENDORSEMENTS

AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 20_____ by and between **The City of Pelham, Alabama**, hereinafter called "OWNER" and _____ doing business as a "Corporation", " Partnership", "an Individual", or Limited Liability Company (LLC) hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the construction of **Pelham WWTP Installation of Grit & Grease Removal Equipment**

2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the PROJECT described herein.

3. The CONTRACTOR will commence the work required by the CONTRACT DOCUMENTS within three (3) calendar days after the date of the NOTICE TO PROCEED and will complete the same within 60 calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS. The Contractor further agrees to pay, as liquidated damages, the sum of $200 for each consecutive calendar day thereafter as hereinafter provided in the GENERAL CONDITIONS and SPECIAL PROVISIONS.

4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of $_____ or as shown in the BID schedule.

5. The term "CONTRACT DOCUMENTS" means and includes the following:

(A) Advertisement for Bids

(B) Information for Bidders

(C) Bid

(D) Bid Bond

(E) Agreement

(F) General Specifications

(G) Supplemental General and Special Provisions

(H) Payment Bond

(I) Performance Bond

(J) Notice of Award

(K) Notice to Proceed

(L) Change Order

(M) DRAWINGS prepared or issued by Municipal Consultants, Inc.
numbered 1 through 14, and dated February, 2023.

(N) SPECIFICATIONS prepared or issued by Municipal Consultants, Inc.
dated February, 2023.

(O) ADDENDA:

No. _____, dated _____, 20_____
No. _____, dated _____, 20_____
No. _____, dated _____, 20_____
No. _____, dated _____, 20_____

6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.

7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

8. The Contractor enters into this Contract with the Owner as an independent contractor and, as such, agrees that neither the Owner nor its officers, agents, employees, engineers or inspectors shall be responsible for the acts or omissions of the Contractor, or any subcontractor, or any of the Contractor's or subcontractor's agents or employees, or any other persons performing any of the work pursuant to this Contract. The Contractor shall be solely responsible for controlling construction manner, means and techniques consistent with the Contract Documents, Plans and Specifications.

9. This Agreement, together with all documents which constitute the "Contract Documents" constitute the entire agreement of the parties, as a complete and final integration thereof with respect to its subject matter. All understandings and agreements heretofore had between and among the parties are merged into this Agreement, which alone fully and completely expresses their understandings. No representation, warranty, or covenant made by any party which is not contained in this Agreement or expressly referred to herein has been relied on by any party in entering into this Agreement.

IN WITNESS, WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in 3 (Number) counterparts, each of which shall be deemed an original on the date first above written.

OWNER:

The City of Pelham, Alabama

By _____

Name Gary W. Waters

Title Mayor

(SEAL)

ATTEST:

_____

Name _____

Title _____

CONTRACTOR:

_____

By _____

Name _____

Address _____

_____

_____

(SEAL)

ATTEST:

_____

Name _____

Title _____

SPECIAL PROVISIONS

SPECIAL PROVISIONS
FOR
STARTING AND COMPLETION TIME
AND LIQUIDATING DAMAGES

SECTION I

1.0 STARTING AND COMPLETION TIME

Work specified under this contract shall begin on the date specified in the Notice to Proceed. The completion of work shall be counted from the specified start date in the Notice to Proceed and will be as follows:

60 calendar days

Requests for extension of time will be submitted to the Engineer along with the Contractor's periodic estimate. The Engineer shall ascertain the facts and the extent of the delay and shall recommend to the Owner whether it should extend the time for completing the Project. The Contractor shall provide all documentation requested by the Engineer. Extensions of time, if any, will be made by the Owner only if in accordance with the Contract Documents.

For change orders requesting extensions of time due to rain, wind, flood or other natural phenomenon, the Contractor's written request must be accompanied, at the Owner's request, by a detailed report of weather at this site for the last ten (10) years with averages showing means and statistical deviations from mean averages to support request for extension. No extension shall be made for delays due to rain, wind, flood or other natural phenomenon of normal intensity for the locality.

In the event any material changes, alterations, or additions are made as herein specified, which in the opinion of the Engineer will require additional time for execution of any work under the contract, then in that case, the time of the completion of the Project may be extended through change order. No extensions of time shall be given for any minor changes, alterations or additions. The Contractor shall not be entitled to any reparation or compensation on account of such additional time or extensions of time.

2.0 LIQUIDATING DAMAGE CHARGE

Beginning with the first periodic estimate after the contract completion date, liquidating damage charges may be assessed by the Owner against the Contractor for each calendar day past the contract completion date, plus approved time extensions. The liquidating damage charges shall be deducted from the Contractor's periodic payment by the Owner. The Contractor shall be notified of the liquidating damage charge and shall have ten (10) days in which to file an appeal of the charges with the Owner. The Owner shall review the appeal and render a decision of approval or disapproval. The liquidated damages shall be as follows beginning from the stated or extended date of completion and continuing for so long as the Project remains incomplete.

$ 200 per calendar day

Should the Owner not deduct liquidated damages when it is first entitled to, this shall in no way limit the Owner's right to deduct or claim the entire liquidated damages at whatsoever time the Owner may desire. It is understood and agreed that the above deduction is not a penalty, but money due to reimburse the Owner for inconvenience and damage to the general public, due to the delay in the completion of the Project and is reasonable. The collection of liquidated damages by the Owner shall not constitute an election or waiver by the Owner of recovery of additional delay or non-delay related damages from the Contractor, and the Owner expressly reserves the right to recover actual damages for other harms resulting from delay. The provisions of the liquidated damage clause shall apply and continue to apply even if the Contractor terminates or abandons the Project prior to the scheduled completion dates.

The amounts of such liquidated damages and actual damages incurred by reason of failure to complete the work stipulated in the Contract are hereby agreed upon as reasonable estimates of the costs which may be accrued by the Owner. It is expressly understood and agreed that these amounts are not to be considered in the nature of penalties, but as damages which have accrued against the Contractor. The Owner shall have the right to deduct such damages from any amount due, or that may become due the Contractor, or the amount of such damages shall be due and collectible from the Contractor or Surety.

Note that there is also a provision for a Loss of Service Charge. This Loss of Service Charge is described in the "Anticipated Project Schedule" part of the "Specification for Installation of Grit & Grease Removal Equipment". As stated in that specification, the Loss of Service Charge will be assessed if the time that the existing Grit & Grease Removal Process is out of service exceeds the allotted out-of-service period. Also as described in that specification, the Loss of Service Charge can be deducted from payment to the Contractor even if the total project is completed within the contract completion time. However, if the Contractor fails to complete the total project within the contract completion time, no additional Loss of Service Charge (beyond the Loss of Service charges already incurred due to exceeding the allotted out-of-service period) will be imposed for the days for which Owner deducts the Liquidated Damages charge provided the Owner is satisfied that the Contractor is proceeding as expeditiously as possible.

SPECIAL PROVISIONS
FOR
STANDARD OF QUALITY
FOR BASE BID

SECTION II

1.0 MANUFACTURED ARTICLES

Where certain items are called for or described, it is to establish a "standard" of quality. The Contractor's Proposal shall be based on furnishing the items as called for or described.

2.0 SUBSTITUTE EQUIPMENT/MATERIALS

Contractors may submit for approval of substitute equipment/material. Such items shall be written in on the "List of Material Suppliers and Equipment Manufacturers". The Contractor shall state the reduction in cost, if any, between the substitute and the equipment in the base bid. No extra will be paid the Contractor for any changes required to adapt the substitute equipment or material and the Contractor shall pay the Owner for any necessary redesign and/or construction drawings. All redesign and drawing will be prepared by the Engineer. Substantial evidence of the equal or superior quality shall be submitted with the bid. The Contractor shall also promptly furnish after bid opening such additional information as may be requested by the Engineer such as lists of installations of the same equipment of similar size and complexity (including contact persons and phone numbers), testing and performance data (including both independent laboratory certification and full scale) to clearly indicate full compliance with all specifications. The determination whether or not the substitute equals the "standard" shall be made by the Engineers and Owner. The Owner may determine any substitute equipment or material as not desired to suit his best interest.

SPECIAL PROVISIONS
FOR
BASIS OF AWARD

SECTION III

1.0 DETERMINATION OF LOW BIDDER

The contract will be awarded to the lowest responsible and responsive Bidder, unless the Owner determines that all the bids are unreasonable or that it is not in the best interest of the Owner to accept any of the bids. Award of the contract will be made on the basis of the lowest responsible base bid. The Contractor's base bid shall be defined as the sum of all totals listed under **Items of Work Bid Schedule – Base Bid**. In submitting his Base Bid, the Contractor thereby certifies that all his prices are based upon providing the base equipment and materials established in the **List of Material Suppliers and Equipment Manufacturers** (if applicable) and the **Owner Approved Material Suppliers and Equipment Manufacturers**. Substitute material suppliers and equipment manufacturers whether listed or provided by the Contractor shall have no basis in determining the lowest bid.

Once the Owner has determined the lowest responsible responsive bidder as set forth herein, and the Contract is awarded, the Owner will consider separately whether or not to accept any deductive substitutes listed or provided in the List of Material Suppliers and Equipment Manufacturers (if applicable) if the Owner determines it is in its best interest.

Bidder must possess all licenses and permits required by applicable law, rule, or regulation for the performance of the work prior to bidding.

2.0 AWARD OF CONTRACT

In order to be considered for the Award, the Bidder shall immediately present to the Owner, when required/notified by the Owner, satisfactory evidence that:

A. He has the necessary capital and financial resources to undertake and complete the project.
B. He has equipment, in good working order, adequate for performance of the work within the time specified.
C. He has within his organization, at the time, the construction management, and experienced supervisory personnel available for assignment to the project.
D. A list of references for successfully completed projects of similar size, magnitude, and cost.
E. A list of projects completed for the Owner. If it is determined that the bidding Contractor or his employees have performed or completed previous work for the Owner in an unsatisfactory or unprofessional manner, then the Contractor's bid will be rejected.

3.0 REDUCTION OF QUANITITES

In the event the lowest bid (determined by the Owner as described in Section 1.0 above) is more than the funds allocated for the construction of the Project, the Owner reserves the right, and the bidder submitting the bid acknowledges and accepts this right, to reduce quantities at the unit price bid, to bring the Project within the funds allocated. In such as case, the Owner may require that a change order be executed simultaneously with the execution of the Contract. In the event a reduction in quantities is made, the time allowed for completion of the work shall be reduced proportionately. Regardless, the Owner may also reduce quantities as described in the Basis of Payment.

SPECIAL PROVISIONS
FOR
SOURCE OF FUNDING

SECTION IV

The Owner has funding secured for the anticipated cost of this Project as noted below. Note that more than one funding source may be utilized at the Owner's discretion. The Award of the Project is at the sole discretion of the Owner.

Project Funding Source:

_____ Cash reserves on hand

__**X**___ Bond Proceeds on hand

_____ Bond Proceeds from a Bond Issue to be completed after Bids are opened

_____ Grant or Award

_____ Direct Reimbursement from a State, Federal or Local Government Agency

_____ Other source which will not become available until after the execution of the Contract

Payment to Contractors shall be in accordance with the Contract Documents and the Code of Alabama 39-2-12

SPECIAL PROVISIONS
FOR
APPLICATION FOR TAX CERTIFICATE OF EXEMPTION

SECTION V

Under Alabama law (Alabama Act 2018-234), the Owner is tax exempt from the payment of all State, County, and Municipal Sales and Use Taxes for *purchases that qualify for an exemption* pursuant to Alabama Department of Revenue (ADOR) Rule No. 810-6-3-.77. Bidders shall not include Sales and Use Taxes in their bid for *purchases that qualify for exemption* under ADOR rules. However, Bidders shall account for the Sales and Use Tax savings (i.e., the Sales and Use Taxes not included in the Contractor's bid) in the designated section of the bid form (included in the Bid Documents) in accordance with Alabama law. All Bidders shall reference Alabama Act 2018-234 and the ADOR - Sales and Use Tax Rules (specifically Rule No. 810-6-3-.77) prior to bidding. Bidders shall include all Sales and Use Taxes for purchases of non-exempt materials and items, etc., as well as all other applicable taxes. It shall be the responsibility solely of the Bidder to determine which purchases for this project are exempt from Sales and Use Tax and which purchases are not exempt.

Following execution of the Contract and in accordance with ADOR Rule No. 810-6-3-.77, the Contractor and any Sub-Contractors shall submit an Application for Sales and Use Tax Certificate of Exemption (ADOR Form ST: EXC-01) to the ADOR that is specifically for this tax-exempt project. The Contractor and any Sub-Contractors shall comply with all requirements of the ADOR and shall obtain the Certificates of Exemption (ADOR Form STC-1) prior to ordering any materials for the project that qualify for exemption of Sales and Use Taxes. The Owner will make available any information that is requested by the Contractor and is required by the ADOR for the Contractor and any Sub-Contractors to obtain their Certificates of Exemption. In accordance with ADOR Rule No. 810-6-3-.77, the Owner will also fulfill its obligation to submit its Application for Sales and Use Tax Certificate of Exemption specifically for this tax-exempt project.

SPECIAL PROVISIONS
FOR
INSURANCE REQUIREMENTS

SECTION VI

1. All bidders shall have their insurance provider thoroughly review all insurance requirements prior to Bid opening to ensure the Contractor includes sufficient monies to meet all insurance requirements. This review by the insurance provider shall be detailed and complete. The review shall determine pricing and availability of all specific insurance requirements including specific endorsements. This review shall determine all additional and special insurance that the Contractor must acquire to be in full and complete compliance with all insurance requirements. Prior to bidding, all bidders shall furnish to their insurance providers complete copies of all insurance requirements contained in the General Specifications Section of this Contract, all insurance requirements in other sections of the documents (including but not limited to the Special Provisions), and those required by permits, etc.

2. As soon as indication is given that the low bidder will apparently be awarded the contract, the Contractor shall have his insurance provider begin making whatever arrangements may be necessary to allow all required insurance, including all specific requirements (e.g., specific endorsements, etc.) for this particular project, to be promptly obtained so as not to delay execution of the contract.

3. Per the General Specifications, the Contractor will be required to provide copies of the Contractor's automatic policy endorsements or original policy endorsements acceptable to the Owner. Each endorsement shall indicate the policy number and be complete in full accordance with the General Specifications and to the satisfaction of the Owner and Engineer. The policy endorsements shall be filed with the Owner prior to the Owner's execution of the Contract. Automatic and/or original policy endorsements for additional insureds and waivers of subrogation for ALL policies shall be as broad as (i.e., similarly worded to) the following General Liability endorsements:

    a. Endorsements for the Additional Insured - ISO's CG 20 10 11/85 or the combination of CG 20 10 10/01 and CG 20 37 10/01

    b. Endorsements for Waivers of Subrogation - ISO's CG 24 04 10 93 or CG 24 04 05 09.

    Samples of acceptable ISO forms are provided on the following pages. Although these sample endorsements are for General Liability, ALL endorsements for ALL policies shall be similarly worded and acceptable to the Owner.

4. Per the General Specifications, "All Risk" Insurance (including flood insurance) shall be provided, if applicable. "All-Risk" Insurance shall be provided for all plants, pumping stations, buildings, tanks, structures, and equipment, etc. "All Risk" Insurance shall be provided as applicable for other portions of the project.

5. If project includes SRF Funding, Flood Insurance shall meet all SRF requirements.

POLICY NUMBER: **COMMERCIAL GENERAL LIABILITY**

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – (FORM B)

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART.

SCHEDULE

Name of Person or Organization:

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

WHO IS AN INSURED (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" for that insured by or for you.

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY
CG 20 10 10 01

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name of Person or Organization:

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. **Section II – Who Is An Insured** is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of your ongoing operations performed for that insured.

B. With respect to the insurance afforded to these additional insureds, the following exclusion is added:

2. Exclusions

This insurance does not apply to "bodily injury" or "property damage" occurring after:

(1) All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the site of the covered operations has been completed; or

(2) That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY
CG 20 37 10 01

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – COMPLETED OPERATIONS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name of Person or Organization:
Location And Description of Completed Operations:
Additional Premium:

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

Section II – Who Is An Insured is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" at the location designated and described in the schedule of this endorsement performed for that insured and included in the "products-completed operations hazard".

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY
CG 24 04 10 93

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name of Person or Organization:

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

The TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US Condition (Section **IV** – COMMERCIAL GENERAL LIABILITY CONDITIONS) is amended by the addition of the following:

We waive any right of recovery we may have against the person or organization shown in the Schedule above because of payments we make for injury or damage arising out of your ongoing operations or "your work" done under a contract with that person or organization and included in the "products-completed operations hazard". This waiver applies only to the person or organization shown in the Schedule above.

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY
CG 24 04 05 09

WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

SCHEDULE

Name Of Person Or Organization:
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

The following is added to Paragraph **8. Transfer Of Rights Of Recovery Against Others To Us** of **Section IV – Conditions:**

We waive any right of recovery we may have against the person or organization shown in the Schedule above because of payments we make for injury or damage arising out of your ongoing operations or "your work" done under a contract with that person or organization and included in the "products-completed operations hazard". This waiver applies only to the person or organization shown in the Schedule above.

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SPECIAL PROVISIONS
FOR
BUY AMERICAN PROVISIONS

SECTION VII

All materials on this project shall meet the Buy America Provisions of Federal Regulation 21, USC 313 and 23 CFR 635.410. Foreign products shall not exceed 0.1% of the total contract or $2500, whichever is greater.

Certified material test reports shall be submitted by the contractor for all materials showing the country of origin and/or processing of the manufacture, rolling, and coating of materials. Cost data for all materials shall also be submitted to verify that the Foreign Products limits have not been exceeded.

With each pay request, the Contractor shall certify to the Owner that all materials purchased and installed during the pay request period comply with the Buy America Provisions.

SPECIAL PROVISIONS
FOR
CONSENT OF SURETY
RELEASE OF LIENS
PAYMENT OF DEBTS AND CLAIMS

SECTION VIII

When the Owner and the Engineer have completed a review of the Work and of the request for final payment and accepted all work, final payment of the amount determined to be due under the Contract will be made to the Contractor, provided that all provisions of the Contract have been met, including all aspects of Section IX.3 FINAL PAYMENT contained in the General Specifications. In particular, the Contractor shall provide:

- Certified evidence that all payrolls, all amounts due for labor and materials, and all other indebtedness connected with the work have been fully paid and satisfied, and that there are no outstanding claims or demands against the Contractor in any manner connected with the work.

- A release of all claims and claims of lien against the Owner and its agents and Engineer from the Contractor and all major subcontractors (the Owner may waive the requirement for subcontractor releases) arising under and by virtue of the Contract, on form provided by the Owner, duly executed by the Contractor and with the consent of the Surety. The Contractor may specifically exclude claims of the Contractor from the operation of the release if specifically excluded there from in stated amounts and the reason therefore. The Contractor may with the consent of the Owner representative, if any subcontractor refuses to furnish such a release, furnish a bond with surety satisfactory to the Owner representative to indemnify against such claims.

Forms are provided on the following pages.

CONTRACTOR'S AFFIDAVIT OF RELEASE OF LIENS AND PAYMENT OF DEBTS AND CLAIMS

PROJECT:
(project name)

CONTRACT DATE:

TO OWNER:
(name and address of Owner)

STATE OF:

COUNTY OF:

I CERTIFY to the best of my knowledge and belief that all work has been performed and materials supplied in strict accordance with the terms and conditions of the corresponding contract documents between the_____ _____, hereinafter called the OWNER, and, _____ _____, hereinafter called the CONTRACTOR, for the above referenced project.

I further certify and declare that all bills for materials, supplies, utilities and for all other things furnished or caused to be furnished by the CONTRACTOR and used in the execution of the contract are fully paid and that there are no unpaid obligations, liens, claims, security interests, encumbrances, liabilities and/or demands of agencies, subcontractors, materialmen, mechanics, laborers or any others resulting from or arising out of any work done, caused to be done or ordered to be done by the CONTRACTOR under the contract, except as listed below.

I further certify and declare that, except as listed below, the CONTRACTOR (including but not limited to the Contractor, Subcontractors, all suppliers of material and equipment, and all performers of work, labor, or services) releases and forever discharges as well as indemnifies and holds harmless the OWNER and ENGINEER (Municipal Consultants, Inc.) from any and all obligations, liens, claims, security interests, encumbrances and/or liabilities arising by virtue of the contract and authorized changes between the contracting parties, and any and all claims and demands of every kind and character whatsoever against the OWNER and ENGINEER (Municipal Consultants, Inc.), arising out of or in any way relating to the contract and authorized changes.

EXCEPTIONS:

CONTRACTOR:
(name and address of Contractor)

BY: _____
(signature of authorized representative)

_____
(printed name and title)

Subscribed and sworn to before me on this _____day of _____, 20___.

_____
Notary Public
My commission expires: _____

CONSENT OF SURETY TO FINAL PAYMENT

PROJECT:
(project name)

CONTRACT DATE:

TO OWNER:
(name and address of Owner)

In accordance with the provisions of the Contract between the OWNER and the CONTRACTOR as indicated above, the
(name and address of Surety Company)

, SURETY COMPANY,

on bond of
(name and address of Contractor)

, CONTRACTOR,

hereby approves of the final payment to the CONTRACTOR, and agrees that the final payment to the CONTRACTOR shall not relieve the SURETY COMPANY of any of its obligations to
(name and address of Owner)

, OWNER,

IN WITNESS WHEREOF, the SURETY COMPANY has hereunto set its hand on this _____day of _____, 20___.

_____
Surety Company

_____
Signature of authorized representative

_____
Printed name and title

GENERAL SPECIFICATIONS

GENERAL SPECIFICATIONS

SECTION I
DEFINITION OF TERMS

In these Specifications, or in any Documents or Instruments in construction operations where these Specifications govern, the following terms, or pronouns in place of them, shall be interpreted as follows:

I.1 ADDENDA

Written or graphic instruments, issued prior to the execution of the agreement which modify or interpret the Contract, Plans, and Specifications by additions, deletions clarifications, or corrections.

I.2 A.S.T.M.

The American Society for Testing Materials.

I.3 BIDDER

A person, firm or corporation submitting a written Proposal in answer to an advertisement or request for Bids for the construction of the improvement.

I.4 CHANGE ORDER

A written instrument prepared by the Engineer and signed by the Owner, Contractor and Engineer stating their agreement upon a change in the Work, the amount of the adjustment in the Contract Sum, if any, and the extent of the adjustment in the Contract Time, if any.

I.5 CONTRACT

The written Agreement between the Owner and the Contractor, covering the performance of the work and the furnishing of the labor, equipment and materials. The Contract shall include, but shall not be limited to, the "Notice to Contractors," "Proposal," "Plans," "General Specifications," "Standard Specifications," "Supplemental Specifications," "Special Provisions," "Contract Agreement," and "Contract Bonds," together with all the Agreements and "Change Orders" that are required to complete the work in accordance with the Plans and the Contract.

I.6 CONTRACT BID PRICE

The total of the products of the estimated quantities of the items of the work listed in the Proposal and the unit prices bid.

I.7 CONTRACT BONDS

The approved indemnity bonds furnished by the Contractor and his Surety to guarantee completion of the Contract.

I.8 CONTRACT COMPLETION TIME

The period in calendar days from the time specified for the commencement of work to the time specified for its total completion.

I.9 CONTRACTOR

The individual, firm or corporation, the Party of the Second part to the Contract, who has entered into a Contract awarded him by the Owner, acting directly or through his agents or employees.

I.10 ENGINEER

The Engineer employed by the Owner, or his representative.

I.11 EQUIPMENT

Machinery, tools, and supplies for the construction of the work.

I.12 EXTRA WORK

Work authorized in writing by Change Order and performed by the Contractor, for which there is no basis of payment in the Contract Documents and Plans.

I.13 EXTRA WORK ORDERS

Written orders by Change Order to the Contractor authorizing work or furnishing of materials for EXTRA WORK, as defined in these Specifications.

I.14 INSPECTOR

A person employed by the Owner or Engineer to make inspection of materials and work.

I.15 ITEM

A specified class of work for which bid prices are in the Bid Documents.

I.16 MATERIAL

Any substance to be used in connection with the improvements.

I.17 NOTICE TO PROCEED (WORK ORDER)

Written notice from the Owner to the Contractor allowing work to start.

I.18 OWNER

The Party of the First Part to the Contract.

I.19 PLANS

All approved drawings which are on file at the office of the Owner or Engineer, or their reproductions showing the details of the work covered by the Contract.

I.20 PROPOSAL

The formal signed Bid Form with prices provided by the Bidder.

I.21 PROPOSAL FORM

All prepared forms on which Bids are submitted in the Bid Documents and all items in the Specification - Contractual Documents.

I.22 PROPOSAL GUARANTY

The Bid Bond or cashier's check to be furnished by the Bidder as a guarantee that he will enter into a Contract for the work as bid.

I.23 RESPONSIBLE BIDDER

Responsible Bidder shall mean a Bidder who, among other qualities determined necessary for performance, is competent, experienced, and financially able to perform the Contract.

I.24 RESPONSIVE BIDDER

Responsive Bidder shall mean a Bidder who submits a bid that complies with the terms and conditions of the invitation for bids, including plans, drawings, specifications and other provisions of the Contract Documents.

I.25 RETAINAGE

Retainage shall mean that money which has been held or retained by the awarding authority from Contractor's pay requests conditioned upon final completion and acceptance of all work in connection with the Project. Payment of retainage to the Contractor may be reduced by other contract considerations.

I.26 RIGHT-OF-WAY

The area acquired for use in constructing, operation and maintaining the work.

I.27 SPECIAL PROVISION

Clauses or memoranda, applying to the Contract of which these Specifications are a part, and/or amending these Specifications.

I.28 SPECIFICATIONS

The requirements, including Supplemental and Special Provisions applying to the Contract, establishing the type and kind of materials, applicable standards of quality and care, and equipment to be furnished and incorporated in the work.

I.29 STREET

Any or all portions of any dedicated street, avenue, alley, road, or other public highway.

I.30 SUBCONTRACTOR

Any individual, firm or corporation undertaking work under the Contract with an Agreement between himself and the Contractor, and approved by the Surety with the Owner reserving the right to disapprove the subcontractor. The Contractor shall be fully responsible for all his subcontractors including but not limited to safety.

I.31 SUPERINTENDENT

The representative of the Contractor who is present at the work at all times and authorized to interact with the Engineer and who is capable of efficiently superintending the work. The superintendent shall act as a manager which excludes him from operating equipment or performing any construction labor.

I.32 SUPPLEMENTAL AGREEMENT

A Written Agreement between the Contractor and the Owner with the consent of the Surety, modifying the original Contract.

I.33 SUPPLEMENTAL SPECIFICATIONS

Specifications supplemental to or superseding specified portions of the Specifications.

I.34 SURETY

The corporate body, licensed under the laws of the state in which the work is to be performed and bound with the Contractor for the performance of the Contract and payment of all claims recoverable under the Contract Bonds.

I.35 WORK

All performance required of the Contractor under the terms of the Contract to complete and provide the Owner the final project as described in the plans and contract.

SECTION II
PROPOSAL REQUIREMENTS AND CONDITIONS

II.1 QUALIFIED BIDDERS

Proposal Forms will be considered only from Contractors licensed under the laws of the state in which the work is to be done. A copy of the Contractor's license in the state work is to be performed must be attached to the bid. Only Contractors having met all qualification requirements as set forth in these Specifications shall be considered qualified. If the Owner requires prequalification of bidders, the bidder must successfully complete the Owner's requirements in the time frame required in the prequalification solicitation and these Specifications.

II.2 PROPOSAL FORM

The Engineer will furnish Bidders a Proposal Form showing the items of the work and/or materials to be furnished, the amount of the Proposal Guaranty, and the date, time

and place of the opening of proposals and the time in which the work must be completed. The Proposal Form will contain all papers bound with or attached to the Specification-Contractual Documents and addenda and are part of the Contract and/or Proposal and must not be detached or altered.

II.3 INTERPRETATION OF ESTIMATES

The estimates of work listed in the Proposal Form (including Basis of Payment and Items of Work) are to be considered only approximate quantities of items and are to be used as a basis for comparing bids. The Owner does not by any means guarantee that the approximate quantities given will hold in the construction of the work. Final installed quantities may vary significantly from the estimates shown.

Final Payment will be made for actual quantities of the work performed as approved by the Engineer, at the contract prices bid. Should the quantities of the pay items be more or less than the quantities estimated, the contract unit prices bid in the Proposal will prevail.

II.4 EXAMINATION OF PLANS, SPECIFICATIONS AND SITE OF WORK

Bidders are required to thoroughly examine the site of the proposed work, the Proposal Form, Plans, Specifications and the Contract. The submission of the Proposal shall be evidence that the Bidder has made such thorough examination and that the Contractor's bid includes all necessary components to provide the Owner with a fully functional facility that is complete in all respects. No compensation will be allowed for losses caused by failure to comply with this requirement.

II.5 PREPARATION OF PROPOSAL

Bidder's Proposal must be submitted on the Forms furnished him by the Engineer. The Bidder must specify in ink; in figures; if a space is provided, in words; a unit price; and a total price for each of the separate items. In case of error or discrepancy the sum obtained by adding all of the products of the unit prices and the estimated quantities shall prevail, and this shall be the Contract Bid Price. The prices in words will govern if a space is provided in the Bid Form. If a space for words is not provided on the Bid Form, the written unit price in figures will prevail for each work item. The total of that Bid Item that is accepted is the product of the Bidder's written unit price and the estimated quantity of that Bid Item.

The Proposal shall be signed by the Bidder. Name and address must be shown; if a firm or partnership, the name and address of each member of the firm, or partnership must be shown; if a corporation, the president, vice-president or secretary shall sign and affix the corporate seal. If the person signing the Proposal is an agent, the agent must attach written authorization from the corporation. The Proposal must show the name of the corporation, the state under which the corporation is chartered and the name, title and address of the officer executing the proposal.

Proposal Forms shall be enclosed in an envelope, sealed and addressed to the Owner with the Bidder's name and address inscribed on the outside and a warning not to be opened until the bid date. Proposals may be submitted to the Owner in person, by mail, or by agent, at any time prior to the day and time set for the opening of bids. Proposals will be

opened at the designated office at the time set forth in "Advertisement for Bids." Only bids submitted by Contractors licensed by the state laws in which the work is to be done will be considered. Proposals shall be submitted in the specification and contractual documents form in the proper order. No Proposal will be received after the time specified in the "Advertisement for Bids". A Bidder may withdraw, personally or by telegraphic or written request, any time prior to the closing time for receipt of bids. No Bidder may withdraw for a minimum period of sixty (60) days after the date set for the opening, but the period may be modified in the Bid Documents.

If any person submitting a bid is in doubt as to the meaning of any part of the Plans, Specifications, or other Contract Documents, he may submit to the Engineer a written request for an interpretation. Any interpretation of the Documents will be made only by an addendum and a copy of such addendum will be mailed or delivered to each person receiving a set of Documents. The Owner or Engineer will not be responsible for other explanations or interpretations.

Prior to bid opening, the Owner will make available to prospective Bidders, upon request, any information that it may have as to subsurface conditions and surface topography at the work site. Investigations conducted by the Owner or its Engineers of subsurface conditions were made for the purpose of study and design, and neither the Owner nor the Engineer assumes any responsibility whatever in respect to the sufficiency or accuracy of borings, or of the logs of test borings, or of other investigations that have been made, or of the interpretations made thereof, and there is no warranty or guarantee, either expressed or implied, that the conditions indicated by such investigations are representative of those existing throughout such area, or any part thereof, or that unforeseen developments may not occur.

Logs of test borings, geotechnical reports, or topographic maps showing a record of the data obtained by the investigations of surface and subsurface conditions shall not be considered a part of the Contract Documents, and are available only for the convenience of the Bidders. Such logs and reports represent only the opinion of the Geotechnical Engineer as to the character of the materials encountered by him in his investigations of the test borings.

Information derived from inspection of logs of test borings, or pits, geotechnical reports, topographic maps, or from Drawings showing location of utilities and structures will not in any way relieve the Contractor from any risk, or prevent him from properly examining the site and making such additional investigations as he may elect, or from properly fulfilling all the terms of the Contract Documents.

The Owner and Engineer shall not be responsible for any interpretations or conclusions drawn from any subsurface exploration reports or borings. Each Bidder is to base his bid upon his determination of the subsurface conditions and of the types and quantities or material to be encountered or needed. Additional tests or other exploratory operations may be made at no cost to the Owner.

II.6 IRREGULAR PROPOSALS

Proposals may be rejected as being non responsive if they contain omissions or uncompleted forms, alterations of form, additions, conditional bids, improper alternate bids, incomplete bids, erasures, or irregularities. Combination bids submitted as specified will not be classed as irregular. Proposals in which the unit or lump sum prices bid are obviously

unbalanced may be rejected. Bidders shall supply the names and addresses of major material suppliers and subcontractors as requested in the bid proposal and if not provided will be grounds for the Owner to disqualify the Bidder for not being responsive.

II.7 PROPOSAL GUARANTY

No Proposal will be considered unless accompanied by a cashier's check drawn on a bank in the Owner's state or Bid Bond from a company duly authorized and qualified to make bond in the Owner's state. The bond amount should be five percent (5%) of the Contract Bid but in no case more than $10,000.

II.8 OPENING OF PROPOSALS

Proposals will be opened and read publicly at the time and place indicated in the "Advertisement for Bids." Bidders or their authorized agents are invited to be present.

II.9 DISQUALIFICATION OF BIDDERS

A Bidder using the same or different names for submitting more than one Proposal will be disqualified. A Bidder may submit a Proposal as a Subcontractor to other principals and not be disqualified provided he does not withdraw his bid after bid opening.

If there is a reason for believing that collusion exists among the Bidders, any or all Proposals may be rejected. Those participating in collusion may be barred from submitting bids on the same or other work with the Owner.

The Owner can disqualify and/or reject bids where the Bidder does not comply with the requirements of the Contract Documents. The Owner reserves the right to reject any bid that is submitted by a Bidder that is determined by the Owner to not be a responsible Bidder or whose bid proposal is not responsive. In determining whether a Bidder or bid is responsible, the Owner reserves the right to also request and consider the factors in Section III.2 of the General Specifications.

II.10 COMPLIANCE WITH LAWS AND ORDINANCES

Each Bidder shall inform himself of, and the Bidder awarded a contract shall comply with, federal, state, and local laws, statutes, and ordinances relative to the execution of the work. This requirement includes, but is not limited to, applicable regulations concerning minimum wage rates, the use of domestic products, U.S. steel and resident labor, non-discrimination in the employment of labor, protection of public and employee safety and health, environmental protection, the protection of natural resources, fire protection, burning and non-burning requirements, permits, fees and similar subjects. The attention of all Bidders is called to the fact that the work will be subject to compliance with all applicable building and technical codes and will be subject, in addition to all other inspections, to inspection by a representative of the City's and/or County's building inspection department which has jurisdiction over the project, if any. If the project is a Public Works projects as defined by Alabama Code, Title 39 (1997), the bidders will be governed by the above Code. No adjustments or compensation will be allowed for losses caused by failure to comply with such requirements.

II.11 GENERAL CONTRACTOR'S PERMITS OR LICENSES

The attention of all Bidders is called to the provisions of the State law governing general contractors as set forth in ALA.CODE §34-8-1 et seq. (1975), particularly in regard to the need for and evidence of a State general contractor's license. The provisions of said state are adopted herein by reference and form a part of the Contract with the selected Bidder should this project be awarded.

Bidders will be governed by said statutes insofar as they are applicable. To summarize the above quoted statutes, ALA.CODE §34-8-1, et seq. (1975) provides that no one is entitled to bid and no contract may be awarded to anyone who does not possess a valid general contractor's permit or license, including specialty classifications for the work, as provided by the foregoing sections of the State Code, and rules and regulations promulgated pursuant thereto and that said bid may not be considered without evidence being produced that he is so qualified. Trade contractors must be duly licensed in accordance with applicable law. The Owner may not enter into a contract with a nonresident corporation that is not qualified under the State law to do business in Alabama.

SECTION III
AWARD AND EXECUTION OF CONTRACT

III.1 CONSIDERATION OF PROPOSALS

After the Proposals are opened, read and checked, the results will be made public. Until the final award of the Contract, the Owner reserves the right to reject any and all Proposals, and to waive technical errors. A Proposal will not be considered unless signed by the Bidder or his authorized agent and accompanied by cashier's check drawn on a state bank in the Owner's state or Bid Bond.

III.2 AWARD OF CONTRACT

The successful Bidder will be notified by "Notice of Award" mailed to the address shown on his Proposal.

In order to be considered for the award, the Bidder shall present to the Owner, when requested, satisfactory evidence that:

(a) He has the necessary capital and financial resources to undertake and complete the project.

(b) He has equipment, in good working order, adequate for performance of work within the time specified.

(c) He has within his organization, at the time, the construction management and supervisory personnel available for assignment to the project.

(d) The construction management and supervisory personnel are skilled and experienced in the particular type of work to be undertaken on the project. The bidder's attention is called to "V.2 CONTRACTOR".

(e) He has performed and completed similar work of similar magnitude in a satisfactory manner.

(f) There are no outstanding claims with the Owner on previous projects.

(g) He has complied with all qualification requirements set forth in these Specifications.

The Owner reserves the right to reject any proposal if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract and complete the work contemplated therein.

The Contractor shall use the personnel he submits as evidence of qualification throughout the construction of the project.

III.3 CANCELLATION OF AWARD

The Owner reserves the right to cancel the award of the Contract before its execution by either the Contractor or Owner without any liability against the Owner or the Engineer.

III.4 REQUIREMENTS OF CONTRACT BONDS

In order to insure the performance of the Contract and indemnify and save harmless the Owner and the Engineer from all damages, the Bidder, to whom the Contract is awarded, shall within fifteen (15) days from the award furnish the Owner, Surety Bonds equal to one hundred (100%) per cent of the total contract amount for Performance of Work and Payment of Labor and Materials.

Bonds shall be made on approved Bond Form, furnished by a Surety company authorized to do business in the state. The Bonds shall be countersigned by an authorized agent who is a resident of the state. The Bond shall have attached power of attorney of the signing official. Bonds shall be valid for twelve (12) months from date of final acceptance of the work.

III.5 EXECUTION OF CONTRACT BY CONTRACTOR

The Contract shall be signed by the Bidder receiving the award and returned to the Owner with Contract Bonds within fifteen (15) days of Notice of Award.

III.6 APPROVAL OF CONTRACT AND EXECUTION BY OWNER

The Owner shall approve and execute the Contract within fifteen (15) days after it has been completed in its entirety with all requirements properly met and its presentation to the Owner unless the Contractor agrees in writing to a longer period. No contract is binding upon the Owner until it has been executed by the Owner. The date of the execution of the Contract shall be when signed by the Owner. The "Notice to Proceed" may be held by the Owner for a reasonable time to remedy details of the project.

III.7 FAILURE TO EXECUTE CONTRACT

Should the successful Bidder or Bidders to whom a Contract is awarded fail to execute a Contract(s) and furnish acceptable Contract securities and evidence of insurance, as required, within fifteen (15) days after the prescribed forms have been presented to him/her, the Owner shall retain the proposal guaranty, or recover from the principal or the sureties, if the guaranty is a bid bond, the difference between the amount of the Contract as awarded, and

the amount of the proposal of the new lowest Bidder. If no other bids are received, the full amount of the proposal guaranty shall be so retained and recovered as liquidated damages for such default. Any sum so retained or recovered shall be the property of the Owner. In the event of the death of the lowest Bidder (if an individual) between the opening of the bids and ten (10) days following award of the Contract the Owner shall return the Proposal Guaranty to the estate of the Bidder.

III.8 WAIVER OF TRIAL BY JURY

The parties to the Contract desire to avoid the additional time and expense related to a jury trial of any disputes arising hereunder. Therefore, it is mutually agreed by and between the parties hereto, and for their successors and assigns, that they shall and hereby waive trial by jury of any claim, counterclaim, or third-party claim, etc., including any and all claims of injury or damages, etc., brought by either party against the other arising out of or in any way connected with the Contract and the relationship which arises here from. The parties acknowledge and agree that this waiver is knowingly, freely and voluntarily given, is desired by both parties, and is in the best interest of both parties. Further, the parties mutually agree that all such proceedings or related proceedings shall be filed in and conducted in a court located in the county of the Owner's central office location.

SECTION IV
SCOPE OF WORK

IV.1 INTENT OF PLANS AND SPECIFICATIONS

The Plans, Specifications, Bidder's Documents, Contract Documents, Bidder requirements, and all other agreements are interrelated and their intent is to prescribe a complete improvement. The Contractor shall perform all items of work in the Proposal Forms, Plans, and reduced work or extra work as ordered. The Contractor shall furnish, unless provided otherwise, all material, machinery, equipment, supplies, transportation and labor for the completion of the project. The Contractor shall, for the price bid, perform all work shown on the Plans, required by the Specifications, or as reasonably inferred, requested, or as required for a complete and workable project. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all. Performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results. Not all details are shown, particularly for architectural, equipment, and building details. Where details are not shown, the Contractor shall submit proposed details to Engineer for review, and shall perform the work in accordance with details accepted by the Engineer.

IV.2 ALTERATION OF PLANS AND CHARACTER OF WORK

The Engineer may without notice to the Surety and without change in the unit bid prices, make alterations in the Plans or the work and its quantities to complete the proposed

construction. Alterations shall not be considered as a waiver of any of the conditions of the Contract or Bonds.

IV.3 CHANGE ORDERS

The Engineer may order additional or reduced levels of work or materials. If not listed as a pay item or if not included in the Contract Unit Prices, it will be Extra Work, modified work, or deductive work and the total Contract Price unchanged, increased, or decreased. The Engineer will ask the Contractor for a proposed cost to complete the Work. If the Owner approves the proposed cost, it shall become a part of the Contract. If the Owner considers the price excessive on extra work, the Owner may have the Contractor perform the work on force account. The Contractor shall not, except in an emergency, perform work that he may deem "extra work" without first giving prior written notice to the Engineer. In all circumstances, the Contractor shall take appropriate measures to mitigate extra cost and time. Whenever changes are made, whether they eliminate or deduct work or create extra work or when differing conditions are encountered, credits or payments for a Change Order will be made by use of any one of the following methods:

(1) Unit prices or combinations of unit prices which formed the basis of the original Contract.

(2) A lump sum mutually accepted based upon the Contractor's estimate which is properly itemized and supported by sufficient substantiating data to permit evaluation by the Engineer and Owner.

(3) Actual cost of performing the work (estimated cost for reduced work) plus fifteen (15%) percent of actual cost to cover supervision, overhead, bond, profit, and all other costs. The Contractor shall submit to the Owner itemized cost sheets showing actual cost of performance of the work. Actual costs are defined as Required Labor Costs, Labor Insurance, Workmen's Benefits, and Social Security; Cost of Required Materials; and actual Rental Costs of Required Construction Equipment. When the work is performed under this method, the Contractor shall take appropriate measures to mitigate the costs and time incurred.

The Contractor shall promptly price and provide all other information to the Engineer to allow prompt evaluation and processing of change orders. The Contractor shall devote sufficient attention to change orders and provide adequate resources to start and complete change order work in an expeditious manner. The Contractor shall not be entitled to any reparation or compensation on account of such additional time or extension of time. The Contractor shall not be entitled to extra time or extra compensation associated with his failure to always act in a timely manner.

For unit price items, the quantities shown in the “Items of Work” reflect estimates. The actual quantities will be adjusted during construction to reflect the conditions encountered, or other changes or Owner preferences. Inasmuch as the actual quantities may vary considerably from the quantities listed in the schedule or shown on the drawings, the bidders shall insert prices that represent his actual cost. The Contractor will be paid for only

the quantities actually installed and approved for payment. Modification to quantities with contractually established unit prices does not constitute extra work.

IV.4 CLEANUP

During construction, the Contractor shall continuously keep all dirt, mud, and dust, etc., cleaned from all roads, streets, highways and parking lots, etc. that may be affected by his work. The Contractor shall take whatever measures are necessary to maintain such roads, streets, and highways in a clean and safe condition at all times.

The Contractor shall clear and remove debris from the project sites as a result of construction. He shall maintain and restore in an acceptable manner all property, both public and private, and leave the Right-of-Way, adjacent property, and sites of the improvements in a neat condition.

He shall thoroughly clean all discoloration, mud, dirt, rust, paint, markings, concrete splatter, ink or other lettering, and stains of any nature, etc. from all structures and surfaces, etc.

The Contractor shall take appropriate measures during and throughout construction to prevent discoloration and staining, etc., of all surfaces during construction. He shall provide cleaning of all mud, concrete splatter, oil, and stain-producing materials, etc. during construction as required to facilitate final cleaning. Regardless, all discoloration and staining, etc., shall be totally removed at the completion of construction. The Contractor shall use pressure washing, steam cleaning, chemical cleaning, and whatever additional measures may be necessary to totally remove all traces of all discoloration and all stains of all types, etc. The cleaning shall be conducted in a manner that the final surface appearance is uniform and attractive.

When facilities are cleaned prior to the completion of all work, and then startup, operation, or other activities by the Owner or Contractor result in the need for additional cleaning, such cleaning shall be performed by the Contractor.

These cleaning requirements apply to the entire project including but not limited to all, floors, walls, ceilings, structures, buildings, roofs, windows, enclosures, equipment, walks, sidewalks, steps, stairs, metal surfaces, fiberglass surfaces, plastic surfaces, masonry, paving, concrete, asphalt, and all other surfaces, etc.

These cleaning requirements also apply to all electrical facilities, including but not limited to, inside and outside of electrical panels, conduits, pull boxes, and lights, etc. Protect electrical facilities from concrete splatter when concrete is being placed. Clean all dust and debris, etc. from the inside of all electrical and control panels, etc.

SECTION V
CONTROL OF WORK

V.1 ENGINEER

Project communication is generally through the Engineer and the work shall be accomplished under the inspection of the Engineer. The Engineer shall decide questions which arise concerning materials furnished, and work performed. The Engineer shall interpret the Plans and Specifications during the fulfillment of the Contract. The Engineer shall have

authority to decide disputes and mutual right between Contractors. The Engineer is not authorized to increase the obligation of the Owner to the Contractor, except in accordance with the terms of the Contract.

The Engineer may inspect the Work at intervals appropriate to the stage of construction to become generally familiar with the progress and quality of the completed Work and to determine in general if the work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Contract Documents. However, the Engineer will not be required to make exhaustive or continuous on-site inspections to check quality or quantity of the Work. On the basis of on-site observations as an engineer, the Engineer will keep the Owner informed of progress of the Work, and will endeavor to guard the Owner against defects and deficiencies in the Work.

The Engineer will not have control over or charge of and will not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility. The Engineer will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The Engineer will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or of any other persons performing portions of the Work. The Engineer has no authority to supervise or control the Contractor (or subcontractors) or any of their personnel.

The Engineer shall have no obligation or duty to prepare a list of incomplete work until the Contractor has complied with all the requirements of Project Completion. However, should the Engineer produce any preliminary list of incomplete work and provide it to the Contractor, the Engineer is in no way responsible for listing all incomplete or unacceptable items. Such a list may require more time and personnel than the Engineer could devote and may be totally impractical if significant work remains. Whether or not any preliminary list of work is prepared by the Engineer, the Contractor shall not be entitled to any claim whatsoever in regard to such a list. If such a list is given to the Contractor, it shall be solely for the convenience of the Contractor and shall not in any way be considered to be a complete or semi-complete list of incomplete work. The Contractor shall not in any way assume that the list is in any way representative of all the work remaining or is even representative of the importance or magnitude of the remaining work. It is the responsibility of the Contractor to prepare his own listing of incomplete work.

The Engineer will have authority to reject Work which does not conform to the Contract Documents. However, neither this authority of the Engineer nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Engineer to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing portions of the Work.

The Engineer shall review and approve or take other appropriate action on the Contractor submittals, such as shop drawings, product data, samples and other data, which the Contractor is required to submit, but only for the limited purpose of checking for conformance with the design concept and the information shown in the Construction Documents. This review shall not include review of the accuracy or completeness of details, such as quantities, dimensions, weights or gauges, fabrication processes, construction means or methods,

coordination of the work with other trades or construction safety precautions, all of which are the sole responsibility of the Contractor. The Engineer's review shall be conducted in a reasonable time period while allowing sufficient time in the Engineer's judgment to permit adequate review. Review of a specific item shall not indicate that the Engineer has reviewed the entire assembly of which the item is a component. The Engineer shall not be responsible for any deviations from the Construction Documents and in all cases the Contractor shall remain responsible for the deviations. The Engineer shall not be required to review partial submissions, submittals containing significant inaccuracies, submittals not properly and thoroughly coordinated by the Contractor, or those for which submissions of correlated items have not been received.

V.2 CONTRACTOR

The Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the Owner. The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the Engineer at once.

The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless Contract Documents give other specific instructions concerning these matters.

The Contractor shall be fully responsible to the Owner for all acts and all omissions of the Contractor's employees, Subcontractors and their agents and employees, and all other persons performing portions of the Work for the Contractor. The Contractor shall be solely and fully responsible for all safety associated with all work by his personnel, subcontractors, suppliers, agents, and employees, etc. The Contractor shall be fully responsible for the quality of work of and for supervising all work by his subcontractors, suppliers, agents, and employees, etc. The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Engineer in the Engineer's administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor. The Contractor shall be responsible for inspection of portions of Work already performed under this Contract to determine that such portions are in proper condition to received subsequent Work. The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

The Contractor's superintendent, project manager, assistant project manager, and other key project personnel shall be thoroughly knowledgeable regarding all the types of work required to safely and fully complete the entire project in full accordance with all the Plans and Specifications. They shall have a complete understanding of all the potential dangers that may be encountered in the work required by this project. They shall implement and enforce proper safety procedures throughout the entire duration of the construction. They shall

also be very well-experienced in their position in performing similar projects (including water and wastewater projects where the project involves water or wastewater) with the same or greater complexity. All Contractor personnel shall be well-experienced at all tasks they are performing. The full-time project manager shall have acceptable experience being the full-time project manager on at least three prior similar projects of similar type and complexity. For projects where a pump station is to be constructed or modified, the minimum required experience shall be similar pump stations or treatment plants on projects of similar or greater complexity and size. For projects where a treatment plant is to be constructed or modified, the minimum experience shall be treatment plant experience on projects of similar or greater complexity and size.

The Contractor shall utilize office and field personnel who have a full understanding of all the risks and potential dangers that may be associated with all the different types of work involved in the project.

The Contractor shall be solely responsible for insuring that he is in full compliance with all Contract requirements, all requirements in the specifications, and all requirements in the drawings.

V.3 DRAWINGS

The Plans accompanying these Specifications form a part of the Contract and include the drawings showing the location and details of the work insofar as practicable. No change or alteration shall be made in the plans without the written permission of the Engineer. The figure dimensions on the Plans are assumed to be correct, but the Contractor is warned to check carefully all dimensions before proceeding with the construction. Should any errors be discovered, the Engineer's attention shall be immediately directed to same, and his decision in the matter shall be final.

V.4 COORDINATION OF PLANS AND SPECIFICATIONS

These Specifications, the Supplemental Specifications, the Plans, Special Provisions and all supplementary documents are essential parts of the Contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and provide for a complete work. All details and requirements related to items of work or equipment, etc., are not shown in one location in the plans or in one specification. The Contractor shall use the complete set of plans and specifications in its entirety to determine and comply with all project requirements. In case of discrepancy, figured dimensions, unless obviously incorrect, shall govern over scaled dimensions. Supplemental Specifications shall govern over the General Specifications. Plans shall govern over Specifications. Special Provisions shall govern over Specifications, Supplemental Specifications and Plans. The latest revision or its replacement of a professional association's specification or regulatory requirement shall govern.

It is the intent of the Drawings and Specifications that the Contractor shall furnish all labor, tools, materials, equipment, transportation and services necessary for the proper execution of the work so shown and/or described, unless specifically noted otherwise. The Contractor shall execute all work so described in full conformance with the Plans, Specifications and all Contract Documents; shall perform all incidental work necessary to

complete the project in an acceptable manner; and shall fully and satisfactorily complete all work, facilities, and improvements, ready for use, occupancy and operation by the Owner in a timely manner. To avoid delaying the schedule, the Contractor shall always spot check by exposing, measuring, etc. the existing facilities early in the project to coordinate the changes as shown or implied by the Contract Documents to existing facilities i.e., piping, equipment, etc.

The Contractor shall not take advantage of errors or omissions in the Plans or discrepancies between the Plans and Specifications. It shall be his responsibility to notify the Engineer of any errors or discrepancies found and ask for a clarification. The Engineer will make the corrections or clarifications. After discovery of such inconsistencies or ambiguities by the Contractor, any work done by the Contractor on any part of the project affected by such inconsistencies or ambiguities before receipt of written corrections from the Engineer shall be at the Contractor's risk.

V.5 SHOP DRAWINGS, SUBMITTALS, AND O & M MANUALS

The Contractor shall provide all shop drawings, setting layouts and schedules, pipe layout and installation schedules, piping installation details, and such other drawings as may be necessary for the proper and satisfactory prosecution of the work in accordance with the intent of the Drawings and Specifications and to secure a complete and operable project capable of satisfactory performance of the service intended. Upon the request of the Contractor, the Engineer may waive this requirement in the case of standard manufactured items named in the Specifications. The drawings shall be submitted in accordance with an orderly schedule based upon time required for fabrication or manufacture, delivery, and installation of items presented in shop drawings which is coordinated with the Contractor's construction schedule and allows the Engineer reasonable time to review submittals including re-submittals. The Engineer's review time will be longer for submittals for complex equipment and for submittals where the Contractor has not completely complied with all submittal requirements.

Shop drawings, Product Data, Samples and similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate the way the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the Engineer shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

The actions required to be taken by the Contractor during the submittal process shall include, but shall not be limited to the following:

(a) The Contractor must thoroughly review and coordinate all submittal data before forwarding such material to the Engineer for his review, shall indicate on the submittal material that he has made such a review, and shall verify such indication or statement by his signature or initials on the Contractor's stamp. The Contractor shall clearly mark all corrections, etc., on the submittals, shop drawings, and O&M Manuals prior to furnishing to the Engineer. If the corrections and markup, etc., are significant, the Contractor shall have the manufacturer or fabricator, etc., prepare a new corrected submittal or shop drawing or O&M Manual prior to furnishing to the Engineer. The new submittal shall also be reviewed

by the Contractor in full accordance with the requirements herein prior to furnishing to the Engineer. Further, all electrical and control submittals shall be thoroughly reviewed and coordinated by the Electrical Subcontractor who shall also stamp and sign or initial those submittals. The requirement for review and coordination by the Electrical Subcontractor of electrical and controls also applies to equipment not being provided by the Electrical Subcontractor. All electrical and control submittals (regardless of the manufacturer or supplier) shall also be thoroughly coordinated by SCADA or instrumentation supplier/manufacturer/system integrator prior to making the first submittal. Any submittals apparently not having been thoroughly reviewed or fully coordinated by the Contractor, and Electrical Subcontractor and system integrator as appropriate, may be returned to him (without review, or with partial review, by the Engineer) for re-submittal. Any comments, questions, corrections, or modifications to the submittal as a result of the review by the Contractor, Electrical Subcontractor and system integrator shall be made to the submittal (by the original producer of the submittal unless approved otherwise by the Engineer) prior to the first submittal to the Engineer. All parties required to review or coordinate the submittals shall utilize personnel who are qualified and experienced at reviewing such submittals.

Each submittal shall be numbered consecutively in order of submission to the Engineer. Resubmittals shall be designated with the original submittal number and the suffixes A, B, C, etc., as required, to indicate consecutive resubmissions.

(b) Submittal items shall be referenced to the applicable Division, Section and page numbers of the Specifications.

(c) Submittal items shall be referenced to sheets (by number) of the Contract Drawings on which such items appear, when applicable.

(d) Any and all particular features of the items submitted that may deviate from those specified and/or shown in the Contract Specifications or Drawings shall be clearly indicated by notations on the submittals and on a separate “Exceptions” sheet submitted by the Contractor.

(e) Submittals shall be legible and should be original information. Copies of facsimiles will not be accepted. The “Exceptions” sheet shall be completed by the Contractor and included with all his submittals. The “Exceptions” sheet shall state “None” if there are no exceptions and shall be included with the submittal. The “Exceptions” sheet must be executed (signed and dated) by the Contractor. The Contractor shall include in the list of exceptions all discrepancies in the submittal. (For example if an item is shown to have one coating in one part of the submittal but a different coating in another part of the submittal, the Contractor shall list such discrepancies as exceptions.) The Engineer shall not be required to find all discrepancies or exceptions as that is the responsibility solely of the Contractor to list all exceptions and discrepancies. The Engineer shall not be required to evaluate any request for an exception unless it is clearly listed on the “Exceptions” sheet included with the submittal.

(f) Submittals for equipment, materials, etc. from different specification divisions shall not be made under a single letter of transmittal.

(g) Submittals shall be stamped "Submittals" on exterior of their envelope or package.

(h) The submittals shall contain all information required for the Engineer to determine, if he desires, if the item being proposed fully and completely complies with all

requirements of the Specifications. Where all such information is not submitted, this shall represent the Contractor's certification that such items are in full compliance with all requirements of the plans and specifications.

(i) The Contractor shall cross out all non-applicable information, models, and options, etc. such that all information remaining pertains specifically to the items being furnished.

(j) The submittal shall show all required information relating to coordination with or connection to other equipment. Properly coordinate the location and orientation of all equipment. Insure equipment does not conflict with other requirements or structures, etc. All control panels and all wiring, including interface with other signals, alarms, or equipment, shall be clearly shown. Clearly show all field wiring and all connections to other equipment including the terminal numbers in other equipment. The Contractor shall fully coordinate all equipment and connections provided for work as shown in the submittal with Electrical, Control, and Panel Suppliers and/or Subcontractors. All electrical and control functions shall be clearly labeled. Provide supplementary notes and descriptions if needed to avoid any confusion.

(k) Equipment shop drawing submittals shall contain the manufacturer's handling and storage requirements, including all maintenance required during storage, type of storage (indoor, outdoor, etc.), heat source, or storage temperature requirements, short term or long term requirements, and all other pertinent storage and maintenance requirements for type of job, location, and exposures. This storage information shall be clearly written, easy-to-understand, detailed, and complete. If preprinted storage instructions are provided, cross out all non-applicable information. Storage instructions shall separately state instructions for short-term storage, long-term storage, and storage after equipment is installed but before placed into fulltime operation. Where motors are part of the submitted equipment, provide the same type of storage information specific to the motors that are provided. Unless clearly stated otherwise by the manufacturer's storage information, storage in utility trailers, or portable storage units (Conex, etc.) shall not be considered indoor or inside storage. Where the required storage requirements are not clear to the Engineer, the equipment shall be stored indoors and inside a permanent structure with conditioned temperature for cooling by air conditioning and heating.

(l) Show anchor bolts and installation requirements. Specifically list all spare parts that will be provided. Specifically list all installation, startup, and training services that will be provided.

(m) Provide all other information requested by Engineer to assist him in understanding the items being provided, the operation of the equipment and controls, the submittals, and the coordination with other equipment.

(n) Provide manufacturer's certification and Contractor's certification that all submittal requirements are fully complied with except as specifically noted. These certifications shall be on a form prepared by and furnished by the Engineer.

(o) Where product samples are submitted for review, the Contractor shall submit a minimum of three samples (i.e. in triplicate) which will be retained by the Engineer/Owner. The samples shall be clearly labeled by permanent labeling to identify the item, date, submittal number, model and/or color, etc., as applicable. All colors to utilized on the project shall be submitted at one time to coordinate and facilitate color selection by the

Owner. Where required, color charts or samples shall be included in the color submittal for the following items as a minimum: paints, thorocoat, sealants, caulk, brick, mortar, block, fans, louvers, doors, and windows, and other similar items, etc. Provide color samples for other items as applicable or as required.

(p) All equipment manufacturers shall include in their submittal a Submittal Certification Form prepared by the Engineer and executed by the manufacturer's engineer in responsible charge stating that (1) they have responsible control over the submittal, (2) they have thoroughly reviewed and understand the project requirements and the submittal requirements, (3) the submittal is in full accordance with submittal requirements contained in the General Specifications except as the manufacture itemizes below, and (4) an acknowledgement that the submittal will not be reviewed by the Engineer if it is not in full accordance with all submittal requirements.

(q) The equipment manufacturer's Submittal Certification Form prepared by the Engineer shall include a space which shall be executed by the Contractor stating that (1) he has carefully reviewed the submittal, (2) it has been reviewed and coordinated by Electrical Subcontractor and SCADA/system integrator, (3) it has been thoroughly coordinated as required, (4) the paint system proposed in the submittal meets all the project painting specifications including but not limited to preparation, coating system, number of coats, thickness, color, (5) the submittal contains long term and short term storage instructions specific for the project including but not limited to whether or not equipment must be stored in conditioned space, heated space, or only out of the weather, etc. (In the absence of clearly written instructions to the contrary, equipment shall be stored in heated and air conditioned space.), (6) the submittal contains listing of all spare parts and these are in conformance with the specifications, (7) the submittal states the manufacturer's field services being provided, (8) the submittal states that all exceptions are listed on an attached sheet, and (9) an acknowledgement that the submittal will not be reviewed by the Engineer if it is not in full accordance with all submittal requirements.

(r) The equipment manufacturer's Submittal Certification Form prepared by the Engineer shall include a space which shall be executed by the Electrical Subcontractor stating that (1) he has carefully reviewed the submittal, (2) it has been reviewed and coordinated by Electrical Subcontractor and SCADA/system integrator, (3) it has been thoroughly coordinated as required, (4) the submittal clearly shows <u>all</u> connecting wiring (including power, control, instrumentation, and SCADA) including but not limited to voltages, power sources, and (where applicable) signal types. This Electrical Subcontractor certification is not required on items that have no electrical or wiring components.

The Engineer shall not be required to review submittals that are not in full compliance with all the submittal requirements. However, should the Engineer elect to review such submittals, the review time will be longer.

The Engineer does not necessarily review all details of all submittals. For some submittals, the Engineer's review may be very limited. Regardless of the Engineer's review or limited or partial review, the Contractor remains fully responsible for full compliance with all requirements of the plans and specifications.

Unless a greater number is called for in various portions of these Specifications the minimum number of copies of submittal data shall be six (6).

Deviations from the Drawings and Specifications shall be called to the attention of the Engineer by the Contractor at the time when such shop drawings or other drawings are first submitted to the Engineer for his consideration. The Engineer's review of any data shall not release the Contractor from responsibility for such deviations, or any subsequent deviations not noted by the Contractor or the Engineer. Any disclaimers or similar statements in the submittals shall not relieve the Contractor, Subcontractor, manufacturer, or equipment supplier of their responsibility.

The Contractor shall coordinate and verify dimensions, arrangements, configurations, and orientation, etc., to insure that all items fit properly in the space available and are accessible for maintenance and replacement, etc.

Shop drawings and other drawings submitted for review by the Engineer shall bear the Contractor's certification. The certification shall represent that he has reviewed, checked, and approved such drawings; that they are in harmony with the requirements of the project and with the provisions of the Contract Documents; that he has verified all field measurements, construction criteria, materials, catalog numbers, and similar data; and that the work represented by the shop drawings is recommended by the Contractor and that the Contractor's Guaranty will fully apply. The Contractor shall insure that all markups in the submittal and all comments returned with the submittal are properly incorporated in all products delivered to the project. Regardless of the Contractor's procedures and by virtue of the Contractor submitting the data to the Engineer, he thereby certifies the above and that he has coordinated the submittal with his work. If the Engineer marks up the shop drawing or submittal, the Contractor shall carefully review, check, and coordinate the Engineer's comments prior to releasing the shop drawings and shall promptly notify the Engineer if he disagrees or doesn't understand the markings. Regardless, the Contractor remains fully and solely responsible for compliance with the plans and specifications.

The finished assemblies represented by the shop drawings and other such drawings are required to be in conformance with the standards of the Occupational Safety and Health Administration, wherever applicable. Manufacturer or contractor shall prepare detailed installation drawings for each assembly.

The Contractor shall submit Operation and Maintenance (O&M) manuals for all equipment of all types provided for the project. This also includes but is not limited to all electrical equipment, monitoring equipment, instrumentation, and controls, etc. O&M Manuals shall be handled the same as other submittals, and shall be accompanied by the same Submittal Certification Form executed by the Manufacturer and the General Contractor. The manual shall contain sufficient drawings, with all equipment components clearly labeled and identified, such that maintenance personnel can promptly determine each and every individual component requiring maintenance and its location as discussed in the manual. The drawings shall be detailed and easy to understand. The manual shall address all recommended maintenance as well as all safety precautions and procedures. The manuals shall fully describe all the features of all equipment. The controls and panels, including but not limited to all alarms, lights, and switches, etc., shall be clearly explained. The O&M manuals shall have a table of contents and be tabbed, bound, and arranged as necessary for easy reference and use. The Contractor shall review the O&M manuals to insure compliance with all submittal requirements prior to submitting them to the Engineer. The manuals shall be revised as

necessary prior to making submittal to the Engineer. Two initial manuals shall be submitted a minimum of 90 days prior to equipment startup for Engineer review. The manuals shall be customized specifically to this project and specific for the equipment actually provided. If the O&M manual contains references to equipment components or parts or material different from that actually furnished, the Contractor shall cross out the inapplicable references or sections. The manual shall not include references to "optional" features or components, etc., without clearly and specifically clarifying whether such an option was actually provided. If an optional feature is provided, delete references to "optional". If an optional feature is not provided, cross out references to the feature. The submitted manual will not be considered acceptable if it contains inapplicable references that are not marked out. Any O&M manuals apparently not having been thoroughly reviewed or fully coordinated by the Contractor, may be returned to him (without review, or with partial review, by the Engineer) for re-submittal. The Contractor shall submit originals or very high quality copies.

The O&M manual for a piece of equipment shall contain an Equipment Maintenance Summary Form that summarizes all routine maintenance requirements of the equipment provided in a concise, easy to follow format. The form shall also clearly indicate maintenance frequency, required lubricants, and lubricant quantity. The form shall also clearly show any required initial oil changes due to the use of different lubricants for storage or due to short change intervals at startup. The form shall be located in its own tabbed division and the tab shall be clearly labeled "Maintenance Summary."

The exact location of every lubrication point or adjustment point, etc, shall be clearly shown and labeled in high quality drawings or photographs. The drawings or photographs shall be such that maintenance personnel can quickly discern the exact location of all items requiring attention. Provide multiple drawings (both overall system and detailed) or photographs where helpful for immediate understanding.

All O&M manuals shall be organized, arranged, and tabbed to allow operators and maintenance personnel to easily and promptly find all needed information. Provide whatever features, figures, and drawings, etc., may be desirable for a very user-friendly manual. Where the manual pertains to multiple models of non-identical equipment, each separate model shall be in its own tabbed division of the manual and the division shall be clearly labeled and contain all the information, drawings, and maintenance summary for that specific model.

After the O&M manual is accepted by the Engineer, the Contractor shall submit six (6) copies of the final O&M Manual.

V.6 DATA FOR SHOP DRAWINGS

The Contractor shall submit, for review by the Engineer, complete catalog data for materials and every manufactured item of equipment and all components to be used in the work, including: specific performance data, material description, rating, capacity, working pressure, material gauge or thickness, brand name, catalog number, general type, and other pertinent data. Where equipment or material is of a minor nature, the Contractor shall furnish the Engineer a complete list, giving names of manufacturers, catalog numbers, and other applicable data. Submittals shall be compiled by the Contractor and reviewed by the Contractor and Engineer before equipment is ordered. Where details of items of equipment

are affected by details of items of other equipment, submittals for such associated items of equipment shall be compiled by the Contractor and reviewed by the Contractor and Engineer before any such associated items of equipment are ordered.

Catalog data for equipment and materials submitted by the Contractor shall not supersede the Contract Documents. The Contractor shall check the equipment, materials, and work described by the catalog data against the requirements set forth in the Contract Documents in order to determine the existence of any errors or deviations. The review by the Engineer shall not relieve the Contractor of the responsibility for correcting and/or remedying such deviations from the Drawings and/or Specifications, either by redesign or by submitting equipment or materials fully meeting the requirements of the Contract Documents. The Contractor shall, in writing, call the attention of the Engineer to equipment and materials deviations at the time of the submittal. If the equipment or material should be accepted, the Contractor will ensure the proper fit of the equipment in the work and guarantee that the equipment or material is suitable for the service intended and that the performance of the equipment or material, with respect to life and efficiency, will equal or exceed that of the equipment or material specified. The form, extent and specifics of the Contractor's Guaranty shall be subject to the decision of the Engineer. Review by the Engineer of the Contractor's submittals of catalog data shall not relieve the Contractor of responsibility for errors in the submittals.

Engineering concurrence of all data described above is a prerequisite to the ordering of the equipment or materials by the Contractor, and, in the case where shop drawings may be required, the acceptability of the shop drawings is also a prerequisite to the manufacture of the item.

V.7 COOPERATION WITH UTILITIES

The Owners or Operators of Private or Public utilities shall have access to the work for the installation or repair. When taking any utilities out of service for construction purposes, the Contractor shall attain the permission and coordinate and comply with whatever requirements the utility Owner may have to minimize the time the utility must be removed from service. This may include such requirements as performing the work at night, weekends, or early morning hours (midnight and later) as may be designated by the utility Owner. The number of shutdowns shall be minimized. This may require two or more separate, independent crews both working simultaneously. All shutdowns shall be carefully planned by the Contractor to insure minimal disruption with a written plan submitted by the Contractor. Backup equipment and materials shall be provided by the Contractor as appropriate or required. No compensation shall be allowed because of the delay or interference caused by such work.

V.8 COOPERATION OF THE CONTRACTOR

The Contractor will be supplied with three copies of the Plans and Specifications. The Contractor shall have on the Work, at all times, one copy of the Plans and Specifications. The Contractor will cooperate with the Engineer, Owner and other Contractors.

The Contractor shall have a competent Superintendent with authority to direct the work as required by the Engineer. The Superintendent shall be furnished irrespective of the amount of work sublet and shall have authority over all subcontract work.

It may be necessary that certain items of work be completed, fully tested and placed in service before other facilities can be constructed. This often applies when the project involves work associated with existing treatment plants, pump stations, or lift stations, etc. The plans and specifications may not call out any or all of the work elements where such sequencing is necessary. It is the Contractor's duty to identify any such or similar sequencing and implement such sequencing at no additional cost or time to the Owner. The structures and facilities that the Contractor shall have completed and ready for operation in order to fulfill the above requirement shall be scheduled with the Engineer. After all testing and equipment adjustment has been performed to the satisfaction of the Engineer, the facilities shall be placed in operation with the assistance of the Contractor. The personnel of the Owner shall then perform all operating functions in accordance with instructions previously received from equipment manufacturers. The Contractor shall be required to keep the existing facilities and place new units in operation in a manner to best keep the existing facilities operating. All start-up shall be scheduled with the Engineer.

V.9 SITE ENGINEERING

The Plans show the lines and grades for the prosecution of the work. The Contractor shall be fully responsible for construction to the alignment, elevations and dimensions and shall provide the stake-out of the project off of existing bench marks and stations. The Contractor shall be held responsible for the preservation of all stakes and bench marks. If, in the opinion of the Engineer, any of the construction stakes or bench marks have been carelessly or willfully destroyed or disturbed by the Contractor, the cost to the Owner of replacing them shall be charged against the Contractor.

The Contractor shall set the elevation of all structures, tanks, pipes, and gates, etc. The Contractor shall be solely responsible for verifying all such elevations prior to pouring concrete, etc. The Contractor shall be solely responsible for the satisfactory removal and replacement of any structure, tank, pipe, or gate, etc. that is later determined not to be in full compliance with contract requirements.

The Contractor shall furnish all materials for marking and maintaining points and lines and shall furnish such labor as may be required. When required by the Contract Documents, the Contractor shall provide independent and adequate building facilities to perform field laboratory and/or office for inspection. The Plans and Standard Specifications will indicate the requirements for any required facilities.

V.10 INSPECTORS, ASSISTANTS, AND REPRESENTATIVES

Inspectors, assistants or representatives shall not be authorized to alter the Plans and Specifications; nor shall they act as foreman for the Contractor, or interfere with the management of the work. Any advice which they may give the Contractor shall not be construed as binding the Engineer or the Owner in any way, nor releasing the Contractor from fulfilling all of the terms of the Contracts. Inspectors, assistants, and representatives are not authorized to supervise or control the Contractor or subcontractor personnel or their work.

V.11 INSPECTION OF THE WORK

The Contractor shall furnish the Engineer with facility for ascertaining whether or not the work performed and materials used are in accordance with the requirements and intent of the Contract. At any time before final acceptance of the work, the Contractor shall, if the Engineer requests, remove or uncover such portions of the finished work as the Engineer may direct. After the examination, the Contractor shall restore the work to the standard required by Specifications. If the work is acceptable and if the Engineer had been given ample opportunity to inspect the work prior to its being covered, the uncovering or removing shall be paid for as Extra allowed the Contractor. No work shall be done nor materials used without providing the Engineer the opportunity to inspect. Failure to reject any defective work or material shall not prevent later rejection whether or not such Work is fabricated, installed, or completed. Failure to detect or reject defective work shall not relieve the Contractor of his responsibilities nor impose any liability on the Engineer. Inspection is not acceptance and shall not constitute acceptance by the Owner. The Contractor is solely responsible for performing all the work in full accordance with all the requirements of the Contract.

V.12 DEFECTIVE WORK

Defective work shall be removed and replaced without extra compensation. Should the Contractor fail to remove defective work when so ordered by the Engineer, the Engineer may withhold payment. Any work not in full compliance with the requirements of the plans and specifications shall be considered defective work.

In any case, the amount previously paid to the Contractor for defective work may be reduced at any time the Owner determines it is in his best interest. The Owner may also, at any time, deduct amounts and require the Contractor to reimburse amounts and withhold further payment for all costs associated with the complete correction of the defective work to the full satisfaction of the Owner. These deductions or reimbursements shall include, but not be limited to, the full cost of satisfactorily removing all work not in full compliance with all Contract requirements, as well as any other work that must be removed or modified in order to correct or replace the work in non-compliance.

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

V.13 UNAUTHORIZED WORK

Work done in excess of that provided by the lines and grades shown on the Plans or as given by the Engineer, or any extra work done without the written authority of the Engineer, will be considered as unauthorized, and will not be paid for. If Unauthorized Work is directed to be removed it shall be handled as provided by Article V.12.

V.14 MAINTENANCE OF THE WORK

The Contractor will be required to continuously maintain the work under the Contract from the date of Notice to Proceed until the work is completed and accepted. The work shall be maintained in a manner which maximizes the safety and convenience of all persons in the vicinity of the work. Maintenance work, until finally accepted, shall be included in the Contract Prices. The Contractor shall restore without compensation, all damages to the Work before its acceptance. During suspension of Work, the Contractor shall be responsible for all materials and construction.

The failure of the Contractor to comply with maintenance of the Work may result in notification by the Engineer to the Contractor's superintendent or his employee in charge to comply with the required maintenance. If the Contractor fails to remedy unsatisfactory maintenance within three (3) days after the date of issuance of this notice, the Owner may proceed to maintain the work. However, regardless of whether or not the Contractor is notified of his failure to maintain the work, and regardless of whether or not the Owner maintains the work, it shall remain the responsibility, solely, of the Contractor to maintain the work. The entire cost of this maintenance will be deducted from monies due the Contractor.

This requirement applies to all aspects of the work. This includes but is not limited to such items as site, materials, equipment, supplies, cleaning, and electrical components and work, etc.

V.15 RECORD DOCUMENTS

Engineer shall provide to the Contractor, one complete set of Contract Documents to be used by the Contractor for the purpose of documenting as constructed information for all elements of Work. These as constructed documents generated by the Contractor may then be used by the Engineer in preparing Record Drawings for the Project.

The Contractor shall make legible and accurate notations to the drawings to indicate changes. All changes shall be recorded as construction progresses and within 24 hours of a change being made. Work shall not be covered, concealed, or otherwise made inaccessible until all information has been recorded by the Contractor. Record Documents shall be maintained in a clean, dry, legible, and orderly fashion and shall not be used for construction purposes. Record Documents shall be clearly labeled: “Record Documents, Not for Construction”.

Changes shall be recorded in erasable colored pencil. Alternate colors may be used to emphasize different types of changes. Changes shall be “clouded” to draw attention to effected area(s). Changes shall be legibly marked and shall include descriptions when necessary. Changes shall be dated and initialed by the Contractor.

Record Documents shall be made available to the Engineer or the Owner at all times. The Engineer may review and approve, on a monthly basis, the Record Documents. Portions of the Record Documents determined to be incomplete or incorrect by the Engineer, shall be corrected by the Contractor before monthly Pay Requests are approved. Before requesting final payment, Contractor shall provide Engineer with a completed set of clean, fully legible Record Documents. Record Documents may be reviewed by Engineer for clarity and completeness; however, the Contractor has sole responsibility for the correctness, and

accuracy of the Record Documents. The Owner may withhold final payment until the Record Documents are complete, accurate, and have met all other requirements specified herein.

Record Documents required by this Section shall be in addition to any other Record/As Built requirements contained elsewhere in the Plans and/or Specifications.

SECTION VI
CONTROL OF MATERIALS

VI.1 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS

All materials or equipment used on the Work shall meet the requirements of the Specifications. The source of supply of the materials or equipment shall be approved by the Engineer before delivery is started. If it is found that products from a source are unacceptable, the Contractor shall furnish materials from other sources.

The Contractor shall warrant to the Owner and the Engineer that, unless otherwise specified, all materials and equipment furnished under this Contract shall be new, and both workmanship and materials shall be of good quality, free of faults and defects, and in conformance with the Contract Documents. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials. In selecting and/or approving equipment for installation in the Project, neither the Owner nor Engineer assume responsibility for injury or claims resulting from failure of the equipment to comply with applicable federal, state, and local safety codes or requirements, or the safety requirements of a recognized agency, or failure due to faulty design concepts, or defective workmanship and materials. Material and/or equipment damaged by any cause during the construction period shall be subject to rejection by the Engineer; reconditioning and/or repairing material and/or equipment is not acceptable.

VI.2 SAMPLES, TESTS FOR SPECIFICATION COMPLIANCE

All materials shall be approved by the Engineer. Materials used without prior approval shall be considered unauthorized and will not be paid for. Tests for suspected faulty materials, work, or tests not mentioned in this Section shall be conducted by an independent testing laboratory approved by the Engineer. Such tests shall be paid for by the Contractor. Certified copies in duplicate of each test shall promptly be furnished the Engineer. Laboratory testing common to the project shall be paid by the Owner at a laboratory of his choice, unless specified otherwise. These tests include concrete breaks, inspection, soil tests, and liner tests as defined in these Specifications.

The Contractor shall cooperate, coordinate, and assist the Engineer with all testing the Owner deems appropriate for the project. Make appropriate arrangements with the Engineer and provide safe access, etc., so that all such testing can be preformed. There shall be no extra time or payment associated with this work. If retesting is necessary due to not passing on the first test, all costs associated with retesting shall be the responsibility of the Contractor.

Acceptance of materials by the Engineer shall not relieve the Vendor, or the Contractor from repairing or replacing defective materials. Any materials rejected at the site

of the work shall be removed from the premises by the Contractor in accordance with Articles V.12 and V.13.

VI.3 SALVAGE MATERIALS AND UNUSED EQUIPMENT AND MATERIALS

All existing materials and/or equipment removed and not required to be reused or relocated remains the property of the Owner. These materials and equipment will be stored orderly at the job site in accordance with the Owner's instructions. All unusable items as determined by the Owner will be disposed by the Contractor as excess materials.

All unused construction materials or equipment remaining at completion of the project will remain the property of the Contractor unless the Owner has purchased unused property through the Contract and has rightful ownership or agrees to purchase or accept ownership of materials or equipment. Making payment of stored materials throughout the job does not constitute the Owner's willingness to purchase unused materials or equipment at the end of the Work.

VI.4 STORAGE OF MATERIALS AND/OR EQUIPMENT

Materials and/or equipment to be incorporated in the work shall be properly housed or otherwise protected from corrosion and damage so as to ensure the preservation of their finish, quality, and fitness for the work. Where considered necessary to secure proper protection, the materials shall be placed on racks, platforms, or hard clean surfaces not subject to surface drainage. Factory finished items shall be stored above ground, covered, individually sealed, or housed indoors as required. Equipment shall as a minimum be stored and maintained in accordance with the manufacturer's recommendations, or in accordance with the Plans and Specifications if those storage requirements are more stringent. Equipment that has been installed but not being operated by the Owner shall be stored and protected by the Contractor in accordance with the recommendations of the manufacturer and plans and specifications. The Contractor shall be aware of the potential difficulties involved in the storage of equipment fitted with bearings which may suffer damage from a long period of idleness, and shall take such precautionary measures as may be required to preserve the life expectancy of the bearings. Materials not properly stored, housed and maintained in condition for service as intended will be deducted from the stored materials and will not be incorporated in the work. Full instructions on storage should be provided with the shop drawings (See Sections V.5 and V.6). The Contractor shall be solely responsible for equipment that is damaged due to flooding or improper storage.

No equipment (including but not limited to process equipment, electrical equipment, HVAC equipment, or mechanical equipment, etc.) shall be stored in a location where it may be flooded or otherwise unintentionally submerged, etc.

Stored materials and equipment shall be located and arranged so as to facilitate observation. When the Contractor desires to accept delivery of material or equipment which cannot be accommodated or housed on the site of the work he may, but only with the permission of the Owner, store such material and/or equipment in an insured and bonded warehouse within a 60 mile radius of the project site. Any agreement for rental of such storage space by the Contractor shall contain a provision that the material and/or equipment

thus stored shall not be subject to a lien for payment of storage. A certificate of insurance shall be furnished. The storage facility shall be climate-controlled, if appropriate. The Owner shall be protected against loss of or damage to such stored equipment by the terms and endorsements of the Contractor's insurance policies.

The Contractor shall develop an inventory of stored equipment showing the maintenance required during storage and containing a place for the Contractor to sign off when the maintenance is performed. The maintenance provided shall be stated, dated, and signed by the person performing the work. The Contractor shall notify the Engineer's representative sufficiently prior to performing the work to allow the representative to accompany the Contractor during the maintenance. The Stored Equipment Maintenance Inventory shall be submitted to the Engineer with each monthly pay request. If there is no pay request during a month, the Contractor shall submit the updated inventory monthly until project acceptable.

VI.5 U.S. PRODUCTS PREFERENCE

The successful Bidder (Contractor) shall comply with ALA. CODE §39-3-1 (1975), shall agree to utilize in the execution of the Project, materials, supplies and products manufactured, mined, processed or otherwise produced in the United States or its territories, if the same are available at reasonable and competitive prices and not contrary to any sole source specifications. It is further stipulated that a breach of the foregoing provision of this agreement by the Contractor in failing to utilize domestic products shall result in a downward adjustment in the Contract price equal to any realized savings or benefit to the Contractor.

VI.6 USE OF DOMESTIC STEEL

The attention of all Bidders and that of the successful Bidder (Contractor) is drawn to ALA.CODE §39-3-4 (1975), requiring the use of steel produced within the United States for municipal construction projects when specifications in the construction contract require the use of steel and do not limit its supply to a sole source. This provision is subject to waiver if the procurement of domestic steel products becomes impractical as a result of national emergency, national strike or other causes. Violations of the use of domestic steel requirements shall result in a downward adjustment in the Contact price to equal any savings or benefit to the Contractor.

SECTION VII
LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

VII.1 LAWS TO BE OBSERVED

The Contractor shall comply with all laws, regulations, and permits. The Contractor and his Surety shall indemnify and save harmless the Owner and the Engineer and all of their representatives or agents against any claim or liability arising from or based on the violation of any law, regulation, or permit requirement, whether by himself, his employees, or his subcontractors. The Contractor agrees to indemnify and/or reimburse the Owner for any fines, violations, charges, suits, or sums of money imposed by the Alabama Department of Environmental Management (ADEM), Environmental Protection Agency (EPA), or any agency overseeing and/or issuing regulation, law or permit for any violation arising out of the

work by the Contractor pursuant to this agreement. The Contractor agrees to reimburse the Owner for all costs the Owner incurs due to the Contractor's non-compliance or alleged non-compliance with laws, regulations, and permits.

VII.2 PERMITS AND LICENSES

The Owner will procure general permits such as those required by highway departments or other utilities to allow the proposed facilities to be installed on public rights of way or privately owned rights of way; however, the Contractor shall procure all other required permits and licenses, pay all royalties and fees, and give all notices necessary. Special or supplemental permits for the Contractor's means and methods of construction such as blasting permits shall be the full responsibility of the Contractor. An exception for blasting permits is discussed in Section VII.13.

Requirements from permits acquired by the Owner for construction will be strictly adhered to by the Contractor with all stipulations within the Contractor's control being fulfilled. The Contractor shall be solely responsible for satisfying all requirements and costs of all permits and licenses acquired by the Owner regardless of whether such requirements are imposed on the Owner or are imposed directly on the Contractor. This includes, but is not limited to, any permit issued by utilities, railroad, streets or highways, governmental agencies, or regulatory agencies, etc. This shall include, but by no means be limited to, such requirements as bonds, insurance, indemnification, flagmen, and traffic control, etc. The Contractor shall obtain special or supplemental permits required by agencies to complete the work in accordance with Section VII.13. The Contractor shall indemnify the Owner and Engineer in accordance with Section VII.1.

VII.3 PATENTED DEVICES, MATERIALS AND PROCESSES

If the Contractor uses any design, device, material, or process covered by letters, patent or copyright, the Contractor and the Surety shall indemnify and save harmless the Owner and the Engineer and all their authorized representatives from any suits, or claims for infringement.

VII.4 PUBLIC CONVENIENCE AND SAFETY

The Contractor is required to conduct his work as to ensure the least possible obstruction to traffic, to ensure the least possible inconvenience to the general public, businesses, and the residents in the vicinity of the work, and to ensure the protection of persons and property. Maintain continuous access to businesses (during and near to hours of operation) and hospitals, etc. No disturbing noise will be allowed particularly in residential areas between the hours of 9:00 p.m. until 7:30 a.m. unless an emergency occurs. Permission of the proper authority is required before any road or street is closed to the public. The maintenance of continuous accessibility of fire-fighting equipment to fire hydrants and to such areas as are necessary for the provision of fire protection is a requirement of the Fire Department or the authority having jurisdiction. The provision of temporary measures as required to ensure the safe use of sidewalks and streets by the public is the responsibility of the Contractor. The proper functioning of all gutters, sewer inlets, drainage ditches and irrigation ditches is to be ensured by constant clean-up along with the work and by provision of

temporary facilities where required for the maintenance of natural surface drainage. The implementation of all such maintenance measures and safety precautions is the responsibility of the Contractor. Respond promptly and appropriately to all complaints. Coordinate and cooperate with affected property Owners and keep them advised of work schedules and activities.

No road, sidewalk or vehicle path shall be closed by the Contractor except by permission of the Engineer, and while closed the Contractor shall maintain traffic through or around the Work. The Contractor shall notify emergency agencies and the Engineer before the starting of construction of any situations that might inconvenience or endanger traffic. All right-of-ways shall be kept continuously open and maintained in passable and safe condition. The Contractor shall clean-up and place streets back in service as soon as possible. Paving shall be patched as soon as possible. Use cold-mix asphalt as temporary patch if required by plans or specifications, or if helpful in continuously maintaining public safety or convenience.

The convenience of the general public and of residents along the road or other travelways shall be provided for in a satisfactory manner. Where roads or streets are not available for use as detours, traffic shall be permitted to pass through the Work. The traveling public shall have precedence over Contractor's vehicles, and shall not be delayed for the convenience of the Contractor. The Contractor shall provide flagmen whose sole duties shall consist of controlling the movement of public traffic. No additional charges will be paid for traffic routing or control.

The Contractor shall provide and maintain temporary roads to provide access to the Work, driveways, houses or buildings affected by the work. Temporary bridges for pedestrians shall be provided over surfacing, pavement, sidewalks or muddy areas.

The provision by the Contractor of warning signs, warning lights, barricades and watchmen is subject to the requirements of "Safety and Health Regulations for Construction" of the Occupational Safety and Health Administration, U. S. Government Department of Labor; the State "Manual on Uniform Traffic Control Devices for Streets and Highways"; and other authorities having jurisdiction in the areas and traffic control. The Contractor is solely responsible for satisfying all safety and traffic control requirements of authorities concerned with or affected by this work. The Contractor shall provide, install, and continuously maintain all traffic control and other safety features, etc. as may be desirable for the protection, safety, and convenience of the public. The Contractor is solely and fully responsible for protecting the public. This responsibility applies both during working hours and non-working hours, 7 days per week, for the entire duration of the project.

VII.5 PROTECTION AND RESTORATION OF PROPERTY, STREETS AND LANDSCAPE

The Contractor shall not enter upon private property without obtaining permission from the owners and lessees. The Contractor shall be responsible for the preservation of all public and private property. The Contractor will obtain necessary information of existing utilities, and shall give notice to the owners or authorities at least forty-eight (48) hours before his operations will affect such property. The Contractor shall not interfere with the operation of utilities. The Contractor shall at his own expense, take necessary precautions to avoid interruption of service or damage.

Work under this Contract shall include the restoration of all paved areas and macadamized roadways to their original condition at his own expense. If the Contractor fails to restore disturbed areas promptly, the Owner, after giving three (3) days' written notice, may have the pavement restored and deduct cost from the payment due the Contractor. However, any such action or lack of action, by the Owner shall not relieve the Contractor of any of his obligations under this Contract, including but not limited to safety. The Contractor must conform to the prevailing State Highway Code and Railroad Company requirements at his own expense. The Contractor shall maintain roads, streets, and highways affected by his work in a safe condition at all times.

When damage or injury is done to public or private property by the Contractor, he shall repair such damage or injury so that it is equal or better condition to the property before damage.

VII.6 INDEMNIFICATION

To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Engineer, Engineer's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss of expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including loss of use resulting there from, but only to the extent caused in whole or in part by negligent acts or omissions of the Contractor, a Subcontractor, equipment or material supplier or manufacturer, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder.

Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described herein.

In claims against any person or entity indemnified under this Section by an employee of the Contractor, a Subcontractor, equipment or material supplier or manufacturer, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Section shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor, Subcontractor, or equipment or material supplier or manufacturer under workmen's compensation acts, disability benefit acts or other employee benefit acts.

The obligations of the Contractor under this Section shall not extend to the liability arising out of active negligence, sole negligence, willful misconduct of, or for defects in design furnished by, the Owner and Engineer, their agents, consultants, and/or employees provided that such negligence or defect are the primary cause of the injury or damage.

The Owner may retain money due for actions or claims for injuries or damages until settled. The Owner and/or the Engineer, or their representatives shall not be liable to the Contractor for damages or delays resulting from work by third parties or by injunctions or other restraining orders obtained by third parties.

VII.7 INSURANCE

All bidders shall have their insurance provider thoroughly review all insurance requirements well prior to Bid opening to ensure the Contractor includes sufficient monies to meet all insurance requirements. This review by the insurance provider shall be detailed and complete. The review shall determine pricing and availability of all specific insurance requirements. This review shall determine all additional and special insurance that the Contractor must acquire to be in full and complete compliance with all insurance requirements. Prior to bidding, all bidders shall furnish to their insurance providers complete copies of all insurance requirements contained in the General Specifications Section of these Contract Documents, all insurance requirements in other sections of the documents (including but not limited to the Special Provisions and Supplemental General Conditions), and those required by permits, etc. See the Special Provisions for additional insurance requirements.

(a) General: The Contractor shall purchase and maintain such insurance as will protect him from claims set forth below which may arise from the Contractor's execution of the work, whether execution be by the Contractor, any Subcontractor, any one directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. The Contractor and/or any subcontractors waive subrogation as to the Owner, its officers, agents, employees, consultants, and Engineer (Municipal Consultants, Inc.). This waiver of subrogation shall apply to all policies, including but not limited to, General Liability, Automobile, All-Risk (Builder's Risk), Worker's Compensation, and Umbrella Insurance. This shall be stated as such in all policies and on all certificates. The full aggregate limits shall apply per job or contract. This shall be stated as such in all policies and on all certificates. Insurance for Contractor or any of its agents, employees or subcontractors shall cover both on-site and off-site operations under this Contract and insurance coverage shall extend to any motor vehicles or other related equipment, irrespective of whether the same is owned, non-owned or hired. Coverages shall include, but not be limited to:

(1) Claims under worker's compensation, disability benefit and other similar employee benefit acts;
(2) Claims for damages because of bodily injury, occupational sickness or disease, or death of employees;
(3) Claims for damages because of bodily injury, sickness or disease, or death of any person other than employees;

(4) Claims for damages insured by usual personal injury liability coverage which are sustained (i) by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor, or (ii) by any other person;
(5) Claims for damages because of injury, destruction, or loss of use of tangible property; and
(6) Where work under this Contract includes any exposure to navigable waterways and/or adjoining water areas, the Contractor shall obtain

insurance coverage to include Federal Longshoreman's and Harborworker's Act (USL & H) and Federal Jones Act or other insurance required by other applicable law or regulation.

The Contractor's insurance shall cover both On-going Operations and Completed Operations related to the project. Coverage for On-going Operations shall be in effect from the beginning date of the Contract until final payment is made to the Contractor by the Owner. Coverage for Completed Operations shall be in effect for a minimum period of one (1) year after final payment is made to the Contractor by the Owner and/or any time the Contractor is working on the project after final payment has been made to the Contractor by the Owner. There shall be no interruption of insurance coverage during the transition from On-going Operations to Completed Operations.

Maintenance of proper insurance coverage is a material element of the Contract. Failure to maintain, renew and/or provide evidence of renewal may be treated by the Owner as a material breach of Contract. The lack of insurance does not negate the Contractor's obligations under this Contract including, but not limited to, indemnification of the Owner and Engineer from any damages resulting from the Contractor's failure to obtain, maintain or renew the minimum insurance policies and endorsements required herein.

(b) Certificate of Insurance: Original Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to the Owner's execution of the Contract. These Certificates shall contain the following:

(1) Unconditional provision that coverage afforded under the policies will not be canceled unless at least thirty (30) days prior Written Notice has been given to the Owner and Engineer.

(2) The Contractor's and any subcontractor's general liability, automobile liability insurance, and umbrella (and/or excess) insurance shall endorse the Owner, its officers, agents, employees, consultants and Municipal Consultants, Inc., as additional insureds for any claims arising out of work performed under this Contract. Umbrella (and/or excess) liability shall follow form to the underlying insurance. All insurance shall be primary without contribution from any insurance or deductibles available to the additional insureds.

(3) There shall be a statement for all policies that the Contractor and any subcontractor waive subrogation as to the Owner, its officers, agents, employees, consultants and Municipal Consultants, Inc.

(4) There shall be a statement that full aggregate limits apply per job or contract.

(5) Confirmation of coverage of x, c, and u.

(c) Policy Endorsements: Copies of the Contractor's automatic policy endorsements or original policy endorsements acceptable to the Owner shall be filed with the Owner prior to the Owner's execution of the Contract. All policy endorsements shall endorse

the Owner, its officers, agents, employees, consultants and Municipal Consultants, Inc. and these parties/organizations shall be listed as such in the Endorsement Schedule included on the endorsements. The policy number shall be listed in all Schedules. Policy endorsements for additional insureds and waivers of subrogation shall be for both On-going and Completed Operations as defined above. Automatic and/or original endorsements for additional insureds and waivers of subrogation for ALL policies (i.e. General Liability, Automobile Liability, All Risk (Builder's risk), Umbrella Insurance, Workman's Compensation, etc.) shall be as broad as (i.e. similarly worded to) the following General Liability endorsements and be acceptable to the Owner:

(1) Additional Insured Endorsements - ISO's CG 20 10 11/85 or the combination of CG 20 10 10/01 and CG 20 37 10/01.

(2) Waivers of Subrogation Endorsements - ISO's CG 24 04 10 93 or CG 24 04 05 09.

(d) Liability Insurance: The Contractor shall procure and maintain at the Contractor's expense, during the work, liability insurance as hereinafter specified:

(1) Contractor's General Public Liability and Property Damage Insurance including vehicle coverage issued to the Contractor and protecting the Contractor from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising in connection with any operations under the Contract Documents, whether such operations be by the Contractor or by any Subcontractor employed by the Contractor. Insurance shall be written with a limit of liability of not less than $1,000,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident, and a limit of liability of not less than $2,000,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than $1,000,000 for all property damage sustained by any one person in any one accident and a limit of liability of not less than $2,000,000 aggregate for property damage sustained by two or more persons in any one accident. The insurance shall provide full coverage for x, c, and u.

(2) The Contractor shall acquire and maintain, if applicable, Fire and Extended Coverage Insurance upon the Project to the full insurable value thereof for the benefit of the Owner, the Contractor, and Subcontractors as their interest may appear. This provision shall in no way release the Contractor or Contractor's surety from obligations under the Contract Documents to fully complete the Project.

(e) Worker's Compensation Insurance: The Contractor shall procure and maintain, at the Contractor's own expense, during the Contract Time, in accordance with the provisions of the laws of the state in which the Work is performed, Workman's Compensation Insurance,

including occupational disease provisions, for all of the Contractor's employees at the site of the Project and in case any Work is sublet, the Contractor shall require such Subcontractor similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in hazardous work under this Contract at the site of the project is not protected under Workmen's Compensation statute, the Contractor shall provide, and shall cause each Subcontractor to provide, adequate and suitable Insurance for the protection of its employees not otherwise protected.

(f) "All Risk" Insurance: The Contractor shall secure, if applicable, "All Risk" type Builder's Risk Insurance for Work to be performed. Unless specifically authorized by the Owner, the amount of such insurance shall not be less than 100% of the insurable value. The policy shall cover not less than the losses due to fire, explosion, hail, lightning, vandalism, earthquake, malicious mischief, wind, collapse, riot, aircraft, water damage (other than caused by flood) and smoke during the Contract Time, and until the Work is accepted by the Owner and final payment has been made. The "All Risk" policy shall include testing and start-up and allow for utilization of the Work by the Owner. The policy shall name as additional insured the Owner, its officers, agents, employees, consultants, and Engineer (Municipal Consultants, Inc.). Flood insurance and all Additional Insured and Waiver of Subrogation Endorsements must be carried in "All Risk Policy" or by separate policy.

(g) Consistent with the requirement for all insurance coverages provided by the Contractor, the Contractor shall notify the Owner and Engineer in writing 30 days prior to the expiration of the Contractor's Builder's Risk Insurance and Flood Insurance. The Contractor shall maintain the specified Builder's Risk Insurance and Flood Insurance continuously for the duration of the project and until the Work has been accepted by the Owner. In no case, shall the Contractor anticipate acceptance by the Owner when planning for discontinuance of the required Builder's Risk Insurance or Flood Insurance.

(h) Umbrella Excess Liability Over Primary Insurance: The Contractor shall take out and maintain during the term of this Contract, and any extensions thereof, Umbrella Excess Liability Insurance. The minimum limits of coverage shall be $5,000,000 aggregate. The coverage shall be over the required general liability insurance and automobile liability insurance as a minimum. There shall be no gaps or sublimit deductibles, etc. The Owner, its officers, agents, employees, consultants, and Engineer (Municipal Consultants, Inc.) shall be named as additional insureds in all umbrella policies.

(i) Protection of the Owner and Engineers: The Owner, its officers, agents, employees, consultants, and Engineer (Municipal Consultants, Inc.) shall be named as additional insureds in all insurance policies carried by the Contractor or that of his subcontractors for this Contract. If the Contractor or his Surety cannot name the Owner, its officers, agents, employees, consultants, and Engineer (Municipal Consultants, Inc.) as additional insureds in any policies providing the coverage above, the Contractor shall purchase and maintain Owner's Protective Liability Insurance (OCP Policy) in the amount of not less than $5,000,000 and the named insured shall be the Owner, its officers, agents, employees, consultants, and Engineer (Municipal Consultants, Inc.) during the life of this agreement. The coverage shall remain in full effect for both On-going Operations and Completed Operations as described above in Section VII.7(a). The insurance shall protect the Owner, its officers,

agents, employees, consultants, and Engineer (Municipal Consultants, Inc.) from any claim or loss arising from any act or failure to act on the part of the Contractor or his Subcontractors. All insurance shall be primary without contribution from any insurance or deductibles available to the additional insureds and OCP policy holders.

(j) Miscellaneous Insurance: Provide all insurance required by railroads, other utilities, etc. Provide, on the behalf of the Owner, all such insurance required of the Owner by railroad, other utilities, etc.

(k) Neither the setting of insurance limits or requirements nor the acceptance or approval of the same by the Owner imply or represent that the limits or the insurance carrier is sufficient or that such insurance actually has been obtained, that being the responsibility of the Contractor. These insurance requirements shall be considered as a minimum. The Contractor shall consult with his insurance agent to determine whatever greater levels of insurance may be desired. The provision of insurance shall in no way limit the Contractor's responsibility under the Contract nor limit his responsibility to indemnify and hold harmless the Owner and Engineer.

(l) See the Special Provisions for additional insurance requirements.

VII.8 CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES

The Contractor shall fully cooperate with private and public utilities in accordance with Section V.7. Where the Contractor's operations are adjacent to properties or utilities, work shall not be started until arrangements for their protection have been made. The Contractor shall be solely responsible to the Owners and Operators of properties or utilities for injuries or damages. If required by the Owner, he shall furnish special Protective Public Liability and Property Damage Insurance in an amount specified. The Contractor shall co-operate with the owners of utilities if any of their facilities are removed or rearranged. The Contractor shall be responsible for costs associated with this item.

In the event of interruption to utility services or potential damage to the utility caused by the Contractor, the Contractor shall promptly notify the proper authority. He shall cooperate in the restoration of service promptly. The Contractor shall be responsible for all costs associated with this item.

VII.9 PERSONAL LIABILITY

There shall be no liability upon the Owner or Engineers, or their authorized representatives, or employees, either personally or as officials of the Owner or engineering company.

VII.10 NO WAIVER OF LEGAL RIGHTS

The Owner or the Engineer shall not be precluded from showing the true and correct amount and character of the Work performed and materials furnished by the Contractor by any measurement, estimate, or certificate incorrectly made during the course of the Work. The Engineer shall have the right to reject any part of the Work or materials should it be found to be inconsistent with the Contract. The Owner shall not be precluded from recovering from the Contractor and his surety damages for the Contractor's failure to comply with the terms of

the Contract. Neither the inspection by the Owner or the Engineer or any of their officers, employees, agents, or subconsultants, nor any order by the Owner for payment of money, nor any payment for, or acceptance of, the whole or any part of the Project by the Owner or Engineer, nor any extension of time or change order, nor any possession taken by the Owner or its employees, shall operate as a waiver of any provision of this Contract, or any power herein reserved to the Owner, or any right to damages, nor shall any waiver of any breach in this Contract be held to be waiver of any other or subsequent breach. Acceptance or final payment shall not be final and conclusive with regards to rejected Work at any time before or during the warranty period; to latent defects; fraud or such gross mistakes as may amount to fraud; or as regards to the Owner's rights under any warranty.

VII.11 SAFETY AND CONSTRUCTION METHODS

The Contractor at his own expense, shall maintain project and public safety. The Contractor agrees to hold the Owner and Engineers harmless and indemnify them from all claims for damages resulting from construction of the project by the Contractor or Subcontractors, his agents or employees. The Owner and/or Engineers are not responsible for providing the Contractor a safe place to work nor for the safety of any equipment, procedure or material used on construction or incorporated into the work. The Contractor shall be solely responsible for the means and methods of construction and for safety.

The Contract or Owner may sometimes impose limitations or other requirements on the Contractor's sequence of construction. Such limitations or requirements do not constitute control of the Contractor's means or methods, nor relieve the Contractor's responsibility for safety.

When the use of explosives is necessary, the Contractor shall use care to prevent damages to life or property and shall comply with all rules and regulations of the governing authorities. Notwithstanding any other provisions contained in these Contract Documents, and notwithstanding whether any claim alleges negligence, intention or willful injury, absolute liability or any other theory of recovery, Contractor and his surety shall indemnify and hold harmless Owner, its directors, agents and employees, engineer, engineer's consultants, agents and employees, or any of them from and against all claims, damages, losses and expenses, including, but not limited to, attorney's fees, arising out of or resulting from blasting activities, the use, transportation, or storage of explosives generally or any other dangerous material or ultra-hazardous activity. If no local laws or ordinances apply, storage of explosives shall not be closer than 1,000 feet from the road, street, any building or area of public use. Fuel tanks, systems and appurtenances shall be stored and utilized in a way to comply with OSHA and regulatory agencies.

The Contractor, in the prosecution of his work under the Contract, is bound by the requirements of "Safety and Health Regulations for Construction" of the Occupational Safety and Health Administration, U. S. Government Department of Labor, and of other authorities having jurisdiction in safety matters.

Under the terms and conditions of this Contract, the Engineer shall not act as Safety Engineer or Safety Supervisor, since such responsibility remains solely with the Contractor. The Engineer shall not be responsible for establishing safety practices or for prescribing safety measures for the Contractor and his methods of construction.

The Contractor is solely and completely responsible for conditions of the job site, including safety of all persons and property affected directly or indirectly by his operations during the performance of the work; and this requirement is not limited in application to normal working hours, but applies continuously twenty-four (24) hours per day until acceptance of the work by the Owner, and thereafter shall be subject to the terms and conditions of the Guaranty.

The duty of the Engineer is to review the work in order to determine its acceptability in accordance with the Specifications and to conduct construction review of the Contractor's performance for the benefit of the Owner. This shall not be construed as a duty to review the adequacy of the Contractor's safety measures or construction methods on or near the construction site and/or to direct the actions of the Contractor's employees in the performance of the work as such duties are not included among the responsibilities of the Engineer.

VII.12 SANITARY PROVISIONS

The Contractor is responsible for the maintenance of proper sanitary conditions in the area of his work. The provision and maintenance of such sanitary accommodations as may be required for the use of his employees and of his subcontractor's employees is subject to the Rules and Regulations of the State Board of Health and to all local Codes and Ordinances.

VII.13 EXISTING CONSTRUCTION AND FACILITIES

Where construction work under this Contract is adjacent to or crosses highways, railroads, streets, roads, access facilities, or utilities under the jurisdiction of State, County, City or other public agency, public utility or private entity, the Contractor is required to furnish such bond (cash or surety as required), insurance agreement or satisfy any other permit conditions as may be required before executing such construction work. A copy of the bond or insurance agreement (when required) must be filed with the Owner before any work is done. The Contractor is responsible for his means and methods of construction to satisfy the permitting authority and to obtain the desired result as shown within the Contract Documents.

Although the Owner will procure general permits such as those required by highway departments or other utilities to allow the proposed facilities to be installed on public rights of way or privately owned rights of way, it is the responsibility of the Contractor to obtain special or supplemental permits for his means and methods of construction such as blasting permits. However, if and only if the rules and regulations of the agency having jurisdiction over the work will not allow the Contractor or his blasting subcontractor to obtain a blasting permit (but instead require the Owner to obtain the blasting permit as a formality), then the Owner will not withhold from assisting the Contractor with submitting a reasonable blasting permit application (in the Owner's name) provided that the following minimum requirements are understood/met to the full satisfaction of the Owner:

(1) The Owner nor the Engineer in no way suggests or implies that a blasting permit can be obtained for the entire project or any part of the project in the Contractor's name or the Owner's name. The Contractor shall have reviewed the project in its entirety and satisfied himself during bid time that his proposed

means and methods (i.e. blasting) are reasonable and acceptable to the agency having jurisdiction over the work.

(2) The Contractor shall provide written documentation from the agency having jurisdiction over the work stating that the blasting permit cannot be obtained in the Contractor's (or his subcontractor's) name, but instead must be obtained in the Owner's name as a formality.

(3) The request for a blasting permit shall be considered reasonable to the Owner in all respects.

(4) The Contractor, on behalf of the Owner, shall comply with and adhere to all stipulations set forth in the blasting permit agreement and any other requirements set forth by the permitting agency.

(5) Notwithstanding any other provisions contained in these Contract Documents, and notwithstanding whether any claim alleges negligence, intention or willful injury, absolute liability or any other theory of recovery, Contractor shall indemnify and hold harmless Owner, its directors, agents and employees, engineer, engineer's consultants, agents and employees, or any of them from and against all claims, damages, losses and expenses, including, but not limited to, attorney's fees, arising out of or resulting from blasting activities, the use, transportation, or storage of explosives generally or any other dangerous material or ultra-hazardous activity.

(6) The Contractor shall be fully responsible for preparing and providing all permit applications, all necessary documentation, maps, sketches, additional insurance, bonds, indemnifications, etc. as may be required by the permitting agency and/or Owner to obtain the blasting permit. If required by the Owner, the Contractor shall furnish special Protective Public Liability and Property Damage Insurance in an amount specified.

(7) The Contractor shall be fully responsible for all costs resulting from special or supplemental permits for his means and methods of construction such as blasting permits.

(8) The Contractor shall execute any supplemental agreements or amendments to the Contract Documents that may be required to fully satisfy the Owner regarding the Contractor's complete responsibility and overall liability for the blasting operations.

(9) The Contractor shall perform pre-blast surveys, seismograph testing, and any other activity required to ensure no damage to surrounding property. When

required by the Owner, the Contractor shall submit a complete blasting plan sealed by a professional engineer in the state where the work is to be performed.

(10) The Contractor shall only employ experienced blasting professionals to perform the pre-blast surveys, seismograph testing, blasting plans, and all other activities associated with the blasting operations. The Contractor shall provide the resumes of the companies and individuals actually performing the pre-blasting and blasting activities when requested by the Owner.

(11) The Contractor shall be fully responsible for the replacement and/or repair of all existing construction, utilities, or facilities damaged in the execution of work under this Contract.

(12) The Contractor shall furnish releases from all authorities affected by the work before final acceptance of the work under this Contract.

(13) The coordination, timing, and the overall schedule of the permitting process shall be the full responsibility of the Contractor to ensure all work is completed within the allotted Contract Time set forth in the Special Provisions. Any permitting activities requiring the Owner's participation shall be coordinated well in advance by the Contractor and sufficient time shall be allotted for such activities.

SECTION VIII
PROSECUTION AND PROGRESS

VIII.1 SUBLETTING OR ASSIGNING OF CONTRACT

The Contractor shall perform the Contract under his direction and responsibility. A Subcontractor shall be recognized only as an employee or agent of the Contractor and his removal may be required by the Owner.

VIII.2 PROSECUTION OF WORK

The Contractor shall begin the Work under the Contract within ten (10) calendar days after issuance of the Notice to Proceed. He shall give the Engineers notice to start work at least seventy-two (72) hours before beginning work. The Contractor shall notify the Engineers twenty-four (24) hours before he expects to undertake particular construction or testing.

Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work. The Contractor shall employ an ample force and provide adequate construction equipment to insure its completion within the Contract time. The Contractor shall properly plan, coordinate, and schedule all work to insure completion within the Contract Time.

All work shall receive the personal attention of the Contractor or of a competent superintendent who shall have authority to act for him. The Contractor shall notify the Engineers of the person authorized to act as superintendent. The Contractor shall have his superintendent on site at all times when work is being performed. The superintendent shall be a full time employee of the general contractor and not of a subcontractor. Any employee of the Contractor or Subcontractor found by the Owner to be incompetent, shall be dismissed from the work.

The Contractor shall utilize the same suppliers, equipment manufacturers, and subcontractors as he listed in the bidding documents that he submitted with his bid. The Contractor shall be fully responsible for all work and safety practices of all his subcontractors.

To coordinate work to be accomplished with affected entities, a progress meeting will be held periodically at the project site. The progress meeting will be held on Fridays and will be attended by the Engineer's inspector, Owner's representative, Contractor's superintendent, Contractor's project manager from his home office, affected subcontractor(s), and other parties who may be invited. The Owner reserves the right to establish the time of the meeting, change frequency of meetings, change meeting days, or to cancel the meeting.

Prior to starting up any equipment, the Contractor shall insure that all tanks, piping, and equipment, etc., are thoroughly cleaned of any debris or substances that may cause damage. The Contractor shall be fully responsible for all startups. He shall insure that all operations are in accordance with the manufacturer's recommendations. If certain equipment is not to be operated or is to operate only under special procedures, the Contractor shall be fully responsible for insuring that such procedures are carefully followed. The Contractor shall lock out (with his own locks) and tag out breakers, controls, equipment, valves, and gates, etc., where needed to prevent unintended operation by others. The Contractor shall clearly communicate any special operating instructions to the Owner and Engineer in writing.

Color Selection Conference: Prior to the selection by the Owner of any colors (including but not limited to colors of paint, block, brick, mortar, louvers, soffit, gutters, roofing, doors, windows, furniture, counters, cabinets, molding, lighting, and all other materials or equipment to be provided by the Contractor), the Contractor shall furnish triplicate samples of all colors to be selected. After review of the colors by the Owner and Engineer, a conference shall be held to be attended by the Contractor, Owner, and Engineer for the Owner to make his selections. One of the samples shall be retained by the Owner, one by the Engineer, and the third by the Contractor.

The Contractor shall cooperate with the Engineer and keep him informed regarding all planned short-term and long-term activities. This includes but is not limited to all startup and testing, etc., issues. The Contractor shall notify the Engineer in advance of all such activities so that the Engineer may observe these if he desires. The Contractor shall provide the Engineer with copies of all manufacturer startup and testing reports, etc.

If changes are made on the project to accommodate the Contractor's requests, the Contractor shall be solely responsible for all associated changes, including but not limited to electrical, control, instrumentation, and SCADA changes. He shall make all such changes at his own expense to maintain the same functionality, flexibility, expandability, and redundancy etc. as provided by the original design. There shall be no extra time awarded due to agreeing to the Contractor's request.

Provide copies of all manufacturer or manufacturer representative, etc. site visit reports, startup reports, test reports, and all other manufacturer or installer reports (including but not limited to troubleshooting or service reports) to the Engineer promptly after the action occurs. If problems occur after startup or during the warranty period, and a service visit or repair, etc., is needed, the Contractor shall promptly provide to both the Engineer and Owner a written report from the service provider describing the problem and the corrective actions taken.

The Contractor shall provide temporary power and temporary utilities as needed to construct the project. All power costs and utility costs, including those for testing, shall be the responsibility of the Contractor until the Owner accepts the project or, at the Owner's discretion, begins beneficial use of the project. Regardless, the Contractor shall be responsible for extra utility costs incurred by or billed to the Owner due to the Contractor's activities or non-compliance with the Contract, or late completion.

It shall be the responsibility solely of the Contractor to properly prosecute all works in a safe manner that fully and continuously protects all people at the site(s) as well as the public. Neither the Owner or the Engineer are responsible for safety. Only the Contractor has the authority to control his work and to implement safe work practices.

VIII.3 TEMPORARY SUSPENSION OF WORK

The Owner shall have the authority to suspend the Work or parts for periods due to unsuitable weather or conditions which he considers unfavorable for satisfactory prosecution of Work, or for failure of the Contractor to perform any provisions of the Contract. No additional compensation shall be paid the Contractor for suspension. Upon suspension, the Work shall be properly protected. The Contractor shall not suspend the Work without the approval of the Owner. The Engineer will be notified twenty-four (24) hours before work is to be resumed.

Should the Work be stopped by an injunction, court restraining order, process or judgment directed to either of the parties hereto, then such delay shall not be charged against the Contract time. The Owner will not be liable to the Contractor for such delay or termination of the Work. If it should become necessary to stop work, the Contractor shall properly store materials and equipment, and properly protect the Work.

VIII.4 USE OF COMPLETED PORTIONS OF THE WORK

The Owner shall have the right to take possession of and use any completed or partially completed portion of the work, notwithstanding that the time for completing the entire work or such portions of the work may not have expired; but such taking possession and use shall not be deemed to be acceptance or substantial completion of any work not completed in accordance with the Plans, Specifications, and Contract Documents.

VIII.5 SATURDAY, SUNDAY, HOLIDAY, AND NIGHT WORK

Work on Saturdays, Sundays, Holidays, or at night may be required when special connections to existing systems are to be made, when new facilities are to be placed in service, when existing facilities are to be taken out of service, when it is more advantageous to the utilities involved, or when an emergency arises in the work schedule. In such cases the

Owner must be notified prior to beginning work. The work should be scheduled well in advance and arrangements made for prosecution of the work with minimum inconvenience to the public. All work required on Saturdays, Sundays, Holidays, or at night shall be so performed without additional expense to the Owner. Maintenance work normally required for protection of persons, or for protection of the work or property, will be permitted at any time. No equipment or system where controls or any other complicated processes are involved shall be place in service on Friday, Saturday, Sunday, observed Holidays, or any day before observed Holidays without the consent of the Owner.

VIII.6 CONSTRUCTION SCHEDULE

The Contractor is instructed to submit to the Engineer, prior to initiating the work but not later than ten (10) days after the execution of the Contract, a schedule of construction operations so planned as to ensure completion of the work within the time limit specified in the Proposal and in the Contract Agreement. The maintenance of such schedule in order to fulfill the terms of the Contract Agreement is the responsibility of the Contractor, and he may employ such reasonable and proper measures, subject to other conditions of these Documents, as he deems to be required to expedite the work and to ensure that it will be fully and satisfactorily completed within the stated time limit. The Contractor shall not be allowed additional compensation for employment of such measures.

The Contractor shall show in the schedule the proposed dates of commencement, completion, and cost (if cost was not delineated in Basis of Payment) of the various subdivisions of work comprising the project, and also shall show in the schedule the estimated amount of each monthly payment (periodic estimate) that will become due to the Contractor as he maintains the progress schedule prepared by him.

VIII.7 AVOIDANCE OF POLLUTION CONTRIBUTION DURING CONSTRUCTION OPERATIONS

The employment of all safeguards and all precautions necessary to minimize contributions of pollution to water courses during the construction operations is the responsibility of the Contractor. The proper performance of excavating and backfilling operations, the interception and diversion of surface drainage around excavated areas or areas having the soil cover disturbed, the construction of temporary terraces or dikes, and the use of silt fences or other silt retaining means will be necessary to prevent concentration of run-off over freshly excavated or backfilled areas and to minimize stream pollution resulting from soil transported in run-off from the construction site. At the conclusion of the work, and after all temporary facilities have been removed, all areas disturbed by construction operations shall be restored to as good a condition as when found, or to condition as may be specified for the particular area. The Contractor shall comply with all ADEM and EPA laws, regulations, guidelines, and permits, etc.

VIII.8 USE OF CHEMICALS

All chemicals used during construction of the project or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reagent, or of other classification, must show approval of EPA, USDA, or FDA, according to the purposes for

which the particular chemical is to be used. Application of all such chemicals and disposal of residues therefrom are dependent upon the instructions and recommendations of the manufacturer's of the respective chemicals.

VIII.9 COMPLETION DATE AND LIQUIDATED DAMAGES

The Owner will issue a Notice to Proceed to the Contractor. The Notice to Proceed will state the date upon which work shall start, and the Contractor will then be allowed the number of calendar days shown in the Special Provisions to totally complete all work. Liquidated Damages shall be as indicated in Special Provisions.

The Contractor shall proceed expeditiously with adequate forces and shall achieve final acceptance of all Work within the Contract Time. If the Contractor is unavoidably and directly delayed in progress of the Work by unpredictable circumstances created by a separate contractor employed by the Owner; by changes ordered in the Work; by unavoidable casualties; or by delay authorized by the Owner, then the Contract Time may be extended by Change Order for such reasonable time as the Owner may determine. The Contractor shall not be entitled to any reparation or compensation on account of such additional time or extension of time. Change to specific work element may only constitute an increase time for that work element and may not necessarily increase the time for the entire project. Time extension will be allowed only if the justifiable delay directly affects the Contractor's schedule for the entire project. In such case, the time extension shall be only for the direct extra time required due to the change itself. No extra time shall be allowed for the Contractor's failure to address the change and perform the extra work in the most expeditious manner possible. In all cases, the Contractor shall properly plan and fully perform his work in a manner to minimize any extra time required. If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated and that weather conditions had an adverse effect on the scheduled construction. (See Special Provisions).

VIII.10 DEFAULT OF CONTRACT

If the Contractor fails to begin the Work within the time provided, or to perform the Work to insure its completion in the time allowed or performs the Work unsuitably, or neglects or refuses to remove materials or perform anew such work as shall be rejected as defective and unsuitable, or if it should persistently or repeatedly refuse or fail to supply enough properly skilled workmen or if it should refuse or fail to make prompt payment to persons supplying labor or materials for the Project under the Contract, or persistently disregard instructions of the Engineer or Owner or fail to observe or perform any provisions of the Contract Documents, or fail or otherwise be guilty of a substantial violation of any provision of the Contract Documents, or discontinues the prosecution of the Work for any other cause whatsoever, or does not carry on the Work for any other cause whatsoever, or does not carry on the Work in an acceptable manner, or becomes insolvent or is adjudicated a bankrupt, or commits any act of bankruptcy or insolvency, or allows any final judgment to stand against him unsatisfied for a period of ten (10) days, the Owner may give notice by registered mail to the Contractor and Surety, of such default. If within ten (10) days after

notice the Contractor does not remedy or the Surety does not take over the work, the Owner shall have authority, without impairing the obligation of the Contract Bonds, to take over the completion of the Work. If the Contractor or Surety does not substantially begin Work and remedy the default after the ten (10) day period, the Owner shall not be obligated to make further payment to the Contractor, including any amounts which may be due for previously performed Work, if he was diligently pursing the Work. The Contractor and his Surety shall be liable for all costs incurred by the Owner including but by no means limited to construction, administration, legal, and engineering, in completing the Work and all liquidated damages. In case the expense incurred by the Owner is less than the sum payable under the Contract, the Contractor or his Surety shall be entitled to receive the difference. In case the expense exceeds the sum payable under the Contract, the Contractor and his Surety shall be liable to the Owner in the amount of the excess. The surety shall assume all warranties required by the Contract Documents whether work is performed by defaulting contractor or contractors which complete the project.

VIII.11 OWNER MAY TERMINATE FOR CONVENIENCE

Upon seven days written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

1) for 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) for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3) for all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects. attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4) for reasonable expenses directly attributable to termination.

CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

VIII.12 PAYMENTS ON ACCOUNT/PAYMENTS WITHHELD/RETAINAGE

Provide a complete and detailed schedule of values to the Engineer in a timely manner prior to the 1st payment request. The schedule of values shall be patterned after the bid items in the Contract but much more detailed. This schedule shall be in a format with breakdowns and amounts, etc., acceptable to the Owner. The schedule of values shall be revised until it is satisfactory to the Owner. The Owner shall not be required to make or continue payments until the Schedule of Values is acceptable to the Owner. The submittal of this schedule of values by the Contractor shall act as a certification by the Contractor that the

values reflect the total cost such that the cost associated with unperformed work items is sufficient to fully complete the work. Provide an explanation with the schedule of values explaining what work is included in each item. The schedule of values and pay request shall be revised whenever it appears that the monies remaining to be paid may not be sufficient to cover the entire cost (including overhead and profit, etc.) of the remaining work. This may result in deduction being made from items previously paid for.

Upon presentation of a verified application for payment, as the Work progresses, the Owner shall make partial payments (generally monthly) to the Contractor for the billable work performed less payments already made and less deductions for any incomplete, unacceptable, or defective work. The Contractor shall include neatly organized backup data and detailed calculations fully supporting all the items in his pay request. All such information shall be arranged in a manner required by the Engineer. The required format may vary as the project progresses. Also include totals and percentages for both total work performed to date and work remaining after the current pay request. On relocation projects reimbursable by the Alabama Department of Transportation, application for payment will be submitted by the Owner to the Alabama Department of Transportation. When reimbursement funds are received by the Owner from the State, payment will be made to the Contractor. In making partial payments to the Contractor, there shall be retained five (5%) percent of the estimated amount of work done and value of materials suitably stored on the site or suitably stored and insured offsite (offsite storage must be approved). Provided, however, after fifty (50%) percent of the project has been satisfactorily completed, no further retainage will be withheld. The calculation of percent completed shall be based on the value of work actually in place and agreed upon by the Engineer. The value of stored materials shall not be considered in the calculation of percent completed. Submittals must be approved and all comments addressed to the satisfaction of the Engineer before any payment is made on the items the submittal addresses.

The Contractor will be paid only for items listed in the "Items of Work". The Contractor shall include the cost of any and all work required, but not specifically listed, in the cost of the items listed. The Contractor shall include in the Contract Sum all allowances stated in the Contractor Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, or the Contractor chooses. Unless otherwise provided in the Contract Documents, allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts. The Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum and not in the allowances. Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order.

The Contractor's submittal of an Application for Payment (that is, a request for payment) shall be a certification by the Contractor that he is familiar with the work performed, has inspected the work performed, certifies that all work billed for on the current and previous applications has been completed in accordance with all the requirements of the Contract, and certifies that the status of completion indicated is accurate and that the amounts requested for payment are accurate. The Application for Payment shall be the Contractor's certification (1)

that all work billed for has been properly completed to the percentage or amount shown, and (2) that all work billed for complies fully with all requirements of the plans and specifications.

The Contractor further warrants that upon submittal of an Application for Payment, all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work. Such applications shall not include requests for payment of amounts the Contractor does not intend to pay or has not paid, where applicable to a Subcontractor or material supplier because of a dispute or for any other reason. When requested, the Contractor shall promptly provide the Engineer proof of payments made. The proof shall be a certified statement from the subcontractor or material supplier showing the invoice amounts and the amount actually received for the project. Retainage or other amounts to be paid later shall not be included in the amounts paid. The proof of payment shall be clearly stated and acceptable to the Engineer.

The issuance of a Certificate for Payment will constitute a representation by the Engineer to the Owner, based on the Engineer's observations at the site and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Engineer's knowledge, information and belief, quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon completion; to results of subsequent tests and inspections; to minor deviations from the Contract Documents correctable prior to completion; and to specific qualifications expressed by the Engineer. The issuance of a Certificate for Payment will further constitute a representation that the Contractors is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Engineer has (1) made exhaustive or continuous inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor' right to payment or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

The Engineer may decide not to certify payment and may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Engineer's opinions the representations to the Owner required above cannot be made. If the Engineer is unable to certify payment in the amount of the Application, the Engineer will notify the Contractor and Owner. If the Contractor and Engineer cannot agree on a revised amount, the Engineer will issue a Certificate for Payment for the amount for which the Engineer is able to make such representations to the Owner. If the Contractor feels that he is entitled to be paid more, he shall promptly provide to the Engineer detailed and complete documentation demonstrating that he has earned the amounts he requested and that sufficient monies remain to be paid to fully complete all the requirements of the plans and specifications.

Retainage may be held by the Owner until final completion and acceptance of all work covered by the Contract Documents. No other escrow or deposit arrangements are

acceptable to the Owner. When maintenance periods are included in the Contract Documents, such period shall be considered a component part of the Contract and retainage will be held until the expiration of such periods.

Unless specified otherwise in the Basis of Payment, separate structures or buildings, public work, or other separately identifiable divisions of the Contract in regard to which a separate price has been stated in the Contract Documents or can be separately ascertained, are integral parts of the complete project, and the Owner will not release retainage or make payment in full or separate divisions even though that part of the project may be complete, accepted, and in full service until the entire project and all components thereof have been completed, tested, accepted, and are in satisfactory service.

All materials and work covered by partial payments as provided for herein shall become the sole property of the Owner; provided, however, the Contractor shall not be relieved from the sole responsibility for the care and protection of materials, equipment, and work upon which payments have been made and for the restoration of any damaged work.

When work has been determined to be unacceptable, the Owner may at any time deduct the full cost, as estimated by the Engineer, of removing the unacceptable work and replacing it with work fully meeting the requirements of the Contract. The Owner may at any time refuse to pay for any work that will be affected by the removal and replacement of unacceptable work. The Owner shall not be required to pay for, or may at any time, deduct the full cost of removal and replacement, of all affected work that is dependent on or supported by or connected to, etc., unacceptable work or work not demonstrated to be in full compliance with all Contract requirements.

When requested, the Contractor shall promptly provide full support and detailed documentation clearly showing (1) that the amounts previously paid and currently being requested are justified, and (2) that sufficient monies remain for fully completing all work items of concern. There shall be no obligation for the Engineer to approve a payment amount requested if the Contractor does not acceptably demonstrate that the item (including any associated remedial work) can be totally completed per all Contract requirements for the amount remaining. In addition to retainage, additional amounts will be withheld for start-up, testing, cleanup, grassing, price adjustments, etc., and any and all other required work until all such work is totally complete in all respects. The Contractor shall not receive full payment for a work item until it is totally complete in all respects. Payment for an item shall not preclude later withholding for that item if it is determined that the payment should not have been made or if a problem develops with the work previously paid for. In addition, the Owner may also withhold payment of the whole or any part of a verified or approved application for payment from the Contractor to such an extent as may be necessary to protect itself from loss on account of any of the following causes discovered subsequent to its verification or approvals:

1) Defective work.

2) Evidence indicating probable filing of claims by other parties against the Contractor.

3) Failure of the Contractor or subcontractor to promptly make payments to subcontractors or for materials, labor, food stuffs and supplies.

4) Damage to another contractor under separate contract with the Owner.

5) Assessment of liquidated damages or fines, fees, etc.

6) Overestimated quantities or percent completion from previous estimates.

7) Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum.

8) Reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay.

9) Persistent failure to carry out the Work in accordance with the Contract Documents.

When the above grounds are removed, applications for payment will then be verified and/or approved for amounts not previously verified and approved because of them.

VIII.13 NO DAMAGE FOR DELAY

If the Contractor is delayed, hindered, or impeded at any time in the progress of the Work for any reason or by any alleged act or neglect of the Owner, or the Engineer, or by an employee of any of them or by a separate vendor, manufacturer or Contractor employed by the Owner, or by changes ordered in the scope of the Work, or by other causes beyond the Contractor's control, then the Contract Time may be extended at the sole discretion of the Owner by Change Order for such reasonable time as is agreed to by the Owner. However, notwithstanding any other provisions in the Contract Documents, and whether contemplated or not, and whether or not arising by active interference; the Owner, Engineer, and their respective agents and employees shall not be liable for any damages for delay whether for direct or indirect costs, extended home office overhead, idle or inefficient labor or equipment, cost escalations, or monetary claims of any nature arising from or attributable to delay by any cause whatsoever. The Contractor's sole and exclusive right and remedy for delay by any cause whatsoever is an extension of the Contract Time but no increase in the Contract Sum.

SECTION IX
PROJECT COMPLETION

IX.1 SUBSTANTIAL COMPLETION

"Substantial completion" shall be that degree of completion of the entire Project, unless otherwise provided for, as evidenced by the Engineer's written notice of substantial completion, sufficient to provide the Owner, at its discretion, the full-time use of the work or defined portion of the work for the purposes for which it was intended. "Substantial completion" of a Project shall be that degree of completion that has provided a minimum of 7 continuous days of successful, trouble-free operation of the entire project facilities in a "fully automatic" manner acceptable to the Owner and Engineer and with all redundant and alternative systems fully operational. The Contractor shall demonstrate that all features of the project function properly and reliably in the intended mode during this seven-day period in order for the project to be considered eligible for substantial completion. All alternative modes of operation and flexibility must be demonstrated during this period. All equipment contained in the Project, plus all other components required in the Plans and

Contract Documents to enable the Owner to operate the project facilities in the manner that was intended, shall be complete on the substantial completion date. The Project herein described is a complete Project in its entirety and shall include clean-up and other aesthetically pleasing requirements of the project. Completion of individual components of the Project cannot be considered for substantial completion until the sum total of these components are complete and thus, the components when operating properly will provide the Owner with a complete Project.

When the Contractor considers that the Project is substantially complete, the Contractor shall carefully review all requirements of the plans and specifications, carefully compare the work completed to the work required, and prepare and submit to the Engineer a detailed, complete list of all items to be completed or corrected and request an inspection for substantial completion. The Contractor shall not misrepresent the work as substantially complete when a limited investigation indicates that the work is not substantially complete. The failure by the Contractor to include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents. After inspection and/or if an operating facility, after a minimum of seven continuous days of successful, trouble-free operation has been achieved during startup, the Engineer may, at his sole discretion, issue a written notice of substantial completion for the purpose of establishing the starting date for specific equipment guarantees or warranties, and to establish the date the Owner will assume the responsibility for the cost of operating such equipment.

Said notice shall not be considered as final acceptance of any portion of the Project or relieve the Contractor from completing the remaining work, including any remaining performance or acceptance testing, within the specified time and in full compliance with the Contract Documents. Specifically, the issuance of a written notice of substantial completion shall not relieve the Contractor of his obligation to promptly remedy any omissions and latent or unnoticed defects in the Project covered by the written notice of substantial completion.

IX.2 FINAL INSPECTION

After the Contractor properly completes all work on his detailed list of items to be completed or corrected, he shall again carefully review all requirements of the plans and specifications and carefully compare the work completed to the work required by the plans and specifications. He shall complete any work not completed in accordance with the plans and specifications, as well as any other required work that may be brought to his attention by others. When all work is complete, the Contractor shall notify the Engineer and Owner that his work is complete. The Contractor shall not misrepresent the work as complete when a limited investigation indicates that the work is not complete.

Upon notice from the Contractor that its work is complete, the Engineer and/or other representatives of the Owner shall make a final inspection of the Work or Project and conduct test or tests, if applicable. The Engineer shall notify the Contractor of all apparent and/or visible instances where the Project fails to comply with the Plans and Specifications and Contract Documents, as well as any defects he may discover (punch list). The Contractor shall immediately make such alterations as are necessary to make the Project comply with the Plans and Specifications and to the satisfaction of the Engineer.

Verification, approval, inspection, final inspection, issuance of final acceptance, issuance of final certificate of payment, action or approval by the Owner upon the final certificate of payment or final acceptance shall not in any way relieve the Contractor of responsibility for faulty materials or workmanship.

IX.3 FINAL PAYMENT

When the Contractor shall have completed all of the work in accordance with the terms of the Contract Documents, he shall certify to the Owner that he has completed all of the work. The Contractor shall also prepare and submit to the Owner a Final Request for Payment in an amount which shall be the Contract Amount plus all approved additions, less all approved deductions and less previous payments made. The Contractor shall give "Notice" of the completion of the work by an advertisement in a newspaper of general circulation published within the City or County in which the work has been done, for a period of four successive weeks. A final payment shall not be made upon the Contract until the expiration of 30 days after the completion of the "Notice". Proof of publication of the "Notice" shall be made by the Contractor to the authority by whom the Contract was made by affidavit of the publisher and a printed copy of the "Notice" published. If no newspaper is published in the County in which the work is done, the "Notice" may be given by posting at the courthouse for 30 days, a proof of same shall be made by the judge of probate, sheriff, and the Contractor.

When the Owner and the Engineer have completed a review of the Work and of the request for final payment and accepted all work, final payment of the amount determined to be due under the Contract will be made to the Contractor, provided that:

(1) Any deficiencies in the Work noted during the review shall have been satisfactorily corrected.

(2) The Contractor shall have submitted certified evidence that all payrolls, all amounts due for labor and materials, and all other indebtedness connected with the work have been fully paid and satisfied, and that there are no outstanding claims or demands against the Contractor in any manner connected with the work.

(3) Proof of publication of "Notice" of completion in newspaper in manner described by law.

(4) A properly executed and duly certified voucher for payment, verified by Engineer or other representative.

(5) A release of all claims and claims of lien against the Owner and its agents and Engineer from the Contractor and all major subcontractors (the Owner may waive the requirement for subcontractor releases) arising under and by virtue of the Contract, on form provided by the Owner, duly executed by the Contractor and with the consent of the Surety. The Contractor may specifically exclude claims of the Contractor from the operation of the release if specifically excluded therefrom in stated amounts and the reason therefore. The Contractor may with the consent of the Owner representative, if any subcontractor refuses to furnish such a release, furnish a bond with surety satisfactory to the Owner representative to indemnify against such claims.

(6) In accordance with ALA.CODE §39-2-12(c), a non-resident Contractor

shall satisfy the Owner that he or she has paid all taxes due and payable to the State, the Owner and all applicable political subdivisions.

Upon Project completion and acceptance by the Owner's representatives, but not before the expiration of thirty (30) days after completion of the "Notice", the amount due the Contractor pursuant to the Contract Documents shall be paid. On relocation projects reimbursable by the Alabama Department of Transportation, application for payment may be submitted by the Owner to the Alabama Department of Transportation. When reimbursement funds are received by the Owner from the State, payment will be made to the Contractor.

IX.4 ACCEPTANCE OF FINAL PAYMENT CONSTITUTES RELEASE

The acceptance by the Contractor of the final payment shall release the Owner, the Engineer, as representatives of the Owner, and their officers, employees, agents, and subconsultants from all claims and all liability to the Contractor for all things done or furnished in connection with the Project, and every act of the Owner and others relating to or arising out of the work. No payment, however, final or otherwise, shall operate to release the Contractor or his Sureties from obligations under this Contract and the Performance Bond, Payment Bond, and other bonds, warranties and guarantees as herein provided.

SECTION X
WARRANTY AND GUARANTEES

X.1 WARRANTY AND GUARANTEE

The Contractor warrants to the Owner and the Engineer that all materials, work, and equipment furnished under this Contract will be new unless otherwise specified and that all work, materials and equipment will be of good quality, free from fault and defects in conformance with the Contract Documents. All work, materials, and equipment not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The warranty shall be for one year from the date of the Final Acceptance or the date of Substantial Completion of the full Project completed in its entirety, whichever is first. If within one (1) year from the beginning date of the warranty period, any of the work, materials or equipment is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so. This warranty includes all equipment even if the specific equipment warranty from the equipment manufacturer has expired. This obligation shall survive termination of the Contract. The Owner shall give such notice promptly after discovery of the condition.

If the Project involves a roof on a building or other structure, then the Contractor shall execute and provide the Roofing Guarantee. The guarantee shall be delivered to the Owner and Engineer prior to final payment. If the Project involves termite treatment, the Contractor shall furnish to the Owner a written warranty certifying that the applied soil poisoning treatment will prevent the infestation of subterranean termites and that if subterranean termite activity is discovered during the warranty period, Contractor shall re-treat the soil and repair or replace any damage caused by termite infestation. The warranty shall be for a period of five (5) years from the date of treatment signed by Applicator and Contractor.

X.2 CORRECTION OF DEFECTIVE WORK DURING WARRANTY/ GUARANTEE PERIOD

The Contractor hereby agrees to make, at his own expense, all repairs or replacements necessitated by defects in materials or workmanship, provided under the terms of this Contract, and pay for any damage to other works resulting from such defects, which become evident within 1 year after the beginning date of the warranty period by the terms of any applicable special guarantee required by the Contract Documents unless the Owner has previously given the Contractor a written acceptance of such defects. The Contractor shall promptly correct such defects upon receipt of a written notice from the Owner to do so. This obligation shall survive the termination of the Contract.

Unremedied defects identified for correction during the warranty period described herein before, but remaining after its expiration, shall be considered as part of the obligations of the warranty. Defects in material, workmanship, or equipment which are remedied as a result of obligations of the warranty shall subject the remedied portion of the Project to an extended warranty period of 1 year after the defect has been remedied. Repetitive malfunction of equipment shall be cause for equipment replacement and an extension of the guarantee period for the equipment to a date 1 year following acceptable replacement. The Contractor further assumes responsibility for a similar guarantee for all work and materials provided by subcontractors or manufacturers of packaged equipment components.

The Contractor also agrees to hold the Owner and the Engineer and employees harmless from liability or damages, including the Engineer and attorneys' fees, and cost and expenses of litigation of any kind arising from damage due to said defects. The Contractor shall make all repairs and replacements promptly upon receipt of written order for same from the Owner or its agent. If the Contractor fails to make the repairs and replacements promptly, or in an emergency where delay would cause serious risk, or loss, or damage, the Owner may have the defective work corrected or the rejected work removed and replaced, and the Contractor and his Surety shall be liable for the cost thereof. The Contractor during the warranty period shall repair/replace as rapidly as possible any and all equipments, materials, etc., which are found to be defective. Should any items not be repaired/replaced within thirty (30) days from the time it is reported to the Contractor by the Owner, then the warranty period shall be extended on that item for a period equal to the time that the item has remained defective, incomplete, or inoperable as determined by the Owner. The Contractor must certify that the item has been corrected. The Owner's rights under this Article shall be in addition to, and not a limitation of, any other rights and remedies available by law.

Nothing contained in this Section shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the time period of one year as described in this Section relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

STANDARD SPECIFICATIONS

STANDARD SPECIFICATIONS

SITE WORK

SPECIFICATION
FOR
PERFORMING WORK IN EXISTING FACILITIES

SECTION 1-1

1.0 GENERAL

This project involves work in an existing water or wastewater (or "sewer") facility. Where the word "facility" is used in this specification, it shall be understood to refer to all lift stations, pumping stations, wet wells, pipes, vaults, valve pits, manholes, stormwater handling components, structures, basins, tanks, and treatment plants (both water and wastewater), etc. "Facility" shall include any and all components of a water or wastewater system. As such, there are many unavoidable risks associated with many aspects of the work. It is the responsibility solely of the Contractor to always identify all risks and to take all appropriate precautions. This section contains some very basic introductory information to remind the Contractor of some - but by no means all - of the many additional safety matters that may be encountered by the Contractor when working in existing facilities. All these and others must be understood, considered, and properly addressed by the Contractor. This partial listing of some examples of additional hazards in existing facilities by no means includes the many other safety issues inherent in all construction. It is the duty of only the Contractor to recognize and identify all the dangers – including the many dangers not listed - that he may encounter in this project and to take all the actions necessary for proper safety.

Pumping Stations, Lift Stations, Water and Wastewater Treatment Plants, and all other facilities contain many dangers and many safety hazards. These include, **but are by no means limited to**, such dangers as confined spaces, deadly atmospheres with dangerously low oxygen levels, toxic and explosive gases, etc., potentially hazardous (poisonous) gases and chemicals stored and used onsite, natural gas lines and gas facilities, digesters and digester gas (explosive methane), piping and facilities, sewage and sludge with pathogens (infectious disease hazards), non-potable water systems (water systems containing water that is not safe to drink or wash with, etc.), electrical hazards, falling hazards, drowning hazards, unanticipated equipment starting, rotating or moving equipment, and trench dangers, among many others. Note that power in a panel, an enclosure, or at equipment, etc., may originate from multiple, different and independent sources. Therefore, turning off the main power supply for a panel often will NOT kill all power in the panel. The Contractor shall have a thorough understanding of all the dangers and hazards associated, or possibly associated, with this type of work. This shall also include all additional potential dangers not listed herein. It shall be the responsibility solely of the Contractor to fully educate himself and all his personnel, subcontractors, and suppliers, etc., regarding all the potential hazards and dangers. The Contractor shall fully understand all the possible hazards and dangers and shall continuously follow all appropriate safety procedures at all times. The Contractor shall ensure that all his personnel and all subcontractor personnel, suppliers, etc., follow all appropriate safety precautions at all times. Continuously and fully comply with all OSHA regulations and requirements, etc. and always follow good, effective safety practices.

When working on equipment and circuits in existing facilities, the Electrical Subcontractor shall always positively lock off the power supply to all the components on which

or near which he will be working. It shall be the responsibility of the Contractor and his Electrical Subcontractor to positively determine the correct circuit(s) to be locked out. He shall lock out all such circuits with his own padlocks. He shall tag out the facilities not to be made hot in accordance with OSHA procedures. All such work shall be carefully coordinated with the Owner. The Contractor shall provide clear written notice to the Owner and Engineer that the facilities have been locked out and are not to be operated unless the Contractor removes his lock and advises the Owner in writing that it is safe to restore power and operate the facilities. All interruptions must be carefully coordinated with and approved by the Owner. It shall be the responsibility of the Contractor (and his Electrical Subcontractor and other subcontractors, etc.) to always perform all work involving existing facilities in a careful and safe manner. See other important requirements in the project plans and specifications regarding work in existing facilities and interruption of existing facilities.

In addition to panel, equipment, or similar type hazards, many additional electrical hazards can exist due to buried wiring and conduits, overhead wiring, exposed wiring, wiring concealed in walls, floors, or ceilings, etc. The exact location and depth of buried conduits is unknown. Any locations shown on drawings should be considered only a rough approximation of the general area where an electrical facility may be located. Overhead wiring and other wiring or conduits are often not shown on drawings, and it is the responsibility solely of the Contractor to always take appropriate safety precautions and to carefully locate all wiring.

The Contractor shall understand that most hazardous atmospheres in water and wastewater systems or plants or other facilities, etc., cannot be detected by smell as most have no odor. The Contractor shall also note that the atmosphere in confined spaces and other areas is always subject to change – sometimes dramatically and quickly – due to a wide variety of causes. Atmospheres that were not dangerous when previously entered may suddenly become deadly for many different reasons.

The Contractor shall be alert for buried and exposed natural gas, LP gas, or propane gas lines, etc., and other facilities that may be potential hazards.

The Contractor shall be aware that all components of existing facilities are subject to deterioration and failures due to corrosion, aging, overuse, insufficient maintenance, or many other reasons. The Contractor shall never assume that existing components of facilities will operate as originally intended when they were first installed. Ladders, handrails, access doors, grating, manhole steps, valves, flow control gates, electrical items, ventilation fans, exhaust fans, and many other components, etc., are always subject to failure. Existing alarm devices of all types should not be relied upon by the Contractor as his sole source of protection. The Contractor shall always provide his own equipment to allow safe working in existing facilities.

The Contractor shall be aware that this is an operating facility and that facility personnel must make their rounds through all areas and buildings in Plants or Lift Stations or other Facilities at any time during the day or night. Even if a Facility is unstaffed or only staffed for one shift per day, etc., it is possible that operators or maintenance personnel may have to make repairs at night. Operators or maintenance personnel may have to access Facilities (including for emergency outages) at anytime, day or night. As such, the Contractor must carefully plan his activities and always provide adequate safety barriers and other measures as desirable, etc., to continuously protect Pumping Station, Lift Station, plant, and all other facilities personnel and visitors, as well as his own personnel.

The Contractor shall provide temporary facilities for safety, including but by no means limited to, guardrails, barriers, fencing, covers over openings, lighting, and signs, etc., as desirable for the protection of his own personnel and subcontractors and the facility visitors and personnel who must operate and maintain the facility throughout the course of construction. Additionally, the Contractor shall provide temporary walkways, steps, or pedestrian bridges or similar temporary facilities where access to existing structures or buildings, etc., are interrupted, or made inconvenient, or made potentially unsafe, etc., by the activities of the Contractor. The Contractor shall perform his work and maintain clean and clear passages in a manner to eliminate tripping hazards during construction to the greatest extent possible. The Contractor shall promptly remove all his equipment, materials, and supplies, etc., not immediately needed from areas where the Owner's operation and maintenance personnel must periodically walk, inspect, check, observe, or maintain equipment, etc.

Pumping Stations, Lift Stations, Plants, and all other facilities have many hazards from which the general public must be protected. The Contractor shall always perform and coordinate all his work to maintain the facility security. This shall include, but not be limited to, continuously maintaining secure fencing around the entire site (or sites if there is more than one site) at all times. Temporary fencing that properly maintains facility security shall be provided at all times whenever the existing fence is removed or whenever the existing fence does not provide adequate security. The Contractor shall be responsible for locking and controlling access through gates and for taking other measures as applicable to maintain a secure site at all times, whether or not work is ongoing.

Safety is the responsibility solely of the Contractor. Neither the Owner nor the Engineer have any duty to review the safety practices of the Contractor.

Wet wells and valve pits, and many other structures, etc. are confined spaces. As with other wastewater and water treatment components and tanks, they should always be assumed to contain deadly atmospheres. The contents of such atmospheres at lift stations and in treatment plants can vary and can suddenly and unexpectedly become deadly due to a wide variety of reasons. Effective gas monitoring and effective ventilation, as well as other safety procedures, shall always be carefully utilized by the Contractor at all times. The Contractor is solely responsible for identifying confined spaces and facilities that are potentially dangerous or may become dangerous. The Contractor should anticipate that the equipment in operation, flowrates, and conditions in the facility, etc. may change numerous times throughout a day as well as throughout the duration of the project. The Contractor shall always carefully and fully comply with all OSHA requirements.

Whenever the Contractor turns off power to existing equipment or new equipment, he shall always carefully verify that the correct breaker(s) and disconnect switches, etc. have been correctly locked out. He shall always be alert for confusing, outdated, or incorrect labels for breakers and equipment, etc. He shall always determine if and verify that labels are correct. The Contractor shall be aware that electrical drawings and diagrams, etc., for existing wiring and equipment, etc., are often incorrect. Electrical drawings are often outdated due to changes that have been previously made both during construction and after the original facility was initially constructed. It shall be the responsibility of the Contractor to identify the actual circuits and wiring, etc., that must be turned off and/or disconnected, etc., so that the work can proceed safely.

The Contractor shall always utilize only project personnel who are completely knowledgeable about and fully understand all the risks and potential safety hazards to which they will or may be exposed. The Contractor shall not use personnel – and shall not allow any subcontractor, etc., to use personnel – who will not carefully follow all appropriate safety precautions at all times.

The sole purpose of this section is to remind the Contractor of his duty to properly address the many dangers throughout the existing facilities. It is not the intent of the plans or specifications, nor is it possible for the plans or specifications, to list all the possible dangers that will be encountered or all the actions the Contractor is required to take to insure that his work is always performed in a safe manner. It is the duty of the Contractor to be knowledgeable about all the potential hazards associated with this project. It is the duty of the Contractor (and only the Contractor) to identify all possible hazards and to take all actions necessary to keep all persons at the site safe.

2.0 RESTRICTIONS ON INTERRUPTIONS AND/OR BYPASS PUMPING

The improvements in this project will be constructed in an operating pumping station, lift station, and/or treatment plant or facility that must remain in operation throughout construction. Where the word "facility" is used throughout this specification, it shall be understood to refer to any component of a water or wastewater system. The Contractor shall carefully plan and conduct his work in a manner that minimizes the interruption of normal facility operations. The following restrictions on the interruption of normal facility operations and other sequencing notes are made for the Contractor's benefit and to advise the Contractor of certain sequencing requirements for this project. All appropriate sequencing details, requirements, and limitations, etc., on interruptions of normal operations have not been listed. It is the responsibility of the Contractor to plan all work and conduct it in a manner such that the pumping station(s), lift station(s), plant, or other facilities can be maintained in operation, to prevent bypassing or permit violations, and to avoid damage to existing equipment and facilities.

The Contractor shall maintain access for the Owner to all existing facilities throughout construction. The Owner must have access to all facilities for operation and maintenance. Where it is necessary to cut roads, the Contractor shall schedule this with the Owner and Engineer and shall backfill the cuts as quickly as possible to allow the Owner access. If the Contractor interrupts a utility (e.g., power, phone, internet, water, natural gas, sewer, etc.) or a treatment process or pipeline, he shall immediately notify the Owner and Engineer and restore service as quickly as possible.

Prior to beginning the work, the Contractor shall develop a detailed schedule for all work clearly indicating where interruptions to normal operation are required. However, the failure to include such work in the schedule or the duration of the work, nor any changes in the schedule, etc., shall not constitute a justification for an increase in construction time or an increase in cost.

The plans and specifications may contain some partial construction sequencing notes. These notes are provided for the Contractor's benefit to help him understand at bidding time that construction sequencing will be an important part of the project that must be considered during bidding and construction. These notes are not a detailed or complete sequence but rather a very general guideline and a listing of some minimum requirements.

These notes shall be considered by the Contractor in preparing his detailed construction sequence and project schedule. It is the duty solely of the Contractor to understand water and wastewater facility operations and to fully consider all restrictions associated with this type of work in the interruptions of existing facilities. The Contractor shall bid and plan his work accordingly.

Tie-ins and interruptions of existing facilities (i.e. pumping stations, lift station(s), and/or plant(s), etc.) can be done only at certain times when (1) the flowrate into the facility is sufficiently low, (2) rainfall is not forecast to occur until well after the tie-in work has been fully completed, (3) the operator workload allows them, and (4) facility limitations, etc., allow them. For water plants and water systems, additional factors may include extent of dry weather and water customer demand, etc. Tie-ins or other interruptions of normal facility operations shall not be performed when the SCADA System is not capable of properly receiving and issuing all alarms. Carefully coordinate all such work with the Owner and make requests for interruptions through the Engineer in a timely manner. Carefully plan work to insure it can be fully completed within the allowable period of interruption to be established by the Owner. The allowable schedule for performing the work addressed by this specification and other interruptions shall depend on existing and anticipated facility flows, as well as other limitations. The work shall not be performed at a time that is not suitable to the Owner. The work shall not be performed at a time that may jeopardize permit compliance.

If bypass pumping is required or needed to perform the work, it shall be designed by and provided by the Contractor. The bypass pump(s) must be capable of handling the highest peak flow that may be expected or was experienced in the past. In addition to the bypass pump (or pumps) required to handle the highest peak flow, a stand-by bypass pump shall be provided. The standby pump capacity shall be at least equal to or greater than the largest duty bypass pump. The stand-by pump shall be piped and controlled so that it will start functioning automatically and immediately if one of the duty pumps fails or if a high level is reached. The standby pump control system shall be independent of the duty pumps so that a failure of the duty pump controls will not prevent operation of the standby pump. The Contractor shall have a qualified and dependable person on the jobsite who shall carefully monitor the bypass pumping continuously (24-hours per day, including weekends and holidays) whenever it is in operation or set to start automatically or set to start when needed. Monitoring by video camera or similar monitoring does not meet the requirement to have a person on the jobsite. All bypass pumps shall be in high quality acoustic enclosures that will prevent complaints from neighbors. All bypass pumps (including the standby pump) shall be new, or in like-new condition, and shall be highly dependable. All bypass pumps shall be fully tested before delivery to the jobsite. Once installed, all pumps, all their controls, and all the bypass piping shall be fully and completely tested to ensure proper functionality before taking any existing components out of service. Install floats or other controls such that entanglement (which could prevent proper functionality), etc., is prevented. The entire bypass pumping system must be highly reliable. The Contractor shall be solely responsible for any failure of his bypass pumping system. If other bypass pumping requirements are contained in either the plans or specifications, the more stringent requirements shall prevail. No additional payment will be made for bypass pumping unless additional payment is clearly established by the Basis of Payment and specifically approved by the Owner prior to the pumping.

Where a facility utilizes UV disinfection, chlorination, and/or dechlorination, such treatment must be provided continuously. The Contactor shall not take UV, chlorination,

or dechlorination facilities offline until all new disinfection facilities have been fully tested, are in reliable operation, are capable of fully complying with all permits regulatory requirements, and the SCADA system is sufficiently complete that it will send a remote alarm in the event of a problem or failure.

Some tie-ins and interruptions at water and wastewater facilities are best performed during and may be restricted to early morning hours (e.g., from 12 a.m. to 5 a.m.) during dry weather. Where appropriate to facilitate work, the Contractor shall perform as much work as possible in preparation for making the actual tie-in. This shall include work such as: thorough coordination with the Owner and Engineer; having all required materials on-site and ready; preassembly of fittings, piping, etc. to the greatest extent possible; verifying satisfactory operation and dependability of all equipment to be used for completing the tie-in; having back-up equipment and materials on-site and ready for immediate operation in case monitoring by video camera or similar monitoring does not meet the requirement to have a reliable person on the jobsite original equipment malfunctions or fails or if additional material is needed, etc.

The Contractor shall carefully plan all interruptions and ensure that all material and equipment are onsite prior to initiating an interruption. The Contractor shall have backup (spare) equipment onsite and completely ready to be immediately used to ensure the work can proceed expeditiously if the primary equipment fails. For each requested interruption in normal operations, the Contractor shall provide the Owner and Engineer a detailed, step-by-step, written description of and schedule for (1) how he plans to make the tie-in or other work activity, (2) the equipment, materials, and personnel that he will have on hand, and (3) his schedule for fully completing all the work required. This description shall be submitted for Owner consideration a minimum of seven days before requested interruptions.

Note that when structures and pipelines, etc., are isolated for the purposes of making tie-ins, etc., the Contractor shall expect that existing valves and gates will be difficult to operate and will leak. It shall be the Contractor's responsibility to handle these leakages. The Contractor is responsible for properly handling any sludge, sewage, grit, and material, etc., remaining in the piping or force mains, tanks, or other structures after they are drained to the extent possible.

Once an interruption is initiated, the Contractor shall work expeditiously to complete the work as soon as possible and to return the facility to normal service. The Contractor shall not divert resources away from completing the work until the work has been completed and the facility returned to normal operation. Generally, an interruption shall not extend beyond normal business hours of the same day it was initiated. If it is necessary for the interruption to extend beyond the end of the day, the Contractor shall work continuously if approved or if requested by the Owner to return the facility to normal operations. Interruptions shall not be initiated on Fridays. Interruptions shall not extend into a weekend or holiday.

The Contractor shall email to the Engineer and Owner a list with Contractor cell phone numbers or other emergency numbers to allow the Contractor's personnel to be contacted should an emergency develop during an interruption or after an interruption has been completed. This phone list shall also include the Contractor's electrical subcontractor, systems integrator, SCADA personnel, and any other appropriate personnel who may be able to provide assistance in an emergency. Additionally, a copy of this list shall be posted in the facility's main office.

The Contractor shall be responsible for any and all damages and costs due to his activities including but by no means limited to flooding, overflows, bypassing, and fines, etc.

3.0 ELECTRICAL, CONTROL, AND SCADA CONSIDERATIONS

This is an operating facility. Where the work requires the modification, abandonment, or removal of existing electrical facilities, the existing facilities must remain in operation until such time as the Contract states that they may be removed. Unless stated otherwise, existing facilities must remain in normal operation until the new replacement facilities have been completed, started up, proven to be ready for reliable operation, and approved for permanent service. Any and all work involving the existing electrical system, control system, or SCADA system, etc., must be carefully coordinated by the Contractor with the Owner through the Engineer. Existing electrical, control, or SCADA circuits may be de-energized or removed from service only with the approval of the Owner. Where shutdowns or interruptions may be allowed, the allowable duration of such shutdowns may be extremely brief. The timing for performing such work, as well as the allowable duration of the interruption, will be limited by factors such as recent rainfall, predicted rainfall, plant operations, plant limitations, or other situations. The Contractor shall develop a detailed step-by-step written plan of his proposed activities during any requested interruption. The written plan shall be furnished to the Engineer for review. Whenever the Contractor is working on a circuit that must be de-energized, he shall insure that all possible power sources are locked out with his own padlocks. Note that power in a panel, an enclosure, or at equipment, etc., may originate from multiple, different, and independent sources. The Contractor shall also tag all lockout locations with appropriate warning information. The Contractor shall also give written notice to the Owner (with a copy to the Engineer) regarding the work and the need to keep the power locked off until it is safe to re-energize.

When modifications to the existing SCADA system are required, the Contractor shall carefully plan all work and shall work promptly to ensure the SCADA system can be completed, fully tested, and returned to normal service as soon as practical. This work shall be coordinated in advance with the Owner. A detailed work plan and schedule shall be furnished to the Owner for his review of this work. The plan and schedule shall be modified if, in the Owner's opinion, such modifications are needed to provide the level of protection the Owner deems appropriate for facility operations. All possible preparatory work shall be performed prior to any necessary interruptions such that all interruptions can be reduced to the shortest possible duration. This shall include, but by no means be limited to, such tasks as pre-assembly of components, programming, testing, etc.

If a SCADA system (or Telemetry System or remote alarm system) is interrupted or modified during the project, it shall be returned to service the same day so that the Owner's personnel can receive alarms at all times including after normal work hours. The capability to receive alarms is especially important during construction projects and during startup as those are periods when there may be a greater potential for a failure or other problem to occur. The Contractor shall take special care not to interrupt alarms and to verify that all alarms, including new alarms, are properly functional during construction. Carefully and promptly verify by field testing the continued performance of any alarm that has been modified or may have been unintentionally modified or disabled by the Contractor's activities.

The General Electrical Notes and/or other notes in the drawings or specifications may contain further restrictions and information. However, neither the plan notes nor the specifications describe all the issues the Contractor will face in performing the electrical, control, instrumentation, and SCADA work.

4.0 SEQUENCING

As is typical when performing work in an existing facility that must remain in operation and in full compliance with its permit, some work in this project must be performed in a specific sequence to allow this.

Many connections and tie-ins to existing facilities or piping cannot be initiated until certain other work has been completed. These restrictions are not necessarily called out on the drawings or in this Specifications. In some cases, the connections and tie-ins cannot be performed until associated tanks or other facilities have been drained or modified. The Owner's approval must be obtained before such work can be performed. The Contractor shall be responsible for draining the tanks and associated piping, but only after receiving the Owner's clearly stated approval and the Owner's conditions associated with the approval.

This Specification and other sections of the plans or specifications contain only some examples of scheduling and sequencing considerations that will affect the project. These are listed for the convenience of the Contractor. There are many other considerations not listed but inherent when working in an existing wastewater or water facility. It is the responsibility of the Contractor to develop his own detailed schedule considering all the restrictions involved in performing the work.

The plans or other specifications may have some abbreviated sequencing notes regarding certain work items that must be performed in a particular sequence. These notes may give only general sequencing considerations that shall be considered the minimum. The Contractor shall determine the full scope of the sequencing considerations for these items and present a step-by-step plan to the Engineer for comment.

In addition to the work where abbreviated sequencing notes are contained in the plans, there are other work items where sequencing is required but no sequencing considerations are stated. The Contractor shall be responsible for determining those work items and shall determine the full scope of the sequencing considerations and present a step-by-step plan to the Engineer for comment. It is the responsibility solely of the Contractor to determine and comply with all necessary sequencing considerations. The Contractor shall have and utilize project personnel with sufficient experience on similar projects in other pump stations, plants, and facilities and that have a high level of understanding of the type of work items where sequencing and/or plant interruption minimization are necessary. Note that the electrical work will also have to be carefully coordinated with the other work to fully comply with sequencing requirements.

5.0 OVERALL PROJECT SCHEDULE

The Contractor shall develop a schedule for his work that allows it to proceed in an orderly and logical manner. The schedule shall consider all requirements contained in the Contract as well as other restrictions inherent in performing the work in a facility that must remain in operation.

The Contractor shall carefully excavate to determine the location, depth, materials, orientation, and nature of existing piping, conduit, and other buried facilities in a timely manner to allow him to plan his work and order the appropriate materials. The actual location and depth of underground facilities is unknown. The Contractor shall perform this exploratory work carefully and early in the project before proceeding with other work, before making piping submittals, and before ordering materials that may be affected. This exploratory excavation shall be done wherever called for on the drawings, at all underground tie-ins, at all potential conflicts with new facilities, and wherever else desirable to avoid potential problems. The Contractor shall record the actual location and elevation of the piping and shall promptly provide field sketches to the Engineer showing this information. Field measurements are required where appropriate and should be completed in a timely manner. No extra time shall be given for changes necessitated by actual pipe locations, conflicts, type pipe, and fittings, etc.

To facilitate scheduling and final testing, piping, equipment, and structures shall be tested to the extent practical prior to formal testing.

6.0 EXPLORATORY EXCAVATION AND CONFLICTS

As is typical when performing work in an existing facility, there will inevitably be conflicts between the existing facilities (including but by no means limited to structures, piping, electrical components, underground conflicts, and above ground conflicts, etc.) and the proposed work. The Contractor shall carefully investigate, plan, and schedule his work to minimize the potential for all possible impacts of conflicts. These plans do not show all the details necessary to avoid or address such conflicts. It shall be the responsibility solely of the Contractor to perform timely investigations of and explorations into all proposed work to learn of all conflicts and properly address them in a timely manner and in a method that is acceptable to the Owner.

7.0 MISCELLANEOUS

The existing conduit and electrical line locations and depths are not known and generally are not shown. In some cases, the assumed routing of wiring, conduits, or duct banks entering or leaving the pull boxes may be shown. The Contractor shall conduct his work carefully and coordinate with the facility staff. However, the staff does not know the exact location or depth of these lines. The Contractor shall carefully coordinate his excavation activity in the vicinity of suspected or possible electrical facilities with the facility superintendent.

Much information is based on drawings prepared for the previous construction of the facilities. Much of this information has not been and/or cannot be verified.

The Contractor shall provide adequate temporary support as needed to support existing piping, structures, electrical conduits or cables, and other existing facilities during construction. The Contractor shall be solely responsible for any damages or accidents due to his failure to support and protect existing facilities.

This project requires work in and connections to an existing, operating facility. As such, the Contractor should anticipate the problems associated with such work, including but not limited to, coordination of all work with the Owner (through the engineer) including

making tie-ins, electrical tie-ins and modifications, and all other interruptions during suitable periods, thoroughly planning work activities to minimize interruptions of normal operations, maintaining plant safety at all times for the plant operations and maintenance staff, and leaking gates and valves, etc. Some activities may be best performed during the very early morning hours of dry weather. The Owner shall have the sole authority to make the final decision as to whether or not tie-ins and interruptions can be allowed at the time requested by the Contractor.

The Contractor shall be fully responsible for all fines and costs, etc., due to bypassing or inadequate treatment, or permit violations, etc., that are due to the Contractor's operations.

The above considerations do not include all the issues, sequencing, limitations, conflicts, or restrictions, etc., that the Contractor will face in performing the work and making modification and tie-ins (mechanical and electrical, etc.) required by the Contract. The Contractor shall expect and plan for such issues as they are inherent in making modifications in existing water and wastewater facilities. There shall be no extra time or payment for any such issues encountered in the performance of the work.

The Contractor shall remain fully and solely responsible for all safety associated with all interruptions, sequencing, conflicts, and all other work regardless of time limitations and other constraints, etc.

The Contractor should anticipate that wet wells, tanks, structures, basins, channels, and piping, etc., will contain debris, grit, and sludge, etc. It shall be the Contractor's responsibility to remove and properly dispose of such material to the extent necessary to properly perform the work required by the project. The material shall not be disposed of at a facility of the Owner. Where required by the Contract or necessary to perform, all such material shall be removed, and the location cleaned from which it was removed. Comply with all environmental regulations in the disposal of all removed materials.

Coordinate and cooperate with other Contractors, subcontractors, manufacturers, suppliers, and vendors, etc., who may be working on the same project or at the same location(s).

All equipment and processes shall be tested to the maximum extent practical prior to placing them into service. It is the responsibility of the Contractor to test all facilities in compliance with the Contract.

All equipment shall be operated trouble-free a minimum of 7 -10 consecutive days prior to being placed into service unless indicated otherwise. New facilities must be approved by the Owner to be placed into operation before they may be placed into service. Where allowed, pump disinfected plant effluent water or clean stream water to test units. Clean any remaining debris, etc. Unless explicitly stated otherwise, the Contractor shall purchase any potable water used for testing and cleaning, etc. The Contractor shall be solely responsible for providing all pump(s), piping, fuel, and labor, etc. necessary for such testing. To facilitate scheduling and final testing, piping, equipment, and structures shall be tested to the extent practical prior to formal testing.

No demolition shall be performed until the replacement process and all associated piping and controls and alarms, etc., that are necessary for proper operation, etc., have passed testing, been started up, and been approved to be placed into service. The Contractor must request in writing the Owner's approval to demolish structures on a case-by-case basis. Approval of the Owner must be obtained on a case-by-case basis before demolition can be performed. The Contractor shall carefully plan demolition. The Contractor shall take

all proper safety precautions when demolishing any item particularly any that contains, or any that may have previously contained, any potentially explosive or flammable or hazardous materials, etc. The Contractor shall not damage any item not intended to be demolished. He shall carefully protect facilities intended to remain in operation.

Where demolition will include, or potentially may include any wiring or any electrical items, the Contractor shall first verify that all possible sources of power have been definitely identified, locked off, and tagged out. The Contractor shall be aware that drawings of existing facilities may not show, or may not accurately show, all electrical wiring, components, circuits, or power sources, etc. Circuits may be mislabeled or may have been changed from available drawings.

New facilities must operate trouble-free in the intended mode of normal operation for a minimum of seven consecutive days unless indicated otherwise before they may be placed into service. New facilities must be approved by the Owner to be placed into operation before they may be placed into service. See other requirements elsewhere.

If the Owner determines it is in his best interest, he may allow new facilities to be placed in operation due to extenuating circumstances. However, if this occurs, it shall not be an indication of any of the following: (1) that the facilities are complete, (2) the facilities have met the requirements of the "Start-up and Use of ..." payment item, (3) the facilities have been accepted, or (4) the facilities meet all Contract requirements. It shall not be an indication that the warranty for the facilities has started. The Owner shall not be obligated to make full payment on such facilities but may withhold a sufficient amount to fully pay all costs (including any remediation costs to correct non-complying work) associated with bringing the project into full compliance with the Contract.

Due to the need to schedule the work such that some new facilities will be in operation while others are still under construction, it will be necessary for the Contractor to clearly communicate to the Owner and Engineer regarding his plans and the status of equipment that he has installed. These communications shall be clearly stated in writing which will help the personnel (including evening shift and weekend shift as applicable) at the Facility to receive the instructions. The Contractor shall lock out with his own padlocks any equipment that he does not intend for the Owner to operate. The Contractor shall take other means as appropriate to prevent accidental damage to equipment due to the sequencing associated with the project.

Due to the work being performed in an existing Facility that must be staffed, operated, and maintained, the Contractor shall take appropriate actions to prevent all operating and maintenance personnel (including, but not limited to, all shifts other than the normal day shift, as applicable) from being injured due to the Contractor's activities. It shall be the duty solely of the Contractor to determine these actions and to provide any and all temporary barriers, walks, lighting, closures at openings, warning signs, and whatever other measures may be desirable to protect the operators.

The Plans and Specifications do not list all scheduling or sequencing considerations. These shall be developed by the Contractor as he plans his work with the understanding of the necessity to keep certain lines, processes, equipment, and tanks online until new processes are tested and ready to be placed into operation.

Some interruptions of Facility operation or tie-ins, etc., may require bypass pumping and the associated temporary piping. The Contractor shall bid and plan his work accordingly. It may also be necessary to pump flow or tank contents from one tank to another

to allow certain work to be performed. Multiple such transfers may be needed. The plans and specifications do not necessarily call out all the various bypass operations that will be needed to properly perform the work. The Contractor shall provide bypass pumping wherever needed to properly perform his work.

All costs associated with performing all the work in this existing plant while maintaining existing plant operations shall be included in the price bid. There shall be no extra payment or extra time due to the necessary sequencing and procedures necessary to properly perform the work while allowing the existing plant to remain in operation. There shall be no extra payment or extra time due to the Contractor's failure to properly plan all required work activities and material acquisition.

See the plans and specifications for other information that will affect scheduling and sequencing. See the "All Equipment" specification for additional information regarding start-up and training. The "All Equipment" specification applies to all equipment provided on the project.

While some restrictions regarding scheduling and sequencing are listed, and some requirements for exploratory excavation, etc., are contained in this Specification, this by no means relieves the Contractor of his responsibility for the means and methods of construction or for safety.

The above considerations do not include all the issues, sequencing, limitations, or restrictions, etc., that the Contractor will face in performing the work and making tie-ins (mechanical and electrical, etc.) required by the Contract. The Contractor shall expect and plan for such issues as they are often inherent in making modifications in existing water and wastewater facilities. There shall be no extra time or payment for such issues encountered in the performance of the work.

The Contractor shall diligently keep construction-related dust, dirt, and mud etc. off of roads in existing facilities. Promptly clean off any such substances that get on roads in facilities as well as other roads. Clean roads multiple times per day if needed or if requested by the Owner.

The Contractor shall limit his use of existing facility roads to those that must be utilized for access. When temporary construction roads are called to be constructed to limit the Contractor's use of existing roads, the Contractor shall construct those roads in a timely manner to avoid the use of the existing roads. The Contractor shall be responsible for designing and maintaining his construction roads. Do not block drainage with temporary roads. If requested by the Owner, remove construction roads when no longer needed. The Contractor shall be responsible for damage to existing roads that were used when his construction roads were supposed to have been used instead.

The Contractor shall carefully coordinate with the Owner regarding access through normally closed or locked gates to the facility. The Contractor shall insure that facility access gates are closed and/or locked when he leaves the facility so that unauthorized persons cannot get into the facility.

Unless specified otherwise, the Contractor shall provide the labor to operate valves, slide gates, and sluice gates, etc., as needed to control flows, etc., during construction. All valve and gate operation shall be very carefully coordinated with the Owner through the Engineer to avoid confusion or misunderstanding or incorrect operation. No valves or gates shall be operated by the Contractor without the presence at the valve or gate of the Owner's facility operator who can confirm that that correct valve or gate is being properly operated and

that the operation will not have unintended consequences. At the appropriate time, and with the presence of the Owner's operator, restore the valve or gate to the previous position as needed. Note that valve or gate operation has the potential to cause sewage or sludge to overflow to the stream where it can have serious consequences and result in fines, etc.

SPECIFICATION

FOR

DEMOLITION

SECTION 1-2

Prior to initiating demolition in an area, the Contractor shall ensure that all potential power sources to or through the demolition area are padlocked in the off position such that they cannot be unintentionally repowered. Note that buried, encased, concealed, or hidden sources likely will not be evident. The Contractor shall be alert for and understand the potential for mislabeled circuit breakers, multiple sources of power, etc.

The Contractor shall ensure that piping or other facilities being demolished have been isolated and remains isolated so that unintended flow cannot enter the area being demolished. The Contractor shall be responsible for handling and properly disposing of any flow or material in piping or structures, etc.

No blasting is allowed for demolition.

Provide dust control as needed. The Contractor shall prevent dust from entering electrical panels or devices or motors or bearings or any other equipment or components that may be adversely affected by dust.

Where various items are demolished or removed but the structure and/or other components remain, cut off anchor bolts or similar appurtenances flush. Perform all demolition work (including any work where existing components or items are removed or relocated) in a manner such that uneven or sharp surfaces or edges, etc., that may present the potential for tripping or otherwise being injured do not remain.

Prior to proceeding with any demolition, the Contractor shall make himself fully aware of any components or structures or other items, etc. that are not intended to be demolished or disturbed, including but not limited to those within or adjacent to or in the vicinity of the demolition work. It is the Contractor's responsibility to carefully determine the components not to be damaged during demolition or modifications to existing facilities. Use care and do not disturb or damage any components or structures or other items, etc. that are intended to be reused or kept as is. If the Contractor damages any such components, or structures, or other items, etc., he shall promptly replace or restore them at his cost and in a manner that is satisfactory and acceptable to the Owner.

Where openings are being enlarged or cut in existing slabs and walls, etc., do not overcut beyond the inside dimension of the opening. Such overcut could severely weaken the structure and/or expose reinforcing steel to corrosion which will further weaken the structure.

Where only a portion of an existing structure or item, etc. is being removed or demolished, perform work in a manner that such that the remaining portion has a neat appearance. Sawcut paving and sidewalks, etc., at the boundary between the part being removed and the part remaining such that a smooth and straight edge remains. In general, much (or all) of the concrete being demolished will typically contain reinforcing steel.

The Contractor shall coordinate the timing and sequence, etc. for demolition. Where required by the plans or specifications, or where otherwise necessary to maintain plant or facility performance or permit compliance, the Contractor shall not initiate demolition until other work has been completed and, if appropriate, placed into operation.

The Contractor's responsibility for means, methods, and safety, etc. is the same during any demolition as during all other parts of the project. The Contractor is solely responsible for safety during all demolition and during any associated or similar work. Confined space hazards and other dangers may remain deadly even in abandoned structures or inactive structures or facilities, etc.

Where demolition or modification to existing structures or facilities, etc., results in potentially unsafe or dangerous conditions, the Contractor shall immediately install and continuously maintain adequate barriers, guards, and other facilities, and take other measures as needed to fully protect his personnel, plant personnel, and all other personnel and visitors, etc., from such conditions.

Do not allow any demolished material, debris, dust, mud, and other such substances, etc., to enter a process, piping, channel, or tank, etc., where it could potentially interfere with treatment or clog equipment or piping, etc. Promptly clean up any demolished material, debris, dust, mud, and other such substances, etc., resulting from demolition.

All equipment, components, debris, and any other material, etc. resulting from demolition shall be hauled offsite and disposed of at an acceptable landfill and in accordance with all environmental regulations. In some cases, the Owner may wish to keep some part of the equipment or materials, etc., in lieu of the Contractor hauling it off. In such cases, the Contractor shall deliver such items to an Owner-selected location onsite. The Contractor shall place such equipment or materials in a manner such that they are safely stored and not subject to falling or rolling, etc. that could cause damage or injury. The material resulting from demolition shall not be placed on top of existing piping or ductbanks or any facilities that could be damaged by the placement of the material. The Owner does not represent that sufficient space is available for the temporary placement of material resulting from demolition. Regardless, the material resulting from demolition shall not be stored on site for longer than approximately 2 weeks before being hauled off site for disposal.

If demolition damages piping or electrical facilities, or other items that are needed for proper operation and performance, the Contractor shall promptly and properly repair such facilities so that they can be returned to service as soon as possible.

Comply with demolition requirements in the drawings.

See and comply with the requirements and/or specifications, etc. for Performing Work in Existing Facilities.

Unless demolition is specifically listed as a payment item, the Contractor shall include all costs associated with demolition in other payment items.

SPECIFICATION
FOR
INSTALLATION OF GRIT & GREASE REMOVAL EQUIPMENT

SECTION 1 - 3

1.0 Electrical and SCADA Work:

Electrical and SCADA work is required as a part of this project. This electrical and SCADA work is described in various locations in the drawings and specifications. Some of the electrical and SCADA work is described in various locations within this "Specification for Installation of Grit & Grease Removal Equipment" where it is embedded in the descriptions of various work components. It is the responsibility of the Contractor to verify that his Electrical Subcontractor includes all the required electrical and SCADA work in his scope regardless of where the work is described in the drawings or specifications.

2.0 Project Background and Overview:

In approximately 1999, Schrieber Corporation provided Grit & Grease Removal Equipment that was installed by the contractor for the new Pelham WWTP. That equipment needs to be replaced. Accordingly, the City of Pelham has taken bids for new Grit & Grease Removal Equipment. The low bidder and manufacturer of the new equipment was Parkson Corporation which owns the Schreiber brand. For the purposes of this project, the manufacturer will generally be referred to as Parkson/Schreiber. Pelham will be responsible for the payment for the equipment it purchased, including the cost of shipping that equipment to the Pelham WWTP.

By this current contract, Pelham is taking bids for the installation of the Grit & Grease Removal equipment that it is purchasing from Parkson/Schreiber. The Contractor shall take responsibility of this equipment while it is still on the delivery truck(s) when it (they) arrives at the Pelham WWTP. The Contractor shall be fully responsible for the safe and proper unloading, handling, storage, installation, and startup of all the equipment just as if he had purchased the equipment directly from Parkson/Schreiber. The Contractor shall be solely and completely responsible for all safety related to the work and to the project.

3.0 Abbreviated Project Description:

This project consists of the removal of the existing Grit and Grease removal equipment and replacing it with new similar equipment (including controls and electrical facilities) which is being purchased by Pelham. All bidders are required to visit the WWTP site prior to bidding and to familiarize themselves with the existing equipment and components, access, site limitations, safety considerations, and other details. The new equipment is very similar to the existing equipment (although there is an additional festoon junction box that is not

part of the existing installation and the associated wiring & terminations associated with that new festoon junction box). The work is generally described in this specification and the in the drawings but other pertinent information must be gained by site observations. Site visits can be arranged by contacting the Pelham WWTP at 205-620-6424 from 6:00 am to 2:00 pm or by contacting Municipal Consultants at 205-822-0387. Note that the existing and new Grit and Grease Removal Equipment can begin operation automatically and without warning. The traveling bridge can begin moving silently and without warning. The Contractor shall carefully coordinate with and follow the recommendations of Parkson/Schreiber to insure that the equipment is properly installed, operates smoothly, and performs in a trouble-free manner after installation.

The Pelham WWTP is in the Buck Creek drainage basin. The treated effluent from this WWTP, as well as any overflow of raw sewage will enter Buck Creek which drains through a public park, and thence into the Cahaba River. Due to the public health aspects and environmental sensitivity of the streams, the Contractor shall use appropriate care such that his actions do not interfere with proper treatment.

4.0 Anticipated Project Schedule:

The Owner desires for this project to be initiated and completed as soon as practical. Thus, the Notice of Award will be issued as soon as possible after bid opening and City Council authorization. After bonds and acceptable insurance documentation (as determined by the Owner) are received from the Contractor, the Contract will be executed. Bidders shall coordinate carefully and closely with their insurance agents during bidding to ensure that the specific insurance required by the documents will be provided promptly after Pelham issues the Notice of Award. Note that all bidders are required to execute the "Insurance Requirements Certification" form included in the bid documents and submit it with their bid.

The timing for the issuance of the Notice to Proceed will be determined by the Owner based on the anticipated delivery date(s) of the new Grit and Grease removal equipment and other factors. It is presently (as of February 2023) anticipated that the Notice to Proceed will be issued in May or June 2023. However, the Owner has the right to issue the Notice to Proceed either earlier or later as best suits its interest. It shall be issued prior to the equipment delivery date so that the Contractor can unload the Grit and Grease removal equipment when it is delivered to the Pelham WWTP site. The Contractor shall carefully coordinate with Parkson/Schreiber in a timely manner prior to the issuance of the Notice to Proceed and shall have all the needed unloading equipment (complete with any supplemental appurtenances, etc.) onsite at the Pelham WWTP to promptly unload the equipment as soon as it is delivered. As is typical with equipment deliveries, the Contractor shall anticipate that the actual equipment arrival time will vary from the arrival time established when the shipment time was coordinated with Parkson/Schreiber. It is presently intended that the commence work date in the Notice to Proceed will approximately coincide (to the extent practical) with the equipment delivery date. At the Owner's discretion, he may set the commence work date to begin when sufficient (but not all) equipment is anticipated to be delivered or is onsite such that the Contractor can begin work. The Contract Completion

Time shall begin on the commence work date in the Notice to Proceed and the Contractor shall complete all work within the Contract Completion Time.

The Contractor shall unload the equipment in a timely manner upon its delivery to avoid delaying the shipper. If the unloading process is delayed by the Contractor, the Contractor shall be responsible to the Owner for any associated costs that the Owner incurs.

Once all the new Grit and Grease Removal Equipment is unloaded, and the Contractor carefully verifies that all needed equipment is present on the site, the Contractor shall obtain the Owner's authorization to take the existing Grit and Grease removal equipment out of service. The Contractor at his discretion may then begin the removal of the existing grit and grease removal equipment, but he shall not be required to immediately take the existing equipment out of service even though the Contract Completion Time is running. The Contract Completion Time will not be extended regardless of whether or not the Contractor takes the existing Grit and Grease removal system out of service when first allowed. Once the Contractor takes the existing Grit and Grease removal system out of service, he shall be allowed a twenty-four (24) calendar day out-of-service period (1) to completely install the new equipment (including but not limited to electrical and SCADA work), (2) to obtain written approval from Parkson/Schreiber of proper installation (to be able to permanently place the new equipment into proper service), and (3) to actually place the new equipment into permanent service. If the Owner sets the commence work date prior to the delivery date of all equipment (to allow work to begin before all equipment is delivered), and if the Owner subsequently determines that the subsequent delivery of the remaining equipment directly caused the Contractor to exceed the allowed out-of-service period, the Owner may extend the allowed out-of-service period. Should the Contractor fail to complete all these tasks within that allotted period, he shall be assessed a "Loss-of-Service" charge of $150/day for each day that any of those tasks remain incomplete. This "Loss-of-Service" charge will apply even if the Contractor completes the total project within the Contract Completion Time. The "Loss-of-Service" charge is separate and distinct from the liquidated damages charge that the Contractor will incur if he exceeds the Contract Completion Time. Liquidated damages are addressed in the Special Provisions.

There is only one grit and grease removal facility at the Pelham WWTP. Therefore once the existing equipment is removed from service, there is no provision for grit and grease removal until the new equipment is installed and made properly operational. The Contractor shall minimize the amount of time that the WWTP does not have capability to remove grit and grease. Thus the Contractor shall carefully plan and perform his work so that once the existing equipment is removed from service, the new equipment can be installed and made operable in a timely manner not exceeding the allowed loss-of-service period stated above. The Contractor shall ensure that everything is onsite (material, equipment, miscellaneous, tools, etc.) before the existing system is removed from service. The Contractor shall assign sufficient personnel and equipment to the project to allow him to expeditiously complete all the work. The Contractor shall consider this project to be an important priority once the existing system

has been removed from service. The Contractor is responsible for coordinating in a timely manner with his electrical subcontractor. The Contractor is also responsible for coordinating in a timely manner with Parkson/Schreiber so that they will be present when needed to assist with and inspect the installation and to assist during equipment startup. It is important that the new equipment be made fully and properly operable as soon as practical after the existing equipment is removed from service.

5.0 Unloading & Storage of New Equipment from Parkson/Schreiber:

Coordinate with Parkson/Schreiber regarding equipment delivery. The Contractor shall provide all equipment and labor needed to properly, promptly, and safely unload all equipment from the delivery truck (or trucks) when it (or they) arrives at the Pelham WWTP site. The Contractor shall be responsible for all deliveries, including if the Owner allows for the equipment to be delivered on more than one delivery day to expedite the start of the work. The Contractor shall take responsibility for the equipment while it is on the delivery truck (or trucks) and the Contractor shall be solely responsible for properly unloading and storing the equipment. The Contractor shall inspect all equipment while it is still on the delivery truck and shall immediately notify Parkson/Schreiber (by both phone (both to 205-655-7466 and to 954-917-1894) and by email, the shipper, the Engineer, and the Owner of any damages. The Contractor shall also carefully and thoroughly document any and all damages by detailed photographs.

The concrete surfaces supporting the rails (which support the grit bridge) are approximately 18 feet above the adjacent ground. The top of the grit discharge trough (over which the bridge and other components must be lifted) is approximately 21 feet above the adjacent ground.

Coordinate with Parkson/Schreiber in a timely manner regarding the recommended method of lifting the equipment from the delivery truck (or trucks). Properly support the new equipment during unloading and storage to prevent damage, improper stress, or warping, etc. The Contractor shall be responsible for proper unloading, storage, installation, and startup. Follow all instructions and recommendations provided by Parkson/Schreiber. Parkson/Schreiber advises that the heaviest pieces of each type to be lifted are as follows:

Bridge (w/o pump) – 3,500 lb. Note that this will be an awkward piece to lift. See the Schreiber submittal drawing P3300000201 sheet 2 of 3 for a general representation of the bridge.
Pump and Rails – 600 lb.
Skimmer Assembly – 700 lb.
Heaviest Anchor Plate (for Rails) – 280 lb.
Heaviest Rail – 250 lb.

Coordinate with the Owner and the Engineer for the temporary storage location of the Grit and Grease removal equipment. Do not interfere with the access to the existing screening, grease, and grit dumpsters. These must be accessed by large trucks and dumped on a regular basis. Guard new equipment with prominent reflective safety drums and other

measures to provide effective protection. Provide suitable protective barriers as soon as equipment is unloaded from delivery trucks.

Electrical components shall be suitably protected by the Contractor to prevent rain or moisture intrusion. The new Main Grit and Grease Control Panel (GGCP) and fixed festoon junction box (GGJB) shall be stored indoors until installation.

The Grit Pump shall be stored such that the free end of its electrical cable(s) will always be above the maximum possible water elevation for the location where it is stored. Further, the free end of its electrical cable(s) shall always be sealed to prevent moisture from wicking into the cable. The Contractor will be responsible for installing the grit pump (& its associated lift assembly and discharge piping and components). During installation of the pump, always keep the free end of the pump cable above the top of the wall of the grit chamber so that if the grit chamber accidentally fills with water, it cannot enter or be wicked into the pump cable.

6.0 Components Being Reused:

The following is a partial listing of some of the items in the vicinity of the work that are being reused. The Contractor shall take care not to damage them:

Handrail separating the Grit and Grease bridge from the walkway along the grit chamber. Other handrail on the concrete structure is also being reused.

Air piping, including the header, drop legs, diffusers, and supports, etc.

Flexible baffles suspended between the grit chamber and the grease chamber.

Grease ramp at the discharge end of grease chamber.

Support stand and backboard for Main Grit and Grease Control Panel (GGCP).

Canopy over support stand and Main Grit and Grease Control Panel (GGCP).

Festoon Concrete Columns including the assemblies to which the stainless-steel festoon cable attaches.

Electrical wiring (including power and grounding) from ground level MCC-2 to the Main Grit & Grease Control Panel (GGCP).

Electrical wiring from ground level Grit Classifier Starter in MCC-2 to the Main Grit & Grease Control Panel (GGCP).

SCADA wiring from SCADA system to the Main Grit & Grease Control Panel (GGCP).

Slide gates.

Screens #1 & #2 and Compactor/Washers #1 & #2 and all controls & components associated with the screening process.

7.0 Demolition:

Note: Prior to initiating demolition work and throughout the entire installation process, the Contractor shall use his own padlocks to lock circuit breakers in the "Off" position for equipment, panels, or circuits, etc. that he does not want to be powered. This shall include but not necessarily be limited to the appropriate circuit breakers in MCC-2 that power the existing Main Grit & Grease Control Panel (GGCP) and the existing Grit Classifier. The Contractor shall also beware that there is a 120-volt Grit Classifier Control Circuit that is apparently routed between MCC-2 and the existing Main Grit & Grease Control Panel (GGCP). This circuit may be powered from the Control Power circuits that are powered from LP-D. Other control circuits must remain powered so that other WWTP components can operate. It shall be the responsibility of the Contractor to determine the circuits that must be de-energized and to do so.

Note: Demolition shall not be initiated until the Contractor has carefully verified that all needed Grit & Grease Removal Equipment is present onsite and is in acceptable condition. Insure everything is onsite (material, equipment, miscellaneous, tools, etc.) before the existing system is removed from service. Additionally, once the Contractor initiates demolition, he shall prosecute the demolition and all other work in a manner such that the new equipment can be placed into service as soon as practical. Carefully plan all work such that the time from when the existing Grit and Grease equipment is removed from service to the time at which the new equipment is placed into operation is minimized. There is no provision for removing grit and grease when the Grit and Grease equipment is not in operation.

Note: Once the existing Grit and Grease Removal Equipment is taken out of service, the wastewater flow must be diverted around the Grit and Grease chamber to prevent the accumulation of grit in the Grit Chamber that would have to be manually removed. The Contractor shall coordinate with the Engineer and WWTP Personnel, and under the guidance of the WWTP Personnel, he shall operate the appropriate gates to cause the screened wastewater to be diverted around the grit and grease chamber. Additionally, under the guidance of the plant personnel the Contractor shall operate the appropriate valves to cause the Filter Backwash Water to be diverted away from the Grit Chamber.

8.0 The following is a partial listing of some of the items being demolished:

Grit and Grease bridge (including but not limited to grit pump, grit discharge piping from pump to grit trough, grease skimmer, panel, wheels, etc.)

Main Grit and Grease Control Panel (GGCP). Before and during removal of the existing Main Grit and Grease Control Panel (GGCP), use care to protect wiring entering that panel from MCC-2 & SCADA as that wiring is being reused and must be properly reconnected to the new Main Grit & Grease Control Panel (GGCP). Before disconnecting wiring from MCC-2 and SCADA, the Contractor shall carefully determine, identify, and label the purpose of the wiring as it will be the Contractor's responsibility to properly reconnect the existing wiring to

the new panel so that running and fail signals to the SCADA as well as power and control circuits will correctly serve their intended purposes.

Note that there are multiple hot circuits to this Main Grit & Grease Control Panel that will not be interrupted when the main circuit breaker is turned off. These hot circuits include, but may not be limited to, the existing control circuit from the Grit Classifier and multiple existing SCADA circuits. The Contractor shall verify that he has determined and interrupted all applicable circuits, including those that may be powered only intermittently. It is believed that all control circuit and all SCADA circuits are 120 volts so proper precaution must be utilized by the Contractor. Note that existing circuits may not be labeled or may not be correctly labeled.

Note that there is an existing red label on the existing Main Grit & Grease Control Panel that states "CAUTION – PANEL IS FED BY MORE THAN ONE SOURCE OF ENERGY".

Festoon support cable and electrical cables (Note the Festoon Cable Brackets at the Festoon Columns are being re-used.)

Rails (includes but is not limited to rails, hold-down devices, rail baseplates, splice plates, rail stops, anchor bolts (which the Contractor shall cut off flush and/or grind flush with the adjacent concrete floor), and grout). Clean up debris and vacuum dust, etc.

The Contractor shall be responsible for properly disposing offsite of all existing equipment and components that are removed unless Pelham specifically requests to retain specific items. For any items that are determined to be retained by Pelham, the Contractor shall move them to a location on the WWTP site that is designated by Pelham and shall set them in a secure manner such that they will not accidentally turn over and damage other equipment or injure personnel.

Clean all grit, sludge, grease, rags, and other materials from the grit and grease chambers (including components within the chambers such as air piping, diffusers, baffles, & scum beach) before the installation of the new equipment.

9.0 Overall Summary of Installation Work to be Performed (Partial Listing):

Note: If the Contractor detects any deficiencies or problems with the equipment manufactured by Parkson/Scheiber and provided by Pelham to the Contractor for installation, he shall promptly give both verbal and written notice to the Engineer and to the City of Pelham.

Note that the Owner's Contract with Parkson/Schreiber requires Schreiber to provide field services for up to 2 days for Installation Assistance (to assist and direct the installer in the proper assembly and connection of equipment), and up to one day for Mechanical and Process Start-Up (to inspect installation and train Purchaser). If the Contractor requires additional assistance from Parkson/Schreiber, he shall be responsible for the cost of such assistance.

The Contractor shall provide all needed materials and appurtenances, etc. not supplied by Parkson/Schreiber. This will also include but not be limited to, the electrical wiring and conduit, etc., not supplied by Parson/Schreiber.

The Contractor shall lock off power with his own padlocks to ensure that power cannot be turned on at any time to existing or new equipment unless the Contractor wants the power turned on. The Contractor shall keep the power locked off unless the equipment is ready for normal operation.

Install new rail baseplates (galvanized & continuous for full length of rails), rails (2 sets, each approximately 86' long), rail hold-downs (i.e. clips, approximately 140 in number), rail splices (approximately 8), rail stops (4), grout, and anchor bolts in correct locations and correct elevations. Install anchor bolts (approximately 140 bolts, 5/8" diameter, & approximately 3 3/8" hole depth) and grout in strict accordance with their manufacturer's instructions. Coordinate anchor bolt locations to avoid drilling into the cut-off remnants from the original anchor bolts. The anchor bolts shall be provided by Parkson/Schreiber and may be either adhesive or expansion type anchors. The grout shall be iron-free, non-shrink grout and shall be provided by the Contractor. The grout shall be installed under the rail baseplates for their entire length and width. The rails must be installed on the correct rail-to-rail spacing, with the rails square with respect to each other. All rails shall be at the correct and same elevation. Gaps between rail segments and components shall be as established by Parkson/Schreiber. Paint rails (except top where wheels contact the rails), hold-downs (i.e., clips), splices, rail stops and other metallic components that are not stainless steel or galvanized. Where part of the component to be painted will not be accessible for painting all surfaces after installation (e.g., the splices and the hold-down clips), fully paint the inaccessible surfaces prior to installation so that all surfaces (including hidden surfaces) are protected by paint.

10.0 Install New Bridge:

Provide initial lubrication if not already provided by Parkson/Schreiber.

Install components onto bridge that are not shipped assembled to the bridge, including but not limited to the grit pump (& its supports, components, and piping) and the grease skimmer.

Provide and install a permanent engraved sign on the existing access gate through the handrail to the traveling bridge. Provide aluminum bracing for sign attachment onto the gate. The sign shall be approximately 18" long by 12" high and attached (with SS screws) as needed for rigidity. The sign shall read:

Danger:

Authorized Personnel Only.

Equipment begins moving silently and operating automatically with no warning.

At the gate through the handrail to gain access onto the traveling grit bridge, blast to remove old yellow paint and re-paint area from gate to parked bridge with yellow and black striping using paint that is recommended for masonry.

Provide and install a permanent engraved sign on Main Grit & Grease Control Panel. The sign shall be approximately 5" long by 4" high and be carefully attached in a waterproof manner with SS screws. The sign shall read:

> The 480 Volt Power to this panel is obtained from MCC-2 located under the canopy adjacent to the Grit & Grease blowers and Influent Splitter blowers.
>
> Other power sources are obtained elsewhere.

Tighten the nuts sufficiently to remove looseness on the anchor bolts for the existing Main Grit & Grease Control Panel (GGCP) support stand and the canopy support columns. Do not overtighten.

There is some rust in various locations on the existing galvanized electrical panel support stands and backboard for the Main Grit and Grease Control Panel (GGCP). Sand and/or lightly blast support stands and backboard (to which the new panel will mount) to remove all rust and spray the entire support stand/backboard assembly with at least 2 coats of cold galvanizing with maximum zinc content. Prepare the existing surface and apply the cold galvanizing in accordance with the manufacturer's instructions and in a manner to minimize future corrosion. Apply cold galvanizing to remainder of area (i.e. the areas without rust) to achieve as uniform finish and appearance as practical. Apply the same process and treatment to the attachment plates and anchors loops on the concrete festoon columns where the new festoon support cable will be attached.

Adjust all equipment per recommendations of Parkson/Schreiber. This includes but is not limited to setting the grit pump at the correct depth and the upper and lower settings for the grease skimmer arm and squeegee. Calibrate jack and depth indication to show exact distance pump is above the floor. Provide photos showing ruler by pump and simultaneous depth indication.

Assemble and install new festoon support cable, cable carriers, festoon cables (3 cables, each with 12 separate conductors), and other components (provided by Parkson/Schreiber).

Install new main Grit and Grease control panel (GGCP) under canopy. Connect wiring from MCC-2 for power to panel, to grit classifier starter (in MCC-2), and to SCADA (for status and alarms).

Install new Fixed Junction Box (4' above concrete floor)(provided by Parkson/Schreiber) and install new wiring in aluminum conduit with aluminum or SS fittings and SS hardware from new main Grit and Grease Control Panel (GGCP) to the new Fixed Festoon Junction Box. This conduit and wiring must be provided by the Contractor. Provide a dedicated

conduit for the overtemperature and leak detection wiring. Install three (3) sets of cables supported by Festoon system between new Fixed Festoon Junction Box (GGJB) and new Festoon Junction Box (GGJB) that was factory-mounted on the new bridge.

Provide permanent markers on each end of all wiring to facilitate troubleshooting and future maintenance. Provide As-Built drawings showing wire numbers and termination points to the Engineer and Owner.

Connect grit pump wiring (power, overtemperature, and leak detection) from pump to panel(s) on bridge. Ensure that the overtemperature and leak detection circuits are properly terminated.

Provide ground wiring to each set of bridge rails, the festoon support cable, the new main Grit Grease Control Panel (GGCP) (use #4/0 ground for GGCP), the GGCP support stand, the canopy over the GGCP, and the new MCC-2 Surge Protection. Ground wiring shall be #2/0 minimum with #4/0 used for the GGCP and the main ground cable down the tank to the grounding grid. Extend ground system to existing ground grid around grit and grease tank, clean, and weld. Install supplemental triad system w/ 3 – 10' copper rods if existing ground grid cannot be located. Beware of existing underground utilities in the vicinity that are not shown on the drawings. Also connect the existing bare ground cable to the new main Grit Grease Control Panel (GGCP). Ground the handrails along the south edge of the grit chamber and along the south side of the walkway.

All wiring (including all grounds) must be installed in a manner such that no potential tripping hazard or potential walking obstruction or potential headroom obstruction is created. All electrical conduit shall be aluminum. All fittings, appurtenances, and miscellaneous hardware, etc. shall be aluminum or stainless steel. All wiring and insulation shall be rated for wet areas. Wiring to motors shall be RHH/RHW/USE. Other wiring may be THHN/THWN. Wiring shall be copper unless noted otherwise.

Wiring from the Main Grit & Grease Control Panel (GGCP) to the final termination points shall be:

3 - #12 with #12 Ground Typical for each of 3 sets to the bridge for the Grit Pump, Bridge Drive, and Grease Skimmer,

3 - #10 with #10 Ground for the Grit Classifier power circuits in MCC-2, and 5 - #12 for Grit Classifier in operation and Grit Classifier alarm circuits, and running indication, all in 1.25" aluminum conduit,

#14 for all other loads, signals, alarms, and controls, etc.

The existing Grit Classifier is presently powered from MCC-2. When the new main Grit & Grease Control Panel (GGCP) is installed, it will contain a new power supply and starter for the existing Grit Classifier. As noted above, the Contractor will have to provide and install a new power supply circuit from the new main Grit & Grease Control Panel (GGCP) to

the circuits leaving MCC-2 enroute to the existing Grit Classifier. The Contractor shall determine the appropriate circuits in MCC-2 to the Grit Classifier & to the SCADA to which he shall connect the new circuits from the new Grit & Grease Control Panel. Clearly Re-label the Grit Classifier Circuit Breaker & HOA Switch in MCC-2 to indicate that they no longer power or control the grit classifier. Re-label other associated components as applicable. Determine & implement the required modifications and provide As-Built Drawing showing how the existing Grit Classifier circuitry in MCC-2 was modified to accommodate new Grit Classifier power originating from new Main Grit & Grease Control Panel (GGCP).

Provide a new permanently engraved label on the MCC-2 bucket for the Grit Classifier: "Warning: The power circuit to the Grit Classifier originates in the Main Grit & Grease Control Panel (GGCP) located adjacent to the Grit Chamber and passes through MCC-2 enroute to the Grit Classifier. Turning off the main breaker for MCC-2 does not interrupt the power entering MCC-2 from the Grit & Grease Control Panel or the power for the Grit Classifier. Additionally, turning off the main breaker for MCC-2 does not interrupt the 120-v SCADA circuits entering MCC-2 for the Grit Classifier SCADA circuits.

At MCC-2, install a new 30 amp 3 phase circuit breaker and a new Surge Protective device manufactured by Surge Suppression, Inc., to protect MCC-2 and the circuit to the new main Grit & Grease control panel (GGCP), model: CKLA3N4C1-LP-21. This is Not included in the equipment provided by Parkson/Schreiber. It must be provided by the Contractor. Mount such that the ground connection and other connections are as short as possible.

Test all E-stops to ensure that all equipment immediately stops operation when the E-stop is pressed.

Verify that the grit classifier starts operation whenever the grit pump is operating and continues for a short time period after the grit pump stops.

After the new equipment has been installed and is ready to operate, the Contractor shall coordinate with the Engineer and Plant Personnel, and under the guidance of the plant personnel, he shall operate the appropriate gates to cause the screened wastewater to be sent to the grit and grease chamber. Additionally, under the guidance of the plant personnel the Contractor shall operate the appropriate valves to cause the Filter Backwash Water to be returned to the Grit Chamber.

Demonstrate that equipment operates properly in all modes of possible operation (manual and automatic). Verify that all switches and indicator lamps in new Grit & Grease Control Panel (GGCP) operated properly. In cooperation with Parkson/Schreiber, demonstrate the capability for the grease skimmer to be lowered for skimming only on selected passes of the grit bridge. Unless determined otherwise during startup, after demonstration set skimmer controls for skimmer arm to lower only on every third pass of the bridge. Also adjust the skimmer and its components such that the optimum amount of grease is pushed up the ramp and

into the grease hopper while excess water is allowed to drain around the skimmer blade and re-enter the main grease chamber. This adjustment may require the Contractor to make some field modifications to the squeegee part of the skimmer.

The Contractor shall test all modes of operation to ensure that both factory wiring and field wiring is proper, and that equipment performs properly and as-intended. Promptly notify Engineer and coordinate with Parkson/Schreiber for any adjustments that may be needed to their work.

When installation is complete, coordinate with Schreiber to obtain a written certification of proper installation and provide it to the Engineer.

Provide other miscellaneous work not contained in this general overall description as needed for a complete and properly functional project. As is typical on a project of this type, the Contractor shall anticipate that he will encounter instances where cutting, grinding, adjustments, or other such work will be needed to allow the equipment to fit and perform properly. The Contractor shall provide such work promptly and without claim for extra payment or extra time.

Cleanup anchor bolt drill hole dust (vacuum) and other debris, etc., remaining from demolition and installation (including but not limited to electrical work).

11.0 Notes Regarding Appendices to the Specifications:

Several appendices are included to assist the Bidders in understanding the project. The "Equipment Purchase Bid Package" appendix is Pelham's solicitation for bids for the Grit & Grease Removal Equipment. This was a bid for equipment only and no installation work was included. The "Schreiber Proposal – Notice of Award – Acceptance of Award" appendix is the Schreiber (i.e., Parkson/Schreiber) proposal in response to Pelham's request for bids as well as Pelham's Notice of Award to Schreiber (i.e., Parkson/Schreiber), and Schreiber's (i.e., Parkson/Schreiber's) acceptance of Pelham's award. The "Excerpts from Parkson/Schreiber Submittal" appendix is an excerpt from the Schreiber submittal that briefly describes some of the items being provided by Schreiber, as well as some of the items being reused, and some of the items not included in Schreiber's scope. Where there may be inconsistencies between the items in the appendices and the description in other items in the specifications or drawings, the bidders shall assume that the more costly method of performing the work will prevail.

STANDARD SPECIFICATION
FOR
PAINTING

SECTION 1-4

1.0 GENERAL

Paint work shall consist of furnishing all labor, materials, scaffolding, and equipment necessary for the complete finish coating of all equipment, piping and appurtenances, exposed structural work, concrete surfaces, masonry surfaces, woodwork, miscellaneous iron work and similar items except those surfaces specifically excepted. Where items are not specifically mentioned as requiring painting work but not specifically excepted, they shall be finished in the same manner as specified for similar items. It is the intent of these Specifications that the painting work be complete, and that no items of equipment, structural components, or surface normally requiring finish coatings be left unpainted. In general, exterior brick surfaces, concrete walls of basins, factory finished items, aluminum, stainless steel, and galvanized items, shall not be painted, except as hereinafter specified. Gypsum wall board shall be painted as noted on the Drawings or as specified in the Standard Specification for Gypsum Wall Board.

2.0 STANDARD OF QUALITY

Products of Tnemec Company, Inc., North Kansas City, MO is established as a standard of quality. Equal products may be approved by the Engineer. An "or equal" product will not be approved that decreases from that specified hereinafter recommended dry film thickness or the number of coats to be applied, or that changes the generic type of coating, or that fails to equal or exceed the manufacturer's printed performance data of the specified product(s) as specified hereinafter. Tank painting shall comply with AWWA D-102, Steel Structures Painting Council SSPC-PA2 as applicable, approved paint manufacturer's specifications, and as specified herein.

All paint used on surfaces which will be in contact with potable or treatable water shall be guaranteed by the paint manufacturer to be suitable for the intended surface and not to be a hazard to health. Any paint which cannot be so guaranteed, whether or not specified by manufacturer and product designation, shall not be used.

All paint used for intermediate and finish coats at sewage treatment plants and sewage pumping stations where hydrogen sulfide may be present, shall be guaranteed by the paint manufacturer to be fume proof and suitable for sewage plant atmosphere containing hydrogen sulfide. Any paint that cannot be so guaranteed shall not be used.

3.0 PREPARATION OF SURFACES

The Contractor shall properly prepare surfaces prior to proceeding with work and shall be held responsible for any poor work caused by improperly prepared surfaces. The

application of the first coat of paint by the Contractor shall be construed as an acceptance by him of the responsibility for the condition of the base. Preparation of surfaces shall be as generally outlined below unless recommended otherwise by the manufacturer and approved in advance by the Engineer.

All surfaces shall be thoroughly cleaned and free from all dirt, oil, grease, rust, weld slag, projections, and other foreign matter before priming. This cleaning shall be done by the use of sandpaper, steel scrape, wire brush, or sandblasting as required. Where required, metal surfaces shall be cleaned with a liquid solvent to remove dirt or grease before application of paint materials. Metallic surfaces on which fluids have been used shall be thoroughly cleaned before any paint is applied. Where rust or scale is present, the Contractor shall prepare surfaces in accordance with these Specifications. He shall sandblast or thoroughly wire brush surfaces before priming. Primer shall be applied immediately after surface preparation within the same day and before rusting has begun. The Contractor shall repair all items that have been shop primed or finished coated (excluding items to be prepared and coated onsite) that have become damaged.

A. Metal

1. All Metal. Grind smooth and remove rust, scale, and foreign materials.
2. Submerged Metal. SSPC-SP10-63, Near White Blast.
3. Non-submerged Metal. SSPC-SP6-63, Commercial Blast.
4. Machinery and Equipment. SSPC-SP2-63, Hand Tool.
5. Non-ferrous Metal. All non-ferrous metal shall be SSPC-SP1 solvent cleaned followed by abrasive blasting in accordance with SSPC-P 7 Brush Off Blast Cleaning to create a uniform profile of 1.0 – 2.0 mils.
6. Submerged Ductile Iron (OD): NAPF 500-03-04: "External Pipe Surface Condition".

B. Masonry. Repair damaged areas, brush-off blast, and wash to remove loose materials.

C. Submerged Concrete Surfaces. Abrasive blast to provide adequate profile for coating system (Reference SSPC-SP 13. ICRI CSP 5).

D. Wood. Patch damaged areas, sand, dust, and dry before paint application.

E. Tar-Coated Surfaces. Tar-based coating shall not be allowed.

Steel, ductile iron, cast iron, and other ferrous metal surfaces not to be immersed in liquid shall receive one shop coat of N140 Pota-Pox Plus applied at 7.0 - 9.0 mils DFT. Such surfaces shall be prepared for shop coating in accordance with Steel Structures Painting Council Specification or NAPF Standards referenced herein. Shop coats shall be compatible with primers and finished coats specified herein for subsequent field application. After receipt of such components, and proper repairs are completed if necessary, surfaces of components shall be prepared as follows:

- Shop Primed Steel Surfaces Submerged or in Vapor Zone Service (i.e., within a 10 ft envelope along/around contained process streams/water-levels that are open to atmosphere and everywhere within an enclosed process structure): All areas damaged during shipping and installation shall be abrasive blast cleaned in accordance with SSPC-SP 10 Near White Blast Cleaning. All areas of intact shop primer shall be abrasive blast cleaned in accordance with SSPC-SP 7 Brush-Off Blast Cleaning to provide a unform anchor profile. All edgers shall be feathered.
- Ductile Iron Pipe Surfaces Submerged or in Vapor Zone Service: All areas damaged during shipping and installation shall be abrasive blast cleaned in accordance with NAPF 500-03-04: "External Pipe Surface Condition". All areas of intact shop primer shall be abrasive blast cleaned in accordance with SSPC-SP 7 Brush-Off Blast Cleaning to provide a unform anchor profile. All edgers shall be feathered.
- Non-Submerged Steel and Ductile Iron Surfaces: All shop primed surface shall be power washed in accordance with SSPC WJ 4 Light Cleaning (minimum 3,500 psi) to remove all dirt, dust, chalk, loose paint, as well as any other foreign matter. All areas where the shop primer has been damaged shall be cleaned in accordance with SSPC-SP 11 Power Tool Cleaning to Bare Metal or abrasive blast to an SSPC-SP 6 Commercial Blast Cleaned Surface.
- Galvanized Steel: Where galvanized surfaces are specified to be painted or coated, such surfaces shall be abrasive blasted in accordance with ASTM D 6386 to provide a uniform 1.0 – 2.0 mils anchor profile

Where steel, cast iron, ductile iron, or other ferrous metals (such as motor housings, stands and similar items) are received on the job with finish coats already applied, cleaning shall be in accordance with Steel Structures Painting Council Specifications (SSPC-SP1, SSPC-SP2, SSPC-SP7), as required. A tie coat shall be applied in accordance with the painting schedule. Factory applied coatings shall be compatible with field coatings specified. Steel and other ferrous metals surfaces to be immersed in liquid shall be sandblasted in the field in accordance with Steel Structures Painting Council Specification for While Metal Blast Cleaning (SSPC-SP10). Ductile iron surfaces which will be immersed in liquid shall be cleaned in accordance with SSPC-SP6 Commercial Blast Cleaning.

Concrete and masonry surfaces shall be allowed to age for at least 30 days before coatings are applied. Concrete surfaces (walls, floors, beams, columns, ceilings) specified to be painted or coated shall be properly cleaned and etched to secure a granular surface free from glaze (SSPC-SP 13/ICRI CSP 1-2). When etching has been completed, the surface shall be rinsed, tested, and neutralized if required. Concrete surfaces specified to receive epoxy coatings shall be sandblasted or mechanically abraded in accordance with SSPC-SP 13 /ICRI CSP 3-5 (or as recommended by the manufacturer) to remove all laitance and surface film and shall produce a profile suitable for the specified coating. Where it is found that etching of high density precast concrete items (such as hollow core roof slabs) shall not provide adequate grip for standard masonry coatings, the Contractor shall use a coating particularly suitable for application on such surfaces, and such coating shall be applied at no extra cost to the Owner. Concrete block masonry surfaces shall be cleaned and prepared for painting by scraping or wire brushing (SSPC-SP2) or by air blasting. Concrete floors, where

specified in the Plans or Specifications to be painted, shall be prepared by mechanical means in accordance with the manufacturer's instructions. All concrete to be coated shall be tested for moisture vapor transmission in accordance with ASTM F1869. Should readings in excess of 3lb per 1,000 square feet be obtained, the surface shall be treated with Tnemec 208 Epoxoprime MVT in accordance with the manufacturer's instructions.

The Contractor shall clean wood surfaces to be painted of all dirt, soil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. He shall smooth these finished surfaces exposed to view, using sandpaper and shall dust them off. He shall scrape and clean small, dry seasoned knots before application of the priming coat. After priming, he shall fill holes and imperfections in finish surfaces with putty or plastic wood filler. He shall sandpaper smooth the filled holes or imperfections when the putty or wood filler has dried and cured.

4.0 APPLICATION

Unless approved in writing by the manufacturer and agreed upon in advance by the Engineer, no painting will be allowed until the paint manufacturer's representative is on the job. All painting will be accomplished in accordance with the paint manufacturer's specifications. The paint manufacturer's representative shall test all paint mil thickness and holidays in the presence of the Engineer. The Contractor will be required to perform Holiday Testing as soon as the work is sufficiently cured according to the manufacturer's recommendations. All pinholes and deficiencies will be repaired. Any coating not meeting specifications will be reworked. Adequate ventilation which will effectively remove solvents shall be provided for proper drying of paints on interior surfaces.

It shall be the responsibility of the Contractor to ensure the compatibility of the field painting products which will be in contact with each other or which will be applied over shop painted or previously painted surfaces. Paint used in successive field coats shall be produced by the same manufacturer but with varying colors and shades. Paint used in the first field coat over shop painted or previously painted surfaces shall cause no wrinkling, lifting, or other damage to underlying paint.

No coating or paint shall be applied when (1) the surrounding air temperature or the temperature of the surface to be coated or painted as measured in the shade is below that recommended by the manufacturer and a minimum of 50ºF, (2) when the substrate temperature exceeds the maximum temperature recommended by the manufacturer, or (3) when the substrate temperature is less than 5ºF above the dew point. Dew point shall be measured by use of an approved instrument in conjunction with the U.S. Department of Commerce Weather Bureau Psychometric Tables. Paint shall not be applied to wet or damp surfaces and shall not be applied when the relative humidity exceeds 85 percent. The painting contractor is responsible for making himself aware of the weather conditions that would preclude him from painting under the above conditions.

5.0 SURFACES TO BE PAINTED

Except as specifically excluded below or indicated in the Plans. All metal subject to rust, piping, equipment, wood, and concrete masonry, and outdoor exposed (non-insulated) PVC/CPVC piping shall be painted in accordance with the coating systems specified herein. Unless otherwise specified or indicated in the Plans, the following surfaces shall be left unpainted:

a. Exposed surfaces of aluminum, except exposed ductwork.
b. Polished, finished, or unfinished stainless steel, except flashings and counter flashings.
c. Galvanized surfaces, except piping, exposed interior conduit, and exposed ductwork.
d. Piping concealed in inaccessible plumbing chases and above suspended ceilings.
e. Rubber and plastics.
f. Acoustical panel ceilings.
g. Face brick.
h. Exterior concrete more than one foot below finished grade or normal low water level.
i. Surfaces specified to be factory finished.
j. Existing surfaces not noted specifically in the Plans or Specifications.

All exposed interior and exterior poured-in-place concrete for walls, beams, columns, and precast concrete members (i.e. double tees, hollow core slabs, etc.) for non-water containing structures shall be painted to one foot below grade on the exterior and to the horizontal slab/surface on the interior with Thorocoat, Fine by BASF, Tex Cote or Tnemec Series 157 Enviro-Crete. For water containing structures, two coats of Thoroseal by BASF shall be used to one foot below grade and one foot below normal low water levels. Underground vaults, wet wells, electrical chases and other similar areas do not require coating unless shown on Drawings. Coating shall be applied per the manufacturer's recommendations as a two-coat acrylic based system achieving a dry film thickness of 12-16 mils. Prepare a 5' by 5' complete a test section to demonstrate the final color prior to application of the coating system. Coating shall not proceed until the test section is approved by the Engineer.

On any single structure, use the same product for all areas to be coated with a specified color. Do not mix colors or products from more than one source.

Curing compound on structural concrete construction that is to receive a protective coating shall be prohibited. The applying contractor shall notify other trades of this requirement. The Engineer may waive this prohibition and allow use of a curing compound meeting the requirements of the coating manufacturer. Where curing compounds are used, Contractor shall assume complete responsibility for removing compound as required to result in an acceptable coating finish. Existing items requiring coating will be set forth in the Plans.

Cementitious crystalline waterproofing shall be applied where called for on the Plans. Crystalline waterproofing shall form non-soluble crystals of dendritic fibers within the pores and capillary tracts of concrete. Crystalline waterproofing shall be the Xypex line of

products as manufactured by Xypex Chemical Corporation, or Engineer approved equal. Surfaces receiving waterproofing coating shall be prepared according to manufacturer's recommendations. Coating shall be slurry applied in accordance with the manufacturer's recommendations and consisting of the following:

A. 1st Coat: Xypex Concentrate at 300 square feet per 60lb pail or 1/16".
B. 2nd Coat: Xypex Modified at 300 square feet per 60lb pail or 1/16"

All painting shall be in accordance with the Engineer/Owner's color scheme selected during construction. Where specific color scheme is not required by Owner/Engineer during construction, the scheme specified herein shall apply. Many different color variations may be required for architectural effect, piping identification, or other reasons required by the Engineer/Owner. The painting contractor shall allow sufficient time during construction and the submittal process for color scheme selection, coordination, and delivery of coatings.

Factory finished surfaces which have become damaged prior to acceptance by the Owner shall be spot primed and repainted with materials equivalent to those used in the original application. If, in the opinion of the Engineer, spot repair of the damaged area is not satisfactory, the entire surface or item shall be repainted as required by the Engineer.

Throughout the work the Contractor shall use drop cloths, masking tape, and other suitable measures to protect all surfaces from cleaning operations, accidental spraying, spattering, or spilling of paint. The Contractor shall be responsible for and shall correct and repair damage resulting from his operations or the operations of those responsible to him. Paint deposited on surfaces which are not being painted at the time shall be immediately removed. Bituminous paints spilled or dropped on any material except metals shall be surface cleaned and spot painted with aluminum paint prior to applying the specified paint. Exposed concrete or masonry not specified to be painted which is damaged by paint shall be either removed and rebuilt or, where authorized by the Owner, painted with two coats of masonry paint.

6.0 MISCELLANEOUS - TANKS AND BASINS

Upon completion, allow the tank to dry at least 7 days or greater if recommended by the paint manufacturer after the finish coat has been applied and before the tank is sterilized and filled with water. During this period, both the door at the bottom and at the top must remain open.

Paint is to be applied by conventional or airless spray on the interior of the tank in accordance with the manufacturer's requirements. Spray coating of the interior surface shall have an approved method for overspray protection at the discharge from the venting fan. The exterior coating shall be applied with roller or brush.

After the tank has been thoroughly cleaned of all dirt, scale, etc., and after the Engineer has approved it, the Contractor shall sterilize the structure in accordance with AWWA requirements. A series of bacteriological samples shall then be taken and delivered to the state laboratories for examination. This procedure shall be repeated until satisfactory bacteriological samples are taken. Upon receipt of satisfactory results and approval of the Engineer, the facility may be turned into the system.

7.0 MATERIALS

All materials required for painting shall be delivered in unbroken packages, bearing the brand and name of the manufacturer, and all materials shall be subject to review by the Engineer. All materials used shall be safely stored and stored in accordance with manufacturer's requirements. The Contractor shall provide access to storage space for the Engineer.

Paints approved for various surfaces shall be as manufactured as listed below. The manufacturer shall make available to the Contractor the services of a technical representative who shall be consulted with respect to drying times, cure-out times, compatibility of primers and overcoats, and miscellaneous problems that might arise during the progress of the work. No claim of the Contractor concerning the unsuitability of the materials specified or his inability to produce first-class work with the same, will be entertained, unless such claim is made in writing to the Engineer before the Contract is signed.

TNEMEC - PAINTING SYSTEMS

Item	*Prime Coat*	*Finish Coat(s)*
Masonry - Interior Non-Submerged	Fill porous surfaces with 130 EnviroFill @ 60-80 sq. ft./gal	1 Coat 113 Tneme-Tuffcoat @ 4.0 – 6.0 mills DFT. 1 Coat 297 Enviro-Glaze @ 2.0 – 3.0 mils DFT
Masonry – Exterior Above Grade	NONE	2 coats 156 Enviro-Crete @ 8.0 – 10.0 mils DFT per coat
Masonry - Exterior Below Grade	NONE	2 coats 46-465 @ 8.0 – 10.0 mils DFT per coat
Masonry - Submerged in Potable Water	218 MortarClad @ 1/16" minimum. Fill all bug holes, voids, and seal surface	22 Epoxoline @ 20 – 25 mils DFT
Masonry – Submerged in Wastewater	218 MortarClad @ 1/16" minimum. Fill all bug holes, voids, and seal surface	1 coat 436 Perma-Shield FR @ 100 – 125 mils DFT
Concrete Floors - Opaque Finish *	208 Epoxoprime MVT @ 6.0 – 8.0 mils DFT	2 Coats 280 Tneme-Glaze @ 6.0 - 8.0 mils DFT per coat
Concrete Floors - Clear Sealer *	NONE	1coat 201 Epoxoprime @ 6.0 - 8.0 mils DFT. 1 coat 295 CRU @ 2.0 – 3.0 mils DFT
Chemical Sumps *	218 MortarClad @ 1/16" minimum. Fill all bug holes, voids, and seal surface	2 coats 239SC Chembloc @ 6.0 – 8.0 mils DFT per coat.
Concrete Floors - Double * Laminate Quartz Floor	222 Deco-Tread @ 20 mils DFT-Broadcast to refusal - Repeat	One grout coat 222 Deco- Tread @ 6.0 – 8.0 mils One finish coat of 248 Everthane;@ 2.0 - 3.0 mils DFT
Wood Interior and Exterior	10-99W Primer @ 1.0 - 2.0 mils DFT	2 coats 1029 Enduratone @ 1.0 - 2.0 DFT per coat

Item	*Prime Coat*	*Finish Coat(s)*
Interior and Exterior Non-Submerged Metal	Prime: Series 91 H20 Hydro-Zinc @ 2.5 – 3.5 mils DFT Intermediate: Series 66 Epoxoline @ 2.0 - 3.0 mils DFT	1094 @ 2.0 – 3.0 mils DFT
Submerged Steel and Ductile Iron Pipe - Potable Water	Primer: Series N140-1211 Pota-Pox Plus @ 5.0 – 7.0 mils DFT.	2 coats 21 Epoxoline @ 8.0 – 10.0 mils DFT per coat.
Submerged Steel and Ductile Iron Pipe – Wastewater Open Top Structures	Primer: Series N140-1211 Pota-Pox Plus @ 5.0 – 7.0 mils DFT. Intermediate: N140 Pota-Pox Plus @ 4.0 – 6.0 mils DFT.	142 Epoxoline @ 10.0 – 12.0 mils DFT
Submerged Steel and Ductile Iron – Wastewater Closed Top Structures – Submerged and Vapor Zone	Series N140 Pota-Pox Plus @ 4.0 - 6.0 mils DFT	Finish: Series 435 Perma-Glaze @ 25.0 – 35.0 mils DFT.
Ductile Iron Pipe – Submerged and Vapor Zone Service - Wastewater	Series N140 Pota-Pox Plus @ 6.0 – 8.0 mils DFT	435 Perma-Glaze @ 25.0 – 35.0 mils DFT
Interior and Exterior Non-Submerged Ductile Iron Pipe	Prime: N140 Pota-Pox Plus @ 7.0 – 9.0 mils DFT Intermediate: Series 66 Epoxoline @ 2.0 - 3.0 mils	1094 Endura-Shield @ 2.0 – 3.0 mils DFT
Non-Submerged Ductile Iron – Vaults	Prime: N140 Pota-Pox Plus @ 7.0 – 9.0 mils DFT Intermediate: Series 66 Epoxoline @ 3.0 - 5.0 mils	Finish: 66 Epoxoline @ 4.0 – 6.0 mils
Outdoor, exposed (non-insulated) PVC/CPVC piping**	Series 20 Pota-Pox @ 3.0 – 5.0 mils DFT	Series 1070 Fluoronar @ 2.0 – 3.0 mils DFT

* *Where called for on Drawings.*

*** Surface Preparation: Clean and dry. Sand to provide a uniform, dense, surface profile of at least 1.5 mils*

Thinners shall be as recommended by the paint manufacturer. No other products will be used.

8.0 PIPING AND EQUIPMENT IDENTIFICATIONS

All installed process equipment and similar items (i.e. pumps, motors, tanks [process tanks and chemical tanks, etc.] etc.) shall have its equipment number (e.g. "1", "2", etc.) prominently painted on the equipment (or on both the inside and outside of the equipment hatch for submersible pumps). The number shall be neatly stenciled in 3" high letters. High impact plastic adhesive strips may be used in lieu of painting if they have permanent adherence.

Exposed piping and piping in accessible areas shall be identified with lettering or tags designating the service of each piping system, shall have flow directional arrows, and

shall be color coded as shown below. Colors to be used shall be verified in the submittal process and changed as directed by the Engineer at no additional cost to the Owner.

Piping shall be completely painted with the selected colors, unless approved otherwise by the Engineer. Color coded vinyl snap on markers with flow direction arrows (by Brady or equal) shall also be used on piping to be left unpainted. All other piping specified to be painted shall match adjacent surfaces, unless otherwise directed by the Engineer.

Lettering and flow direction arrows shall be provided near equipment served, adjacent to valves, on both sides of walls, and floors where pipe passes through, at each branch or tee, and at intervals of not more than 30 feet in straight runs of pipe. If, in the opinion of the Engineer, foregoing requirements will result in an excessive number of labels or arrows on a run of pipe, the number required shall be reduced as directed.

Where the outside of the pipe or pipe covering is 5/8 inch or smaller, metal tags shall be provided instead of lettering. Tags shall have the selected identifying lettering stamped in and shall be fastened to the pipe with suitable chains. Metal tags and chains shall be aluminum or stainless steel. Where tags are used, pipe shall be the color selected.

Lettering on piping shall be painted, stenciled, or snap-on markers. Snap-on markers shall be plastic sleeves, Brady “Bradysnap-On B-915" or Seton “Setmark”. Letter size shall be as follows:

Outside Diameter of Pipe or Covering	**Minimum Height of Letters**
5/8 inch and smaller	Metal Tags - 1/4 inch
3/4 inch through 4 inch	3/4 inch
5 inch and larger	2 inches

Aluminum tags shall be provided for all valves and gates. Buried valves with concrete pads shall be tagged as shown on the drawings. For all other valves, provide numbered aluminum tags fasten to valves with aluminum or stainless-steel chains. Coordinate numbering with Engineer during submittal process.

8.1 WATER PLANT AND WATER BOOSTER STATION PIPING COLOR CODE:

A. **Water Lines:**

Raw	110GN Clover
Settled or Clarified	10GN Aqua Sky
Finished or Potable	11SF Safety Blue

B. **Chemical Lines:**

Alum or Primary Coagulant	04SF Safety Orange

Ammonia	00WH Tnemec White
Carbon Slurry	35GR Black
Caustic	02SF Safety Yellow with 09SF Safety Green Band
Chlorine (Gas and Solution)	02SF Safety Yellow
Fluoride	25BL Fountainbleu with 06SF Safety Red Band
Lime Slurry	37GN Irish Spring
Ozone	02SF Safety Yellow with 04SF Safety Orange Band
Phosphate Compounds	37GN Irish Spring with 06SF Safety Red Band
Polymers or Coagulant Aids	04SF Safety Orange 09SF Safety Green Band
Potassium Permanganate	14SF Safety Purple
Soda Ash	37GN Irish Spring with 04SF Safety Orange Band
Sulfuric Acid	02SF Safety Yellow with 06SF Safety Red Band
Sulfur Dioxide	37GN Irish Spring with 02SF Safety Yellow Band

C. **Wastewater:**

Backwash Waste	68BR Twin
Sludge	84BR Weathered Bark
Sewer (Sanitary or Other)	34GR Deep Space

D. **Other:**

Compressed Air	91GN Balsam
Gas	28RD Monterrey Tile
Other Lines	32GR Light Gray

8.2 WASTEWATER PLANT AND LIFT STATION PIPING COLOR CODE:

	Generic Color	Tnemec Color I.D.
Chlorine (Gas and Solution)	Yellow	OSHA Safety Yellow (02SF)
Compressed Air	Dark Green	Balsam (91GN)
Fire Hydrant	Red	OSHA Safety Red (06SF)

Lime	Light Green	Irish Spring (37GN)
Polymers or Coagulant Aids	Purple	OSHA Safety Purple (14SF)
Potable Water	Dark Blue	Safety Blue (11SF)
Sewage Plant Effluent (Non-Potable Water)	Clay	Terra Cotta (07RD)
Sewer (Sanitary or Other)	Dark Gray	Deep Space (34GR)
Sludge (Dark Brown)	Dark Brown	Weathered Bark (84BR)
Primary Sludge	Dark Brown with	Weathered Bark (84BR)
	Yellow Label (Primary)	OSHA Safety Yellow (02SF)
Return Activated Sludge	Dark Brown with Red Label (RAS)	Weathered Bark (84BR) OSHA Safety Red (SC09)
Waste Activated Sludge	Dark Brown with Light Green Label (WAS)	Weathered Bark (84BR) Daiquiri Ice (PA30)
Primary Scum	Dark Brown with Light Gray Label (Scum)	Weathered Bark (84BR) Light Gray (IN01)
All Other Non-Process Lines	Light Gray	Light Gray (32GR)

STANDARD SPECIFICATIONS

ELECTRICAL

ELECTRICAL SPECIFICATION
FOR
GENERAL PROVISIONS

SECTION 2-1

1.0 GENERAL CONDITIONS

Related work specified elsewhere. The accompanying general conditions shall apply to and form a part of this section.

A. General Requirements: Carefully examine general conditions, other specification sections, and other drawings (in addition to Electrical) in order to be fully acquainted with their effect on electrical work.

Do all work in compliance with all applicable codes, laws, and ordinances, the National Electrical Code (hereinafter referred to as "Code"), and the regulations of the local utility companies. Obtain and pay for any and all required permits, inspections, certificates of inspections and approval, and the like.

Comply with all local codes, adopted codes, and all other local requirements.

Cooperate with other trades and contractors at job. Perform work in such manner and at such times as not to delay work of other trades. Complete all work as soon as the structure and as the structure and installations of equipment will permit. Patch, in a satisfactory manner and by the proper craft, any work damaged by electrical workmen.

The Contractor and all subcontractors shall carefully monitor all scopes of work or supply, etc. to verify all required components and devices, etc., are included. The Contractors and all subcontractors shall insure that any excluded items are included elsewhere. There shall be no extra payment for items not included.

Manufacturers shall design and provide equipment and systems that comply with all OSHA requirements and good safety practices.

The Contractor (which includes all subcontractors and suppliers, etc.) shall perform all work in a safe manner and in compliance with OSHA requirements. The Contractor shall be fully responsible for safety at the sites of the work.

B. Site Visit: The Contractor shall visit the sites to determine existing dimensions and conditions affecting electrical work. Failure to do so in no way relieves Contractor of his responsibility under Contract.

2.0 SUBMITTALS

As soon as a notice to proceed has been issued, the Contractor shall promptly initiate the preparation of all submittals for equipment whose timely delivery may impact the project. Coordinate and schedule submittals with the Engineer such that review priority can be given to those submittals where turnaround time is most important.

The Contractor shall completely coordinate submittals with all interconnecting equipment or affected equipment prior to making the first submittal. All wiring and SCADA interconnections, etc., shall be clearly shown on all submittals. The source of the power for all interconnections shall be clearly shown. Provide narratives if necessary to facilitate interpretation of control methods and interconnections. If submittals are incomplete or not fully coordinated or propose equipment with deviation from the project requirements (plans and specifications), the Engineer may reject the submittal without review.

3.0 APPROVED MATERIALS AND DEVICE PRODUCTS

Where not otherwise specified, provide only new, standard, first-grade materials throughout, conforming to standards established by Underwriter's Laboratories, Inc., and so marked or labeled, together with manufacturer's brand or trademark. All equipment shall be subject to approval of Engineer before installation. All like items and associated equipment shall be of one manufacture.

4.0 RESERVED

5.0 WORKMANSHIP

All work shall be in accordance with the National Electrical Code and the rules and regulations of the local bodies having jurisdiction. All work shall be executed in a workmanlike manner and shall present a neat and mechanical appearance upon completion. All items shall be installed straight and plumb in a workmanlike manner and care shall be exercised so that like items are mounted the same position, heights and general location. Keep site clean of accumulation of cartons, trash, and debris.

6.0 EQUIPMENT STARTUP

Prior to requesting startup or the attendance of a manufacturer's representatives for startup, the Contractor shall write the manufacturer and clearly state what work has been fully completed and what work remains to be completed. Particular attention shall be given to all interconnections to related panels, related equipment, and the SCADA system. All appurtenances and support equipment shall be ready prior to attempting startup. The Contractor shall be responsible for all delays associated with such lack of completion or coordination. Time spent by manufacturer's representatives in preparation for startup due to the incomplete work shall not count towards the time required by specifications for the manufacturer's representative to startup the equipment.

7.0 ACCEPTANCE TESTING

Upon completion of work, the entire electrical system shall be tested and shall be shown to be in perfect working condition, in accordance with the intent of the specifications.

8.0 CLEAN UP

Protect all electrical facilities from concrete splatter when concrete is being placed. Completely clean all electrical facilities, including but not limited to, inside and outside of all electrical equipment, conduits, pull boxes, and lights, etc. Thoroughly clean the interior and exterior of all electrical panels, gear, equipment, and appurtenances, etc., as necessary and prior to acceptance. Clean any dust, dirt, discoloration, paint splashes, etc. Re-clean if necessary, so that all electrical items are clean.

9.0 GUARANTY-WARRANTY

Furnish a written warranty, countersigned and guaranteed by General Contractor, stating:

A. That all work executed under this section will be free from defects of workmanship and materials for a period of one year from date of final acceptance of this work.

B. Above parties further agree that they will, at their own expense, repair and replace all such defective work, and all other work damaged thereby, which becomes defective during the term of the Guaranty-Warranty.

ELECTRICAL SPECIFICATION
FOR
GENERAL REQUIREMENTS

SECTION 2-2

1.0 GENERAL

All the requirements contained in all the other parts of the Contract Documents fully apply to all electrical work. This shall include, but not be limited to, the Bid Documents, Contract Documents, Special Provisions, General Specifications, Standard Specifications, and Equipment Specifications.

The Electrical Subcontractor shall fully understand and always comply with all the above specifications.

Pumping stations, lift stations, water & wastewater treatment plants, and all other water & wastewater facilities contain many dangers and many safety hazards. Some – but by no means all - of the dangers and hazards are listed in other locations in the plans and specifications. It is the responsibility of solely of the contractors and subcontractors to understand all the dangers they may encounter and to continuously perform all work in a safe manner.

When working in existing water and wastewater facilities, the Electrical Subcontractor and all his personnel shall understand that (1) circuits may be mislabeled, (2) power is often fed from more than one source and is not disconnected by main disconnects, and (3) equipment is often automatically or remotely controlled such that it starts unexpectedly without any warning. The Contractor and Electrical Subcontractor shall take all measures appropriate to safely address these and all other potentially dangerous situations. Record drawings and other drawings may not be accurate. Wiring and controls etc. may have been changed (possibly multiple times) after original installation.

When working on equipment and circuits in existing facilities, the Electrical Subcontractor shall always positively lock off the power supply to all the components on which or near which he will be working. It shall be the responsibility of the Contractor and his Electrical Subcontractor to positively determine the correct circuit(s) to be locked out. He shall lock out such circuits with his own padlocks. He shall tag out the facilities not to be made hot in accordance with OSHA procedures. All such work shall be carefully coordinated with the Owner and the Contractor shall provide clear written notice to the Owner and Engineer that the facilities have been locked out and are not to be operated unless the Contractor removes his lock and advises the Owner in writing that it is safe to restore power and operate the facilities. All interruptions must be carefully coordinated with and approved by the Owner. It shall be the responsibility of the Contractor and his Electrical Subcontractor to always perform all work involving existing facilities in a careful and safe manner. See other important requirements in the project plans and specifications regarding work in existing facilities and interruption of existing facilities.

The Electrical Subcontractor shall be responsible for the safety of his personnel and all others persons affected by his work. This requirement applies continuously throughout the entire project and is by no means limited to normal working hours. Neither the Owner nor the Engineer are responsible for safety. Neither the Owner nor the Engineer are responsible for the means and methods that the Contractor or his Electrical Subcontractor or other subcontractors or personnel, etc. use to perform the work.

Work in all types of existing or proposed water and wastewater facilities can be and usually is inherently unsafe due to a wide variety of hazards. Some examples - but by no means all - of these hazards include the following: electrical hazards, confined space hazards, chemical hazards, falling hazards, trenching hazards, drowning hazards, explosive hazards, and bacterial/viral infectious hazards. The Electrical Subcontractor shall have a thorough and complete understanding of all of these hazards and all other hazards that may be encountered in the performance of the work included in this project and in the performance of other water or wastewater related work. The Electrical Subcontractor shall not utilize personnel on this project who do not have a thorough understanding of the many hazards and are not willing to always utilize appropriate measures to properly address the hazards.

Some of these hazards may also be listed in other parts of the specifications or plans. The Electrical Subcontractor (including all his personnel on this project) shall be thoroughly familiar with and understand this additional information.

The Electrical Subcontractor shall continuously and fully comply with all OSHA rules, regulations, requirements, and guides, etc. All the work shall always be performed in a safe manner.

Temporary power shall be responsibility of the Contractor and his Electrical Subcontractor. It shall be installed in a safe manner and maintained in a manner to continuously protect project safety for all persons. The Contractor shall be solely responsible for all costs and Safety associated with temporary power.

The Electrical Subcontractor shall have an effective safety program that fully complies with NFPA 70E and 29 CFR 1926. It shall be the responsibility solely of the Electrical Subcontractor to carefully and regularly review his safety program to insure that it meets all the requirements of these standards and that it effectively protects all personnel performing or affected by this work.

The Electrical Subcontractor shall use only well-qualified and trained persons who are well-experienced at all the work that they will be performing. This applies to all persons associated with the project including bidding personnel, project management personnel, project superintendent, and other field personnel. As a minimum, the project manager and superintendent shall have experience in those roles that is satisfactory to the Owner on at least three similar water or wastewater projects of equal or greater size and complexity. The three projects shall include all the types of electrical and control work that are included in this project. Additionally, the Electrical Subcontractor personnel must have the same experience background as that required for the Contractor. See the General Specifications for those requirements. Where the project being constructed includes standby power, the Electrical Subcontractor shall thoroughly understand and have experience installing

and wiring standby generators and transfer switches having the same characteristics as those on this project.

The Electrical Subcontractor shall perform all work in accordance with the National Electrical Code (i.e., the NEC). The Electrical Subcontractor shall comply with all local requirements, regulations, ordinances, and laws. He shall comply with all requirements of the governmental Authority Having Jurisdiction (the AHJ).

The Electrical Subcontractor shall comply with all requirements of the local electrical utility. He shall coordinate with the utility in a timely manner so that any required utility work can be performed in a timely manner and not delay the startup of the project. He shall provide service poles, transformer concrete pads and conduits, etc., in accordance with the requirements of the utility and at no extra cost to the Owner. The Electrical Subcontractor shall pay all charges of the utility to provide service.

The Electrical Subcontractor shall have all licenses required by the state, county, and local jurisdictions. He shall obtain and pay for all permits, inspections, and approvals, and other items that that may be necessary to satisfy the AHJ and others. He shall pay all costs related to certifications or inspections etc. related to codes or UL or similar certifications or similar work. Provide to the Owner and Engineer a certificate of final inspection and approval from the Authority Having Jurisdiction and other agencies as required. Fulfill all necessary requirements such that the electric utility can provide power to the project.

Prior to bidding on or providing a quote for performing the work, the Electrical Subcontractor shall carefully and thoroughly review the plans and specifications and visit the sites of the work (multiple times if needed) so that he has a complete understanding of all the work that is required. This will require that the Electrical Subcontractor also have an understanding of the non-electrical work so that he can better perform all work required. This understanding is necessary for the Electrical Subcontractor to coordinate, sequence, and schedule his work for the Contractor.

In addition to the various circuits listed in the SCADA schedules or other tables, etc., in the drawings or specifications, other circuits (not included in such schedules or tables) are shown or called for in other locations in the drawings (such as the plan views of various processes or structures). Work that is shown in one part of drawings is not necessarily shown in other parts of the drawings pertaining to the same structure or process, etc. The Electrical Subcontractor shall thoroughly understand how the various circuits in different sections of the plans and specification relate so that he can be certain to include all his costs for all work in his bid. In preparing his bid, the Electrical Subcontractor shall use well-qualified personnel who are experienced in bidding and constructing water and wastewater projects at least as complex and as large as that included in this project.

In pricing his work, the Electrical Subcontractor shall coordinate with the General Contractor and other subcontractors to insure that all materials, equipment, and work needed to complete the project is included either in his electrical scope or in the scope of one of the other contractors. The Electrical Subcontractor shall list in his written scope to the Contractor all items potentially related to electrical work (including but by no means limited to concrete pads, controls, instrumentation, alarms, telemetry, field wiring and work associated with manufacturer provided items, all interconnections, and all SCADA work etc.) that he has

not included in his scope. The Owner shall not be responsible for any extra costs due to any items or work that is required but not included in the pricing for the project.

The electrical work may have to be performed in a specific sequence. Where the electrical work poses a possibility of interruption or disruption, etc., of normal water or wastewater operations, the requested schedule for performing such work must be approved by the Owner prior to performing the work. Some of these sequencing considerations may be listed in other parts (including non-electrical parts) of the specifications or plans. The Electrical Subcontractor (including all his personnel on this project) shall be familiar with and understand this additional information and requirements. The Electrical Subcontractor and Contractor shall continue to be fully responsible for safety during any necessary sequencing or special work or extra work, etc.

The electrical work will have to proceed simultaneously with work that is being performed by the General Contractor (or Contractors) as well as other subcontractors. The Electrical Subcontractor shall coordinate and cooperate with all other contractors and subcontractors onsite to allow all work to proceed expeditiously. No extra time shall be given or money shall be paid due to claims of delays, interference, or damages due the other ongoing or planned work, etc.

2.0 MATERIALS, EQUIPMENT, AND SUBMITTALS

All material, equipment, and components utilized in the project shall meet the requirements of OSHA, UL, and NEMA, and shall be designed, manufactured, and installed such that they are safe to operate and maintain. Labels showing compliance with above standards shall be attached but shall be removed and the surface cleaned after receiving the ok from the Owner. Unless noted otherwise, all material shall be new. All materials shall be installed and all work performed in a "first-class manner". No materials shall be delivered to the jobsite without its submittal being approved prior to delivery.

All electrical equipment and all electrical items, etc., installed on the project shall be designed, manufactured, and installed in a manner to safely protect the employees, visitors, and other personnel at the site where they are installed.

As soon as a notice to proceed has been issued, the Contractor shall promptly initiate the preparation of all submittals for equipment whose timely delivery may impact the project. Coordinate and schedule submittals with the Engineer such that review priority can be given to those submittals where turnaround time is most important.

The Electrical Subcontractor shall provide submittal information to the Contractor so that the General Contractor can make submittals to the Owner. Submittals shall be made for all equipment of any type, panels, conduit, wiring, and all components, etc. to be installed for the project. The submittals must comply with the submittal requirements contained in the General Specifications and in the All Equipment specification. Additional submittal requirements may be contained in other specifications.

The Electrical Subcontractor shall thoroughly review all electrically related submittals prior to submittals to the Engineer. He shall stamp all of his submittals as "Approved" by his company and sign his name on the stamp. The Contractor shall also stamp

all electrical submittals prior to submitting them to the Engineer. All exceptions to the Contract requirements must be listed in the form included with the submittal transmittal. If parts of the submittal appear to be in non-compliance with the Contract requirements, the submittal may be returned without review or comment.

Operation and maintenance manuals shall be submitted for review, revision as necessary, and approval. These shall be submitted in a timely manner. They shall contain all safety warnings relative to the equipment to which they pertain. The Electrical Subcontractor shall comply with the O&M requirements contained in the General Specifications and in the "All Equipment Specification".

The Contractor shall completely coordinate submittals with all interconnecting equipment or affected equipment prior to making the first submittal. The Electrical Subcontractor shall carefully coordinate with the manufacturers and suppliers of SCADA equipment and manufacturers of control panels, etc. All wiring and SCADA interconnections, etc., shall be clearly shown on all submittals. The source of the power for all interconnections shall be clearly shown. Provide narratives if necessary to facilitate interpretation of control methods and interconnections. Submit narratives to fully describe all PLC or other functionality so that the Engineer can easily see if all the required control functionality has been provided. If submittals are incomplete or not fully coordinated or propose equipment with deviation from the project requirements (plans and specifications), the Engineer may reject the submittal without review.

All equipment, and components used in or installed in hazardous areas shall be U.L. listed for use in such areas. This applies to all equipment for areas defined by the NEC as Class 1 Divisions 1 Groups C and D.

All equipment and panels etc. must fit within the available space. Provide specially – designed custom equipment and panels, etc. if necessary to fit in available space.

Any equipment used as service entrance must be rated and marked for such use.

3.0 EQUIPMENT STORAGE

All equipment, electrical components, and devices, etc., shall be stored in accordance with storage procedures as recommended by the manufacturer as a minimum. Additional protection shall be provided as required by the Contract. The equipment shall be stored in a manner such that it is protected from any damage. All electrical gear – including but not limited to MCCs, switchgear, switchboards, transfer switches, VFDs, power panels, lighting panels, control panels, and SCADA panels, etc. – shall be stored indoors in conditioned space where the temperature does not exceed 104 degrees F. Once installed on the site, internal heat shall be maintained by a heat strip or light bulb to prevent condensation. The equipment shall be continuously protected from dust during all storage through final acceptance of the total project. The Owner and Engineer shall be provided convenient access to verify compliance with all storage requirements. Failure to maintain proper storage may result in the Owner refusing to accept the equipment or deducting payment from the Contractor to keep as an allowance for potential premature failure due to the Contractor's failure to comply with the Contract.

4.0 PERFORMANCE

The Electrical Subcontractor shall perform all work in accordance with the Contract and in accordance with all applicable codes and regulations. Install all components and items in accordance with the manufacturer's recommendations except where more stringent requirements are required by the Contract. Install conduit and all other facilities and components in neat straight lines. Install items horizontal or plumb as applicable. Install items that must be accessed in a convenient location. Install items so no potential tripping hazards or low headroom hazards, etc., are created.

Where working in any existing water and wastewater facilities (including treatment plants, pumping stations, etc.) maintain all conditions in a manner that is safe to Owner personnel and all others that must continue to operate, maintain, or be in the facilities. Lockout and tag-out all equipment not intended for operation. Keep walk paths clear. Safe access must be provided for all operators and maintenance personnel. Keep tools, materials, trash and unneeded containers, etc. cleaned up. Properly guard all live electrical components to prevent contact by unauthorized persons.

Perform all work required by the Contract and all work necessary for a complete and properly functioning project. Provide all conduit, wiring, and work to connect all equipment and all components, etc., requiring electrical, control, or SCADA connections. This shall include all items shown on the drawings or called for in the specifications. Connect all loads such that the loads will be balanced across the phases. Perform all grounding work shown on the drawings or required by manufacturers. Provide unit heaters, surge protectors, and all other components shown or called for, or required for the installation and/or proper performance of the shown or called for items.

For locations and final depth of duct banks and other conduit in the yard, coordinate with the Contractor so that conflicts with piping and other facilities can be avoided. If the electrical facilities conflict with the required location of other facilities, the electrical items shall be removed and replaced. There shall be no extra time given or payment made if electrical facilities are installed in a manner that conflicts other facilities.

All work by the Electrical Contractor, including but not limited to all site work, must comply with all the Contract requirements, including requirements contained in non-electrical sections of the plans and specifications. Payment shall be in accordance with the Contract requirements. No extra payment shall be made for rock excavation or dewatering or other such items. Excavation, backfill, and compaction, unless specifically called out otherwise, shall be as described for in the Standard Specifications and notes on the drawings, whichever is more stringent. Backfill and compaction, including that under roads, paving, buildings, and structures, etc., shall be the same material and compaction as required for piping in the same location under the same structures. Payment shall only be made as described in the Contract.

Exercise care when unloading or moving equipment to prevent it being damaged. Damaged or potentially damaged equipment shall be removed from the jobsite and replaced with new equipment. No extra time shall be granted, or extra payment made for the replacement of damaged equipment or items, etc.

If roof penetrations are required, they shall be performed in a permanently watertight manner that results in zero leakage. The Electrical Subcontractor shall submit details for any such penetrations for the Engineer's review and approval.

Carefully coordinate with the Contractor all locations where conduits are to be stubbed up. The locations shown on the drawings are approximate and general in nature. The Electrical Subcontractor must determine from a review of process equipment submittal drawings and electrical equipment submittal drawings the exact location where the conduit is to be stubbed up. Floor space is limited in most cases. It shall not be allowable to create a tripping hazard by any of the electrical work or obstruct space needed for access or operations, etc.

Cutting and patching, etc., shall be held to a minimum. Any cutting and patching that is required shall be performed in a neat manner that is acceptable to the Owner.

Ground and bond all panels, all equipment, and all electrical components in accordance with the requirements of the National Electrical Code and the recommendations of the equipment manufacturers. Ground and bond as necessary to achieve a properly functioning and safe electrical system.

Disconnect switches and control device locations must be carefully and accurately coordinated with the Engineer and with the actual equipment furnished (per the submittals) which they will disconnect or control. They must be located in a position that is easily and promptly accessible, intuitive, and provides for safe lockout and control. Coordinate the mounting height of all electrical equipment so that the final height is acceptable to the Owner.

Where the project includes Ground Fault Protection on the main incoming power to the facility or to downstream switchboards or MCCs, etc., the Electrical Subcontractor shall carefully coordinate, both during the submittal phase and during the construction phase, all field wiring and components to ensure that proper protection is provided. The Electrical Subcontractor shall coordinate with both the electrical gear providers and the automatic transfer switch provider if different. Provide all necessary components, transformers, and wiring etc., to make the Ground Fault Protection effective without nuisance tripping. Test and make all necessary adjustments. Where possible, all Ground Fault Protection components and wiring shall be performed at the factory, and factory tested.

Use care in the installation of PVC coated conduits so as not to mar the surface. Treat threads with cold galvanizing to prevent rust. Clean all grease, concrete, and other substances from all conduits.

Install the following sign on all electrical panels having more than one source of power. This includes but is not limited to panels having one source of power plus 120-volt SCADA or separately powered controlled circuits, etc: "DANGER – ELECTRICAL SHOCK HAZARD – EQUIPMENT HAS MULTIPLE POWER SOURCES".

If any electrical panels or transformers, etc., are hot to the touch, install a warning sign.

Unless specifically called out otherwise, the Electrical Subcontractor shall provide and install all unit heaters on the project. The Electrical Subcontractor shall install the heaters in accordance with the recommendations of the heater manufacturer. Provide mounting

brackets and hardware to install the heaters a sufficient distance from all adjacent surfaces to avoid damaging surfaces or causing potential combustion.

Lighting circuits shown on the drawings do not show all the individual wires required to achieve the functionality required by the control logic. Provide all needed wiring (including but not limited to that needed for 3-way and 4-way switches etc.).

The Electrical Subcontractor shall mount all panels in the space shown on the drawings. Provide stainless steel floor stands where called for or needed to properly support panels. Where other floor support is acceptable, the Electrical Contractor shall use stainless steel or aluminum components as shown in the drawings. Increase support member sizes above those shown in the drawings if needed to rigidly support panels so that the panel is sturdy and does not sway, etc. Bracing for floor supports, if allowed, must not protrude into walking paths or other areas needing access, or create a potential tripping hazard, etc. Where wall mounting of panels is acceptable, mount panels to stainless steel unistrut to offset the panel from the wall.

All spare parts must be clearly labeled identifying what they are and what specific equipment or panel etc. that they pertain to. Additionally, a typed list shall be provided showing the inventory of spare parts, the equipment in which they will be installed, and the locations where that equipment is installed. All spare parts shall be turned over to the over at one time at the end of the project when the Owner is ready to take ownership of the spare parts. They shall be grouped by type and clearly labeled to facilitate checking the spare parts delivered versus the inventory. The spare parts shall be delivered to the Owner at a location or locations designated by the Owner. The spare parts shall be delivered simultaneously with all other spare parts turned over to the Owner unless the Owner requests otherwise.

See the notes in the drawings for additional important requirements for electrical work.

5.0 EQUIPMENT STARTUP

The Electrical Subcontractor shall assist with the startup of all equipment having any wiring connections. Prior to requesting startup or the attendance of a manufacturer's representatives for startup, the Contractor shall write the manufacturer and clearly state what work has been fully completed and also clearly state all work that is not totally completed. Particular attention shall be given to all interconnections to related panels, related equipment, and the SCADA system. All appurtenances and support equipment shall be ready prior to attempting startup. The Contractor shall be responsible for all delays associated with such lack of completion or coordination. Time spent by manufacturer's representatives in preparation for startup due to the incomplete work shall not count towards the time required by specifications for the manufacturer's representative to startup the equipment.

Provide complete record drawings showing all field wiring, duct bank information (including but not limited to locations, depths, cross-sections), and terminations, etc.

6.0 FINAL INSPECTION

Upon completion of work, the entire plant and electrical system shall be fully tested to verify that it is compliance with all the requirements of the Contract. If the testing indicates any non-compliance, corrections that are acceptable to the Owner shall the made and then the system completely retested. Testing shall be performed at a time such that the Owner and his representatives can schedule to be in attendance to observe all testing if they desire.

The Electrical Subcontractor shall provide permanently engraved phenolic labels identifying all panels, switches, pushbuttons, breakers, controls, and all other electrical appurtenances, etc. It shall be attached with stainless steel screws in a location where it is clearly applicable and acceptable to the Owner. Breakers and circuits in all panels shall be clearly identified and labeled. The wording on all labels – including schedules and directories, etc. - shall be satisfactory to the Owner. Labels and directories, etc. for lighting panels shall be typed or machine printed in a manner such that they are easy to read. After installation and all labeling have been completed, the electrical contractor shall test all circuits to verify that they are correctly labeled and that all schedules and directories are correct. He shall provide written certification to the Owner on a form provided by the Owner certifying that he has tested all controls and circuits, etc., and all are correctly labeled and correctly listed in all schedules and directories. Each circuit tested shall be listed by the Electrical Subcontractor.

Wire and conduits shall also be labeled to facilitate future maintenance.

Final inspection by the Engineer shall not be requested until the work is actually complete. See the General Specifications for requirements related to final inspection. See the SCADA Specifications, and related specification for work relative to the SCADA System.

7.0 CLEAN UP

Protect all electrical facilities from concrete splatter when concrete is being placed. Cover all facilities and conduits, etc., to prevent them from being splattered with concrete. Provide protection at all times to prevent damage or staining or discoloration, etc. to all electrical components and equipment, etc. Completely clean all electrical facilities, including but not limited to, inside and outside of all electrical equipment, conduits, pull boxes, supports, miscellaneous items, and lights, etc. Thoroughly clean the interior and exterior of all electrical panels, gear, equipment, and appurtenances, etc., as necessary and prior to a final inspection. Clean any dust, dirt, discoloration, paint splashes, wiring remnants, grease, etc. Re-clean if necessary so that all electrical items are clean at the final completion of the work.

Repair any damaged surfaces in a manner acceptable to the Owner. Damaged paint shall be sanded and refinished with the same brand and type of coatings as the original coatings. Rusty or stained areas shall be repaired. The final surfaces after repair shall be acceptable to the Owner. If the Electrical Subcontractor cannot achieve a finish acceptable to the Owner, he shall replace the enclosure, panel, or equipment, etc.

See additional clean up requirements in the General Specifications.

8.0 WARRANTY

All electrical work shall be guaranteed to the Owner by the Electrical Subcontractor for a minimum period of one year beginning on the date of final acceptance of the entire project. No early start date for parts of the project shall be allowed. This guarantee shall be executed on a form prepared by the Owner. This guarantee shall be in addition to the guarantee required to be provided by the Contractor.

Where specific equipment specifications require longer guarantees, they shall also begin on the date of final acceptance by the Owner. The Contractor shall furnish documentation acceptable to the Owner showing that the longer guarantees have been provided. At the completion of the project, the Electrical Subcontractor shall furnish one labeled binder that has all supporting information for all extended warranties included.

ELECTRICAL SPECIFICATION
FOR
SCOPE OF WORK

SECTION 2-3

1.0 GENERAL

Installation of Equipment Furnished by Others: Where shown or specified, equipment furnished by others shall be installed and connected under this Contract.

Installation of Equipment Furnished by Owner: Where shown or specified, Contractor shall receive, unpack, check and assume custody of equipment furnished by Owner. Contractor shall assume responsibility for care and safekeeping of the equipment, when delivered into his custody. He shall protect it from moisture, dust and damage, during construction and until Owner acceptance of project.

Review and Coordination: The electrical subcontractor shall thoroughly review and coordinate all submittals containing electrical gear, electrical panels, control panels, monitoring panels, and SCADA systems. Coordinate electrical requirements to the extent applicable with mechanical, valves, SCADA, instrumentation, control, HVAC, phone, radio, and all other equipment or systems as needed.

Coordinate with utilities in a timely manner and Owner as required. Make all arrangements for power to be supplied to the facilities. Pay all utility costs until facility has been taken over by the Owner for full-time operations.

2.0 SYSTEM DESCRIPTION

Furnish all labor and materials to complete all electrical work as shown on Plans and/or herein specified, and as required for a complete, properly functioning project.

Complete new electrical system of lighting, power, grounding, and controls, etc., for new facility.

Connection of electrical equipment mentioned in this section or noted in Plans, whether furnished by electrical contractor or by others.

Furnishing and installing all fixtures, outlets, switchgear, transformers, motor control, and power equipment shown or herein specified.

Installation and connection of all control devices, items, and systems shown or herein specified.

Balance load as equally as practicable on services, feeders, circuits, and buses.

Complete field testing of power systems. Assist testing and field adjustment of control systems.

Furnish and install electric unit heaters as shown on Plans.

Complete grounding system for new facilities as shown on Plans, or as specified herein, or as required by Codes.

3.0 QUALITY ASSURANCE

Procure and pay for permits and certificates as required by local and state ordinances and fire underwriter's certificate of inspection.

4.0 SUBMITTALS

Submit to Engineer promptly after Award of Contract and prior to purchasing, the number of copies which the contractor requires plus 5 copies which will be retained by the Engineer of manufacturer's shop drawings. All drawings of a specific item or system shall be made in one submittal, and within 90 days after award of Contract. Shop drawings of device placement, phasing and numbering, in form of elevations, for each major piece of equipment.

Shop drawings shall be submitted on the following:

Pull Boxes	Wire and Cable
Lighting Fixtures	General Devices
Motor Controls	Wire Connectors
Transformers	Control Wire
Power Equipment	Cast Fittings
Grounding Equipment	Conduit
	Other items not covered by the above

None of the above items shall be installed until shop drawings or catalog data have been accepted in writing. Any listed item not submitted, even if as specified, shall be considered not acceptable and shall be removed if required.

Submit to Engineer a certificate of final inspection from local inspection department.

5.0 OPERATION AND MAINTENANCE DATA

One set of marked "AS BUILT" Plans, 10 sets of all equipment catalog and maintenance data and 10 sets of shop drawings, on all equipment requiring same shall be turned over to Owner. These items shall be bound in "HARD BACK" book. Contractor shall explain and demonstrate all systems to Owner's representative.

6.0 GENERAL

Drawing: Indicate diagrammatically, extent, general character and approximate location of work. Where work is indicated but details omitted, furnish and install it complete so as to perform its intended functions. For details and mechanical equipment, follow Architectural, Structural, Mechanical and piping drawings, and fit electrical work thereto. Take finish dimensions at job in preference to scale dimensions. Except as above noted, make no changes in or deviations from work as shown or specified except on written order of Engineer.

Excavation, Cutting and Patching: Perform all cutting and excavating as necessary for installation of systems, unless specifically covered under another section. Excavation, filling, backfilling and Engineer's inspection as directed under preparation of site and earthwork. Foundations for equipment as specified under concrete section. Concrete pads shall be minimum of 6 inches thick; unless greater thickness required by equipment manufacturer.

Roof Penetration: Furnish roof flashing for all equipment installed under this section that penetrates through the roof. Appropriate flashing is specified under roofing and sheet metal section. Supply these flashings for installation under roofing and sheet metal section.

Installation of Equipment - General: Care shall be exercised in exact routing and location of all items so as not to obstruct access to equipment, personnel walkways, or expose it to potential mechanical damage. Items shall be securely anchored and/or fastened. All electrical equipment, furnished by Contractor or by others shall be covered and protected during construction. Use great care in storing and moving equipment so that it is not dropped or otherwise potentially damaged.

All control cabinets, panels, Motor Control Centers and other electrical cabinets and enclosures shall have all trash removed and be vacuumed clean. All foreign paint, etc., shall be removed form exterior and all scratches in finish touched up with same color and material as original. Any rusted areas shall be sanded, primed and repainted to the satisfaction of the Owner. All relays, starters, push-button and other control devices shall be cleaned and if necessary, lubricated with CRC 2-26 to assure free operation.

Circuits and Branch Circuits: Outlets shall be connected to branch circuits as indicated on Plans by circuit numbers and not more outlets than are indicated shall be connected to a circuit.

Outlet Location: Symbols shown on Plans and mounting heights indicated on Plans and in specifications are approximate only. The exact locations and mounting height must be determined on the job and it shall be the Contractor's responsibility to coordinate with other trades to ensure correct installation.

Panel and Device Identifications: Each panel shall have each circuit identified. Panels without nameplates shall have typewritten directories. Each individual mounted switch, circuit breaker, starter and/or any other control or protective device shall identify equipment fed and fuse size, if any, by engraved plastic nameplate, black with white letters, screw attached. After all circuits are installed and directory prepared, field verify all circuits to insure proper identification. Revise labels and directories if needed for clarity.

Conduit Identification: Non-ferrous identifying tags or pressure sensitive labels shall be securely applied to all conduits, and all other pull boxes, junctions, motor or control, and all other terminations. Tags or labels shall be stamped or printed to correspond to markings on Plans. Designation shall be on inside of pull boxes, etc.

Painting: Field painting of exposed conduit will not be required unless specifically specified. However, all exposed metal conduit shall have all field cut threads, and any other non zinc coated threads, painted with liquid zinc. Any scratches, dents or rust spots in conduit electrical enclosures, panels, motor control or any other electrical items shall have the dents removed, and they, along with any rust spots or scratches, sanded and touched up

with the same exact color paint as original finish. All such work shall meet the requirements of the Owner and shall be repeated, or the item replaced if necessary to satisfy the Owner.

Storage: Store all electrical items as recommended by their manufacturer as a minimum or as required by the Plans or Specifications. All electrical panels, MCCs, switchboards, and switchgear, etc., shall be stored indoors in conditioned space with a low level of heat continuously applied to their interior.

ELECTRICAL SPECIFICATION
FOR
RACEWAYS

SECTION 2-4

1.0 GENERAL

The following types of raceways shall be used in the locations shown unless specially called out otherwise in the drawings:

	For Power Wiring	***For Instrumentation and Non-Power Wiring***
Application		
Buried (Concrete Encased)	PVC	PVC Coated RGS
In Poured Concrete Slabs, Walls, Ceilings, etc.	PVC	Rigid Galvanized Steel
Exiting Poured Concrete to Exposed Areas	PVC Coated RGS	PVC Coated RGS
In Concrete Block	PVC	PVC Coated RGS
In Stud Walls	Aluminum	PVC Coated RGS
Exposed	Aluminum	PVC Coated RGS

NOTES:

For purposes of table above, all 120 volt control circuits and float switch circuits shall be considered power wiring. Instrumentation circuits include but are not limited to: 4-20 mA circuits, 24 volt or lower circuits, ethernet circuits, fiber optic circuits, communication circuits, computer related circuits, and similar.

In space that is air conditioned: In stud walls or in lay-in ceilings, EMT (Electrical Metallic Tubing) may be used for lighting and receptacle circuits only. All other power circuits shall be aluminum and all instrumentation circuits shall be PVC Coated RGS.

PVC Coated RGS is PVC coated rigid hot dipped galvanized steel.

Use PVC Coated RGS for applications not listed above.

All raceway shall be UL listed.

2.0 MATERIAL SPECIFICATIONS

PVC Conduit and Fittings: PVC conduit shall be schedule 40 minimum. PVC conduit shall meet NEMA TC-2 and UL651. PVC fittings shall meet NEMA TC3 and UL651. PVC conduit and fittings shall be UL or ETL listed and UL or ETL labeled. Conduit shall be rated for use with 90 degree conductors.

PVC Coated Hot Dipped Galvanized Steel Conduit and Fittings: PVC Coated Hot Dipped Galvanized Steel conduit and fittings shall comply with ANSI C80.1, UL 6, and NEMA RN-1. PVC shall have a coating of 40 mills thickness. Conduit and fittings shall be manufactured by Ocal. Threads shall be treated for corrosion resistance.

Aluminum Conduit and Fittings: Aluminum conduit and fittings shall comply with ANSI C80.5 and UL 6A. When connecting to different metals, provide adaptors to prevent galvanic corrosion as recommended by the manufacturer.

Conduit outlet bodies shall be provided with rollers.

Provide rain tight connectors in exterior locations and in any interior locations except electrical rooms and offices.

Flexible connectors shall be corrosion proof and water tight.

Supporting hardware and clamps, etc., shall be aluminum or stainless steel. Support and anchor conduit per manufacturer's recommendations.

3.0 INSTALLATION

General:

All wiring on the project shall be installed in conduits.

No conduit shall be installed in a manner that creates a potential tripping hazard. No conduit shall be run across the floor. Install conduit in or under slabs to avoid creating potential trip hazards. No conduit shall be installed such that it blocks passage. No conduit shall be installed such that it creates a potential headroom obstruction, etc.

Instrumentation conduits (for all circuits identified above) shall be installed a minimum of 12" away from all 110 volt or higher power circuits. Do not install any instrumentation circuits in the same conduit with any ac power circuits.

The Contractor and Electrical Subcontractor shall always comply with all OSHA requirements for all work throughout the entire project. Where work is in an existing facility, take appropriate measures to protect operators and other persons who may be present. Beware that water and wastewater facilities may be staffed 24-hours/day and are subject to personnel having to access the site at any time to address potential problems. Therefore all electrical work must be performed in a manner that is safe for others on the site.

Conduits that enter a structure or a building below grade or in another manner such that water could exit the conduit shall be provided with drain fittings piped to an acceptable drain so that water does not accumulate in the conduit or other electrical facilities and does accumulate on the floor.

All conduits shall be labeled at each end describing the circuit.

Spare conduits shall be left clean and with a pullcord.

The minimum allowed conduit size shall be 3/4".

Prior to installation, the Contractor shall prepare his duct bank schedule showing the number and size of conduits based on circuit schedules and other wiring requirements contained in the drawings. Include all required spare conduits shown in

schedules or in duct bank details, etc. Provide duct bank schedule and supporting information to Engineer prior to proceeding with work.

No power and signal or instrumentation circuits shall be contained in the same conduit.

Use adaptors or other special appurtenances or where conduit materials change or as otherwise needed.

Route conduit away from hot equipment or hot piping or ducts to prevent excessive temperatures.

Coordinate actual final location of all equipment and facilities and stub-up conduit in appropriate locations.

Install sealtite watertight flexible conduit and fittings at connections to motors and other equipment. All components must be corrosion proof.

A separate green grounding wire must be run in all conduits and flexible conduits.

All metal conduits shall have grounding bushings installed and all shall be bonded to the grounding electrode system. Bond pullboxes to the grounding electrode system.

Follow all manufacturer recommendations for installation of conduits, fittings, and appurtenances, except where the requirements of the Contract are more stringent.

Where conduits exit from a floor, if a conduit bend in the floor or through the floor is necessary, install the bend fully beneath the floor so that the conduit is straight and vertical where it exits the floor and becomes visible. The curved portion shall not be visible above the finished floor.

Conduits connecting to panels shall enter from the bottom or lower part of the side. If this is not practical, coordinate with the Engineer prior to performing the work. Use rain tight hubs.

The conduit sizes shown in the drawings are the minimum sizes allowed. Where sizes are not shown or are insufficient, size conduits per the NEC as a minimum.

For conduits located inside containment areas or other areas where liquids may accumulate, extend conduits above maximum possible containment area prior to installing fittings. If this is not practical, all fittings, conduit, and appurtenances, etc., below the maximum possible liquid level shall be watertight.

Store conduit off the ground and protected from dust and dirt, etc., so that they conduits remain clean when ready for installation.

All manufacturers of conduit shall have a minimum of 5 years of experience.

Additional requirements are contained in the drawings.

Buried Conduit:

All buried wiring shall be in conduit and all buried conduit shall be encased by a minimum of 6” of concrete. Prefabricated plastic conduit spacers shall be used in duct banks in accordance with manufacturer instructions to maintain a minimum of 2” separation between each conduit. The spacing shall be greater if shown as such in the drawings. The concrete shall contain reinforcing steel at all road crossings and as otherwise indicated in the drawings.

The Electrical Subcontractor and Contractor shall coordinate all conduit locations in a timely manner to avoid any conflicts, including but not limited conflicts in elevations between conduits and piping and other facilities. There shall be no extra payment or extra contract time for encountering rock or muck or groundwater or underground obstructions, etc. The Electrical Subcontractor and Contractor shall be responsible for the location of all existing underground utilities (including electric and gas) and other conflicts prior to beginning excavation for the conduits. Adjust conduit and duct elevations to avoid conflicts.

Dirt, mud, and debris, etc., shall be kept out of the electrical trenches until concrete has been placed around the conduits. Prevent flotation or other movement of the conduits during placement of encasement concrete. The concrete used for encasement and all other electrical facilities shall be the same design mix as used for structures on the project.

Buried conduits and duct banks shall be backfilled with the same material and compacted to the same or higher level as called out if it were piping in the same location. As a minimum, all backfill under roads, walks, paved areas, buildings, or structures, or beneath piping, shall be backfilled in 6" maximum loose-fill lifts of pugmix limestone and compacted to 98% SPD. Backfill and compaction in such areas shall be compacted when convenient for the inspector to observe the activity.

Use PVC end bells flush with the concrete slab where PVC conduits enter pullboxes or slab mounted enclosures, etc.

All buried conduit shall be marked with red plastic warning tape imprinted with "CAUTION BURIED ELECTRICAL LINE". The warning tape shall be buried at a depth of 15 to 20" below ground. If the buried conduit will be crossed by a pipeline at a shallower depth than the conduit (i.e. above the conduit), also install additional tape below the bedding of the deepest pipeline. The warning tape shall be a minimum of 3" wide and shall have a foil core or equivalent to allow detection by pipe horns, etc.

Other Conduit:

Unless specifically shown otherwise, all conduit shall be concealed. No conduit shall be installed in a manner such that it presents a potential tripping hazard or obstructs access or presents a potential headroom obstruction.

Conduit shall be installed in neat parallel lines where exposed. When encased in walls or floors, conduit shall be installed near middepth of the concrete unless prior approval is given for a different location. Conduits encased in floors and walls or ceilings shall be spaced such that they are no closer than 3 diameters on center. Conduits shall not be laid on rebar. Allow room for concrete between all rebar and conduit. Provide extra reinforcing steel as determined by Engineer in areas where conduits are densely placed.

Protect the ends of conduit to prevent concrete or trash from obstructing the conduit. Protect exposed conduit and appurtenances during placement of concrete to prevent concrete from splattering on the conduit. Promptly clean off any concrete or other substance that gets on exposed conduit, etc.

All exposed conduit shall be thoroughly cleaned at the completion of construction. The cleaning requirements in the General Specifications apply to conduit and all other electrical facilities, etc.

Use appropriate procedures to prevent marring or damaging the coating on PVC coated conduits. Follow manufacturer recommended procedures for cutting, threading, and bending conduit. Use special tools, etc., as desired to protect the PVC coating. Use cold galvanizing or equivalent products to treat threads and such connections to prevent any corrosion or rust for PVC coated or galvanized steel conduits. If PVC coated conduit is damaged during installation, repair it with products and procedures recommended by the conduit manufacturer. The final condition and appearance must be acceptable to the Owner or the conduit shall be replaced with new conduit.

Prevent cutting or threading oil or fluids from dripping on floors, concrete, or paving. If any such material discolors any surface, the Contractor must completely restore the entire area to a uniform and like-new appearance. The final appearance must be acceptable to the Owner.

All metal conduit shall be joined with threaded connections. Provide expansion couplings where conduit crosses a structural expansion joint.

Label all spare conduits so the destination is clearly apparent.

ELECTRICAL SPECIFICATION
FOR
CONDUCTORS

SECTION 2-5

1.0 GENERAL

All wiring shall have copper conductors. All wiring shall be UL listed for its intended purpose.

2.0 PRODUCTS

Power Wiring:

Power wiring shall be rated for 600 volts. Each size wire provided shall be rated for the current capacity shown in the National Electrical Code for that size. The smallest size power wiring allowed shall be #12. All wire shall be rated for wet or dry locations.

All wiring to motors, all feeder circuits, and all wiring #8 or larger shall have a RHH/RHW/USE rating.

Wiring #10 and smaller that does not supply motors or feeders shall have a THHN/THWN rating.

Control Wiring shall be rated for 600 volts. Control wiring shall be #12 except where #14 is specifically shown in the wiring schedules. Control wiring shall be THHN/THWN. All wire shall be rated for wet or dry locations.

Wiring for Analog Circuits and Other Instrumentation: This wiring shall be shielded #16 twisted pairs. The foil shield shall provide 100% coverage. A drain wire shall be included. All cables shall be rated "Water Resistant". The cable shall have a rated pulling tension of at least 80 pounds.

Wiring for VFD Circuits:

In addition to the three power conductors, VFD cables shall include three ground cables located symmetrically around the power conductors. The insulation shall be cross-linked and be rated for 2,000 volts. The EMI shield shall consist of a copper braid and a foil shield and shall provide 100% coverage. The cable shall comply with UL and be listed as Type TC.

Termination instructions prepared by the cable manufacturer shall be included with the submittal. The instructions shall address where and how the shield will be terminated as well as other applicable instructions. The instructions shall be specific to each application on the project where the VFD cable is being utilized and may vary from one application to another within the same project. Where the VFD cable is routed through safety switches (disconnect switches), provide full instructions on how the shield and ground wires, etc., are to be handled at the switch. Where the VFD cable connects to a submersible pump or submersible mixer or other equipment with manufacturer provided cables, provide full

instructions on how the shield and ground wires, etc., are to be handled at the manufacturer's cable. The VFD cable shall be installed and terminated in accordance with the written instructions from the manufacturer.

Fixture Wiring shall have silicon rubber insulation rated at 200 degrees C. It shall have silicon rubber insulation and be type SF-2. The minimum size allowed shall be #16. The maximum amperage in the wire shall not exceed 6 amps for size AWG 16 and 13 amps for size AWG 14.

Connections: Where splices and taps are allowed, use products approved by UL that are compatible with the conductors and provide the same or better mechanical strength than the conductors themselves. Wire nuts are not allowed. Use solderless connections such as manufactured by Sta-Kon and install with tool provided by the manufacturer of the product. Insure the final connection is properly insulated and achieves the same insulation effectiveness as the conductor insulation.

Miscellaneous:

All wiring and appurtenances utilized on the project shall be approved by UL for its intended use. All wiring and appurtenances installed underground or in a ductbank shall be rated by UL for use in wet areas. If cable tray or similar facilities are allowed, all wiring installed in such facilities shall be rated TC in addition to the other requirements.

All conductors and cables shall be installed in conduits.

No wire smaller than #12 shall be used unless it is called out to be smaller in the wiring schedule in the drawings.

3.0 INSTALLATION

During storage and installation, continuously protect the open ends of conduits to prevent dirt, water, or other foreign substances from getting in the conduit. Clean conduits before pulling wire. During storage, protect ends of wire from rain, water, and moisture. Store wire in accordance with manufacturer recommendations. Pulling compounds shall be acceptable for use on the conductors being pulled.

Any splices must be in suitable boxes and not in conduits.

Perform conduit cleaning and wiring pulling in a manner that will not damage the conduit or conductors or conductor insulation.

When pulling the wire, do not exceed the conductor or cable maximum tension as recommended by the manufacturer. Do not exceed the manufacturer recommended bending radius for any cables or conductors, including but not limited to fiber optic cables.

Motors 100 horsepower and larger shall be connected to power wiring by an approved motor connection kit utilizing heat shrink components as manufactured by Raychem or equal.

Insulation resistance testing with Megger test equipment shall be performed at the completion of installation. This testing shall be performed on all feeder circuits and all circuits supplying motors 10 horsepower and larger. The Electrical Contractor shall be solely responsible for the safety, means, and methods of conducting the test. Prior to performing the

test, disconnect all equipment that may be damaged by the testing. The test voltage shall be per ANSI for the voltage of the circuit being tested and the required IR shall not exceed that allowed by ANSI. The test shall not be performed during periods of high humidity. Provide written certification listing all circuits tested and the results. Identify all circuits as "Pass" or "Fail". Correct the circuits that do not pass or exhibit questionable results and retest.

Check all circuits for continuity, short circuits, and grounding.

Install grounding conductors and bonds per NEC requirements. See grounding system test requirements in other specifications.

Provide a written report to the Owner listing individually all circuits tested, the type of test, the results, and certifying that all circuits passed the testing. The report shall be in a format acceptable to the Owner.

Apply permanent identification labels to all conductors identifying the circuit in accordance with an accepted name corresponding to the circuit identification in the plans and according to the circuit purpose. The labels shall be attached at every point, box, panel, pullbox, etc., where the conductor can be accessed. Clean conductors prior to attaching the labels and use products that will stay permanently adhered.

Mark conductors with tape to indicate the following:

PHASE	***120/208/240 VOLT COLOR***	***277/480 VOLT COLOR***
A	BLACK	BROWN
B	RED	ORANGE
C	BLUE	YELLOW
NEUTRAL	WHITE	WHITE
GROUND	GREEN	GREEN

All equipment and appurtenances, etc., shall be installed in strict accordance with the manufacturer's recommendations except where more stringent requirements are contained in the plans or specifications.

Where flexible equipment cables exit conduits and in other locations as needed, they shall be supported by stainless steel wire mesh strain relief grips which are in turn attached to the concrete or other structural member by stainless steel appurtenances and hardware. This includes, but is not limited to, all cables to submersible pumps, mixers, and aspirators, etc.

ELECTRICAL SPECIFICATION
FOR
GROUNDING AND BONDING

SECTION 2-6

Switchgear, Switchboards, MCCs, Control Panels, Pump Panels, Power Panels, Lighting Panels, Transformers, Service Entrance Equipment, Manufacturer-provided panels, steel columns, non-current carrying components of electrical equipment (including but not limited to panels and boxes, etc.) and handrails shall be grounded. The resistance to ground shall not exceed 5 ohms.

Switchgear and larger power panels shall be grounded with #4/0 minimum. Miscellaneous small controls panels may be grounded with #2/0. Provide larger wiring where called for in the plans or elsewhere.

All grounding and bonding material and equipment shall be meet UL 467 requirements. All work shall be performed and all materials used shall be in accordance with the National Electrical Code. The work shall be acceptable to the AHJ.

A buried #4/0 bare copper ground ring shall be installed at the bottom elevation of the footings around all structures and buildings. If the footing is less than 30" deep, then bury the copper at a minimum depth of 30". Copper ground rod (a minimum of 10' long) triads shall be installed at all corners of the ground loops. A #4/0 bare copper conductor shall be connect all ground rings around buildings and structures and shall be run with all duct banks and connected to all switchboards, MCCs, Control Panels, Pump Panels, Power Panels, Lighting Panels, the reinforcing steel in every concrete footing, etc., as well as at other locations called for in the drawings. The above described grounding components shall be continuous throughout the project. Below ground connections shall be made by exothermic welding.

A green insulated equipment grounding conductor shall be run with all circuits to all equipment. It shall be continuous through all conduits.

Where shown in the drawings – in addition to the equipment grounding conductor installed with the circuit conductors – a separate equipment grounding conductor shall be installed from the indicated equipment to the grounding electrode system.

For exterior metal or concrete light poles – in addition to the equipment grounding conductor installed with the circuit conductors – a separate equipment grounding conductor shall be installed from the light pole to the grounding electrode system.

Bond the electrical system grounding system with the Lightning Protection System in accordance with UL 96 and NFPA 780.

Install all grounding components in an effective manner. Clean surfaces to be connected. Remove paint, grease, plastic, and any substances from surfaces that may interfere with the conductivity of the grounding connection.

All ground conductors and associated components shall be installed in a manner such that they will be protected from damage during construction and for the life of the WTP, WWTP, Pumping Station, or other structure. All installation shall be in a manner such that no potential tripping hazard will be created. Install in concealed conduit where applicable to avoid creating a potential tripping hazard.

Prior to final inspection provide a written report from the Electrical Subcontractor certifying that the grounding and bonding system has been installed in accordance with the NEC and project requirements, has been properly tested, and is suitable for normal and safe usage.

Perform a grounding system test by using the rate-of-fall of potential test. The resistance to ground shall not exceed 5 ohms.

The Electrical Subcontractor shall completely test the grounding system from all equipment (motors, lights, panels, etc.) to the grounding electrode system and shall provide written certification that all ground connections have been properly made and provide minimal resistance.

Provide a written report to the Owner listing individually all circuits tested, the type of test, the results, and certifying that all circuits passed the testing. The report shall be in a format acceptable to the Owner.

APPENDICES

EQUIPMENT PURCHASE BID PACKAGE

ADVERTISEMENT FOR BIDS

Sealed proposals for **EQUIPMENT ONLY** for the **Replacement of Pelham Wastewater Treatment Plant Grit and Grease Removal System** will be received by the City of Pelham, Alabama (Owner) in the 2nd Floor Conference Room located at 3111 Cummings Street, Pelham, Alabama 35124 until **10:00 a.m.**, the prevailing time, on **May 20, 2022**, at which time and place they will be publicly opened and read. The bid is comprised of the following principal items and approximate quantities:

One Traveling Bridge, Grit Pump, Grease Skimmer, Electrification, and Controls

Specifications may be inspected at the City of Pelham's Development Services and Public Works located at 3111 Cummings Street, Pelham, Alabama 35124, and they may be inspected or obtained from the office of Municipal Consultants, Inc., 200 Century Park South, Suite 212, Birmingham, Alabama 35226.

All Bidders must be responsible, meeting the criteria and requirements set forth in the specification documents.

This project is governed by competitive bid laws as contained in the Alabama Code. Bidders, subcontractors, suppliers, and Bond Agents should be familiar with this code.

The Owner reserves the right to reject any or all proposals and to waive technicalities. No Bidder may withdraw his bid within thirty days from the date set for receiving of the same. There will not be a Pre-Bid Conference for this Project.

This project is governed by the applicable bid laws and practices of the State of Alabama.

By Andre' Bittas
Title Director of Development Services and Public Works

MUNICIPAL CONSULTANTS, INC.
Consulting Engineers
200 Century Park South, Suite 212
Birmingham, AL 35226

INVITATION TO BID

Replacement of Pelham Wastewater Treatment Plant Grit and Grease Removal System

Bid Date: Friday May 20, 2022 at 10:00 a.m.

The City of Pelham will be accepting Sealed Bids for the Replacement of Pelham Wastewater Treatment Plant Grit and Grease Removal System:

Equipment to be provided is shown in the Bid Proposal Form. Equipment shall be as provided by Schreiber or approved equal. Pricing provided shall be total and include all shipping, handling, and delivery.

Bids must be submitted in a sealed envelope marked **Replacement of Pelham Wastewater Treatment Plant Grit and Grease Removal System – Bid Opening** and should be addressed to **Andre' Bittas, Director of Development Services and Public Works, City of Pelham, P.O. Box 1479, Pelham, Alabama 35124.** Bids may be hand delivered to Development Services and Public Works, 3111 Cummings Street, Pelham, Alabama 35124 prior to the scheduled bid opening, but no later than 10:00 a.m. on the day of the bid opening.

Bids will be opened and recorded by the City Director of Development Services and Public Works on **May 20, 2022** at **10:00 a.m.** at Development Services and Public Works, 3111 Cummings Street, Pelham, Alabama 35124. The City of Pelham has the right to refuse any and all bids which are deemed not be in the best interest of the city.

The specifications are being provided to potential bidders as guidelines, which describe the type of equipment, and/or service the City of Pelham is seeking to purchase. Specific questions regarding bid specifications should be addressed to Stuckey Godfrey – stuckeyg@municipalconsultants.org – 205-822-0387

It will be assumed that all bids are based upon the specifications unless the bidder stipulates to the contrary on the proposal form; in which case, the bidder shall point out any and all deviations from the specifications.

All bids shall be legible in a typed or a hand written format. Bids prepared in pencil will not be accepted. Bids shall be submitted on the attached "Bid Proposal Form." An authorized agent of the company submitting a bid must sign the bid. Any bid submitted without being properly signed will be rejected.

Prices quoted shall be delivered prices. The City of Pelham is exempt from State and Federal taxes. The City will assume no transportation, handling or shipping charges unless the charge is included in the submitted bid.

The City of Pelham reserves the right to alter or change specifications and to reject any or all bids received or waive any informality in the bidding.

Bid prices shall remain firm for 60 days.

Upon the agreement of both the Bidder and the City, the bid pricing provided may be extended for an additional 180 days under the same terms and conditions including pricing and delivery.

The successful bidder shall assume full responsibility for warranty of all components within these specifications. A statement shall be attached with the proposal setting out the conditions of the warranty.

The City of Pelham provides equal opportunities for all businesses and does not discriminate against any vendor regardless of race, color, creed, sex, national origin, disability, religion, or age in consideration for an award.

To be awarded the bid by the City, a bidder must comply with Alabama law, including, but not limited to, Ala. Code (1975) §§41-16-50 et seq. and 31-13-1 et seq., and provide documentation of enrollment in the E-Verify program pursuant to Ala. Code §31-13-9. If this law does not apply, bidder shall provide a waiver to that effect.

André Bittas

André Bittas, Director of Development Services and Public Works

Posting Date: May 6, 2022

CITY OF PELHAM
REPLACEMENT OF PELHAM WASTEWATER TREATMENT PLANT
GRIT AND GREASE REMOVAL SYSTEM
GENERAL SPECIFICATIONS

DEFINITIONS

Bid – A complete and properly signed Bid Proposal to provide the City the services as described in the specifications and submitted in accordance with instructions and applicable laws.

Bidder – An entity who submits a bid.

Contract Documents – Shall consist of Invitation to Bid, Bid Proposal Form, Equipment Specifications, Contract or Acceptance of Bid, and General Specifications.

BIDDER REPRESENTATIONS

By submitting a Bid, the Bidder represents and warrants to the City that (a) the Bidder is able to provide the materials as outlined in the Contract Documents for the contract period and meet all required timelines and scheduling parameters; (b) Bidder has carefully examined all Contract Documents; (c) Bidder fully understands the intent and purpose of the Contract Documents; (d) Bidder understands and will comply with all applicable laws, regulations, and codes of various governmental agencies; (e) Bidder has extensive and proven experience manufacturing traveling bridges that reliably and cost-effectively remove grit and grease from raw wastewater; and (f) the bid is based on the Specifications set forth in the Contract Documents without exception. Claims for additional compensation and/or extensions of timelines relating to such will not be allowed.

BIDDER QUALIFICATIONS

Bidders must submit product information with bids. Information to be submitted must document to Pelham's satisfaction that the equipment proposed complies with all the specifications and must list all exceptions to the specifications. Bidder must submit with its bid documentation that Pelham determines (to its satisfaction) clearly proves the bidder has sufficient experience manufacturing equipment that is similar to and as good or better to that being replaced. The Bidder must submit documentation with its bid showing that it has current inhouse expertise and personnel to design and manufacture such equipment. Failure to submit satisfactory documentation of compliance or to list all exceptions may be cause for disqualification and rejection of the bid.

CONSIDERATIONS OF BIDS, ACCEPTANCE OF BIDS, AND AWARD

1. The City shall have the right to reject any and all bids; to reject a bid that does not meet the requirements of the Contract Documents; to reject any bid which is in any way incomplete or irregular; and to waive any informalities and technicalities.
2. It is not the policy of the City to purchase on the basis of low bid only. Quality, conformity with the specifications, terms of delivery and past service and experience are among the factors that may be considered in determining the responsive bidder.

CANCELLATION CLAUSE

The City reserves the right to cancel the contract at any time during the contract term if the vendor is not complying with the Contract or is not responsive.

HOLD HARMLESS

The Vendor further agrees to indemnify, hold harmless and defend the City and its officers, agents, employees, and engineer (Municipal Consultants, Inc.) from and against all claims, lawsuits, damages, losses and expenses including reasonable attorneys fees, arising out of or resulting from the performance of this contract, provided that any such claim, damage, loss or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of any property, including the loss of use resulting therefrom, and (b) is caused in whole or in part by a negligent act or omission of the vendor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. The vendor will be responsible for any additional costs incurred by the City due to the defective material.

CITY OF PELHAM
REPLACEMENT OF PELHAM WASTEWATER TREATMENT PLANT
GRIT AND GREASE REMOVAL SYSTEM
EQUIPMENT SPECIFICATIONS

1.0 GENERAL

1.1 DESCRIPTION:

A. Scope: Provide all labor, materials, equipment, and incidentals required to furnish an Aerated Grit and Grease Removal System complete with baffle separated grit and grease channels, traveling bridge, grit pump, grease removal hardware, control equipment, and all other components as needed for proper, reliable, and safe operation. Each unit shall be complete and fully operational. The existing Grit and Grease Removal System utilizes concrete tankage which was designed and constructed to accommodate equipment manufactured by Schreiber. The Grit and Grease Removal equipment presently installed was designed by and provided by Schreiber for the existing tankage. By the submission of a bid, the manufacturer warrants that it will provide equipment that will exactly fit and properly perform in the existing concrete tankage. If the equipment does not fit properly or perform properly, the manufacturer shall immediately and promptly make whatever modifications are needed to the equipment to remedy the issue. The equipment shall be designed for and suitable for use in removing grit and grease from the untreated sewage entering the wastewater treatment plant. All equipment provided shall be suitable for the environment in which it will be installed. All equipment provided shall perform reliably and dependably.

B. The equipment manufacturer shall completely design and furnish a coordinated and completely engineered system to meet all the conditions required by the project. The equipment manufacturer shall be solely and fully responsible for the entire design of all equipment provided by it. This design responsibility includes, but is by no means limited to, process design, structural design, mechanical design, electrical design, and safety design, etc.

C. This specification does not contain all the information necessary to manufacture the equipment. It is the responsibility solely of the equipment manufacturer to obtain additional important information not contained herein for the bidding and manufacturing of the equipment.

D. General Operation: The Grit and Grease Removal System shall consist of a rectangular structure, the length of which is fit with sloped walls tapering to a narrow collection trough in the floor. The structure shall be divided lengthwise into two channels, the grit channel and the grease channel, by a permeable baffled divider. The grit side of the channel shall be equipped with coarse-bubble air diffusers which, when fed by blower air, create a rolling turbulence throughout the channel length that separates lighter organic particles, and scrubs agglomerated grease from inorganic particles (grit). The grease side of the channel shall be isolated from the turbulence of the grit channel by the baffled divider such that it remains quiescent. Below the rolling turbulence, scrubbed grit shall settle, aided by the tapered walls, to the collection trough on the structure floor. Simultaneously, liberated grease shall rise

(float) to the surface of the quiescent grease channel. As required by loading, the grit shall be pumped from the collection trough by means of a submersible pump which is carried along the structure length by a traveling bridge. The pumped grit slurry shall be then conveyed to remotely located grit separation equipment. Likewise, floating grease shall be simultaneously shepherded along the surface of the grease channel for efficient extraction and separation.

E. Corrosion Protection: All motors, gear reducers, bearing housings and valves shall be coated with the respective manufacturer's standard machinery enamel. All other mild steel parts to be hot dip galvanized following fabrication. The galvanizing shall be conservatively applied to insure long life in the corrosive environment. Stainless steel or aluminum parts will not be coated. No field painting is required.

1.2 QUALITY ASSURANCE:

A. Manufacturer's Qualifications: All equipment furnished under this section shall be furnished by a single manufacturer. The manufacturer shall have sufficient long-term experience successfully designing and manufacturing traveling bridge aerated grit and grease removal equipment similar to that being replaced at Pelham. The manufacturer shall have a sufficient history of installations in the United States that have performed reliably and successfully to prove the manufacturer's capability to the produce the required equipment. Pelham shall be the sole determiner of what constitutes acceptable experience and history. The bidder shall submit, with its bid, documentation satisfactory to Pelham of compliance with this experience requirement. Unsatisfactory documentation may result in the rejection of the bid.

B. Reference Codes and Standards:
   1. NFPA 70 – The National Electrical Code (NEC)
   2. NFPA 820 – Standard for Fire Protection in Wastewater Treatment and Collection Facilities

1.3 SUBMITTALS:

A. Submit for approval the following:
   1. Product literature.
   2. Complete description.
   3. Dimensions and required clearances.
   4. Weights and forces.
   5. Layout drawing for all equipment showing installation details.
   6. A list of all deviations from contract drawings and specifications.
   7. Manufacturer's Warranty.

B. Submittals shall be provided in book-marked and searchable electronic format.

C. Maintenance and Operating Manual and Instructions (O&M Manual): Manufacturer's maintenance, operating, and installation instructions manual in book-marked and searchable electronic format shall be provided during manufacturing, well prior to shipment. At completion of startup, if there are any changes, manufacturer shall complete all "As-built" revisions and final copy in electronic format, and up to (3) hard copy sets upon request. The manual shall clearly address all recommended maintenance. The manufacturer's O&M

Manual shall clearly address all recommended safety practices, safety procedures, and safety precautions, etc.

D. The submittal and manual shall be specific for the equipment actually provided. If the submittal or O&M manual contains references to equipment components or parts or material different from that actually furnished, the Manufacturer shall cross out the inapplicable references or sections. The manual shall not include references to "optional" features or components, etc., without clearly and specifically clarifying whether such an option was actually provided.

E. Submittals shall contain the manufacturer's handling and storage requirements, including all maintenance required during storage, type of storage (indoor, outdoor, etc.), heat source, or storage temperature requirements, short term or long term requirements, and all other pertinent storage and maintenance requirements for type of job, location, and exposures. This storage information shall be clearly written, easy-to-understand, detailed, and complete. If preprinted storage instructions are provided, cross out all non-applicable information. Storage instructions shall separately state instructions for short-term storage, long-term storage, and storage after equipment is installed but before placed into fulltime operation. The manufacturer shall provide detailed and clearly written installation instructions that will enable the installer to properly install the equipment.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING:

A. Delivery and Handling of Equipment by CONTRACTOR / PURCHASER:
   1. Inspect all equipment and materials against approved submittal documents at the time of delivery.
   2. Equipment and materials damaged or not meeting the requirements of the approved submittal documents shall be immediately documented and manufacturer notified.

1.5 GUARANTEES:

A. All equipment shall be warranted by the Manufacturer against defects in materials or workmanship for a period of 12 months from date of acceptance and/or beneficial use not to exceed 18 months from the date of shipment, whichever occurs first.

2.0 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS:

A. Schreiber, a Parkson Brand, Trussville, Alabama.

2.2 SERVICE CONDITIONS:

A. General: Provide one (1) combination Aerated Grit and Grease Removal unit(s). Each unit shall include a traveling bridge equipped with a submersible grit pump, grease collection and controls, as indicated.

B. Design Criteria:

Model (Equipment must meet or exceed all specifications)	SFB-400
Service Type	Grit & Grease
Average Daily Flow (gpm)	2,778
Minimum Water Elevation (FAMSL)	448.41
Maximum Water Elevation (FAMSL) (Peak Flow)	449.31
Grit Channel Invert Elevation	437.42
Floor on which Rails Mount	450.75
Channel Length (ft) (Grease Chamber)	85
Grit Channel Width (ft)	6.5
Grit Channel Side Water Depth (ft)	10.99 min 11.89 max
Grit Classifier Model	12" (Existing)
Grease Channel Width (ft)	5.83
Grease Collection	Mechanical
Duty Blower Quantity	One (1) (Existing)
Standby Blower Quantity	One (1) (Existing)
System Electrical Supply Voltage and Phase (VAC x #)	480 x 3 Ph
System Electrical Supply Frequency (Hz)	60
NFPA Classification – Minimum	Class 1, Division 2

C. The manufacturer shall coordinate all dimensions to ensure that the equipment properly fits the existing concrete structure.

D. Area Hazard Classification: Equipment shall be designed by the manufacturer, constructed and installed to be suitable for use in the locations indicated on the contract drawings with area classifications as follows:

1. In accordance with NFPA 820, the grit and grease structure including its exterior walls or liquid containment; as well as the areas extending 10 feet away from the exterior liquid containment, shall be designated NEC Class I Division 2. Areas beyond the 10 feet distance shall be Unclassified (non-hazardous).

2.3 DETAILS OF CONSTRUCTION:

A. Traveling Bridge:

1. Bridge Frame:

a. The traveling bridge shall contain and support the grit removal pump and its positioning and retrieval system, grit discharge piping, drive mechanism, and an operator's control station. The traveling bridge shall span the grit compartment with wheels running on top of standard 25-lb. ASCE steel rails provided by the equipment manufacturer that are attached to the exterior wall and the longitudinal beam. The equipment manufacturer shall provide rail attachment clips and stainless steel anchor bolts for attachment to the concrete. The steel rails and rail support bases shall be hot dipped galvanized after fabrication. The bridge shall be supported by solid-shaft axles, two with two idler wheels and the other two with drive wheels. All axles shall

be supported at both ends by sealed pillow-block bearings fit with whips and grease fittings to allow for unobstructed routine lubrication. Wheels shall be of steel construction, with two being of flanged construction to assure proper tracking on steel rails.

b. The bridge frame shall be of welded construction with maximum deflection of 1/720 of the span with a dead load plus 100-lb./ft2 live load. Bridge frame shall be constructed of steel and hot-dip galvanized after fabrication.

c. The traveling bridge walkway shall be 48" wide, shall have aluminum grating deck, and shall have handrails on each side of the walkway, 42" in height. Handrails shall be constructed of 1.9" diameter round aluminum tubing with stainless steel hardware.

d. Bridge shall be designed in conjunction with drive system and controls to ensure a Maximum Bridge Speed of 10 ft./min.

e. Bridge shall be designed in conjunction with drive system and controls to ensure that wheel slippage or bridge stall is detected and annunciated in less than 2 seconds.

f. Bridge stops shall be furnished on traveling surfaces to limit run of bridge and maintain clearance between bridge and adjacent equipment.

2. Bridge Drive:

a. Gears: Precision-cut helical gears, SAE 8620 forged, with AGMA Class 12 finish.

b. Gearbox:

(1) Material: Cast Iron

(2) Gearbox shall be painted on the inside with a corrosion-resistant paint.

c. Bearings:

(1) B-10 Bearing Life: 40,000 hours minimum

(2) Lubrication: Run in oil bath or packed with bearing grease.

(3) Quality: ABEC 1

d. Seals:

(1) Provide double lip seals on all input and output shafts.

(2) Material: Nitrile (Buna N)

(3) Temperature Range: -40°F to 250°F

e. Rotation: Capable of clockwise or counter-clockwise rotation without restriction.

f. Service Factor: Conform to AGMA standards with a minimum service factor of 1.5 based on nameplate motor horsepower.

g. Operation: Design for continuous duty.

h. Motor:

(1) Type: Reversible

(2) Rated for the area hazard classification; Class 1, Division 2 minimum

(3) Size: 1/4 HP

(4) Brushless, suitable for operation under supply power as indicated in Design Criteria. Wound Class F with a B temperature rise, sealed anti-friction type ball or roller or tapered bearings with a minimum B-10 life of 40,000 hours.

(5) Stator bore, rotor surface, and conduit box interior shall be coated with a polyurethane insulator paint.

(6) Arrange stator housing and conduit box with any weep holes positioned for drainage, based on the mounting position of the motor.

i. Shafts and Couplings:

(1) Gearmotor shall operate the driven wheels via machined and keyed shafting.

(2) Driven shafting shall be coupled to the gearmotor via industrial grade, all-metal universal joints, protected by flexible rubber booting.

(3) Gearmotor, shafting and couplings shall be arranged such that alignment between all moving components is non-critical and can be easily positioned during maintenance without the use of indicators or other precision tools.

(4) Maintenance brackets shall be provided to secure shafts and couplings while disconnected from the gearmotor and/or wheels.

3. Grit Pump Retrieval and Positioning Systems:

a. The traveling bridge shall be equipped with a rail system for retrieving and deploying the submersible Grit Removal Pump. The system shall be arranged such that the pump ascends and comes to rest on the bridge grating completely within the confines of the traveling bridge handrails, without the use of secondary work platforms, and without the need for personnel to reach beyond the perimeter of the walkway. The system shall have the following features:

(1) Retrieval of the grit removal pump shall not cause or result in any portion of the traveling bridge or its appurtenances to extend outward beyond the traveling bridge perimeter, or upward above shoulder level.

(2) Grit removal pump retrieval and deployment shall be accomplished without the disconnection of hoses and without the use of any tools.

(3) Grit removal piping shall be arranged for automatic draining.

(4) A self-locking winch with integral brake, and fit with a stainless steel cable shall be provided for retrieving and deploying the grit removal pump. The winch shall be mounted to a hoist frame constructed of welded aluminum to minimize weight. Attachment of the winch to the hoist frame shall be via quick-release hardware such that no tools are required for its removal. The winch shall be used only to raise and lower the grit removal pump, and shall not be required to maintain its position.

b. The traveling bridge shall be equipped with a hand crank mechanism, easily accessible from within the confines of the handrails, to position the Grit Pump at varying levels above the grit channel floor. The mechanism shall have the following features:

(1) The positioning system shall function independently of the grit pump retrieval mechanisms such that retrieval and deployment of the grit pump shall not affect its set position.

(2) No tools shall be required to utilize the positioning system.

(3) The range of adjustment for the grit pump position shall be 8" minimum.

(4) The positioning mechanism shall be equipped with a visual scale to numerically indicate the position of the pump relative to the grit channel floor.

4. Electrical Conduit:

a. Traveling bridge shall be pre-wired with 304 SS conduit and fittings.

B. Grit Removal Pump:
   1. Service conditions:
      a. Provide submersible grit removal pump with Vortex impeller for handling a grit slurry, supported from and moving with the traveling bridge. The pump shall be provided with a suction leg. Pump shall discharge to grit trough, which feeds grit classifier.
         (1) Design Capacity: 120 gpm at 10 ft. T.D.H.
         (2) Type: Submersible
         (3) Size: 3.0 HP Maximum
         (4) Speed: 1,750 rpm
      b. Pump shall be suitable and certified for use in area hazard classification as indicated in Design Criteria. Since explosion proof (Class I Division 1 or Division 2) pump is required, pump shall be accompanied by all supervision devices (Control and Status, CAS or equal) as required by the manufacturer to maintain the marked classification.
   2. Materials of construction
      a. Pump casing, impeller, and motor housing: Class 30 gray cast iron
      b. Hardware: 18/8 or 304 type stainless steel.
      c. The materials shall be as recommended to pump abrasive grit in a raw sewage environment.

C. Grease Collection/Removal:
   1. The grease collection/removal equipment shall include a grease scraper in the grease channel supported on a cantilevered arm extending off the end of the end of the traveling bridge. It shall move partially submerged below the water surface in the collecting direction and shall be raised above the water surface by its bridge mounted motor for the return direction. Grease and scum shall be pushed along the grease channel as presently constructed. Flexible squeegees shall be provided on each end of the blade to inhibit floating grease and scum from escaping at the sidewalls. The grease scraper shall be constructed of steel and hot-dip galvanized after fabrication.
   2. The grease scraper shall effectively remove grease over a fluctuating water level range of 12.2". Effluent weirs are installed to maintain channel water level within this approximate range.

D. Electrical Controls:
   1. Controls Scope - Controls shall be provided to allow and accomplish the following:
      a. Selection of automatic, manual and off modes.
      b. Facilitate the automatic cycling of the Grit and Grease Removal Equipment through the full operational sequence at timed intervals, including continuous operations during high loading events.
      c. Emergency stop and reset/restart of equipment during the automatic operational sequence.

d. Manual operation of all individual functions, mutually interlocked such that operational conflicts are not possible.
e. Status Monitoring of system and individual components.

2. Controls Architecture – Controls designed and deliverable by the manufacturer shall include the following:
   a. All controls hardware shall be designed by the manufacturer, constructed and installed to be suitable for use in the specified area classification.
   b. Controls system deliverables shall include:
      (1) Main Control Panel – Structure Mounted
      (2) Remote Operator's Station – Traveling Bridge Mounted
      (3) Electrification Junction Box – Traveling Bridge Mounted
      (4) Sensors for detection of component location
      (5) Sensors for detection of traveling bridge wheel slippage
3. A Main Control Panel having the following features shall be provided for installation where indicated on the plans, remote from the Traveling Bridge:
   a. Single point connection of supply power as indicated in Design Criteria.
   b. Incoming Power Phase Monitor, interlocked with control functions.
   c. Main circuit breaker, external-lever operated, OSHA lock-out via pad-lock compliant.
   d. Automatic / Remote / Manual / Off "Mode" selector switch.
   e. Cycle Start manual operator.
   f. Cycle Start automatic interval timer, user-selectable from front panel of enclosure.
   g. Emergency Stop and Reset operators.
   h. Bridge Drive reversing motor starter, manual control operators, and running and fail indicators (all lights to be LED with push-to-test). Bridge Drive controls shall include inputs, status indicators and control logic for home, away and stall detection proximity limit switches.
   i. Grit Pump variable frequency drive and manual control operators and running and fail indicators (all lights to be LED with push-to-test).
   j. Skim Blade reversing motor starter, manual control operators, and running and fail indicators (all lights to be LED with push-to-test). Skim Blade controls shall also include inputs for raised and lowered proximity limit switches, and visual position indicators.
   k. Grit Classifier motor starter and manual control operators and running and fail indicators (all lights to be LED with push-to-test).
   l. All motors shall be monitored and interlocked with controls to protect all equipment and provide indication and alarm upon fault.
   m. NEMA 4X Stainless Steel enclosure.
      (1) Enclosure to include 3 point latch.
   n. Manufacturer's UL Listing Label for UL 508A
   o. Include the following as a minimum:
      (1) One (1) Control transformer
      (2) One (1) Surge suppressor, 3PH

(3) One (1) Surge suppressor, 1PH
(4) One (1) VFD, ATV320, 480V, 3HP max with fuse protection (Grit Pump)
(5) Two (2) FVR starter, 480V, 1/4HP max with circuit protection (Bridge Motor and Skim Blade)
(6) One (1) FVNR starter, 480V, 1HP max with circuit protection (Grit Classifier)
(7) One (1) Smart relay with IO as required
(8) One (1) Ground bar
(9) One (1) LOT of PTT LED pilot lights, operators, fuses, terminal, wire ducts, supplement circuit breakers, relays, and UL label as required
(10) One (1) large Emergency Stop mounted in prominent location on the panel

4. A Remote Operator's Station, mounted on the Traveling Bridge, and having the following features shall be provided:
   a. Cycle Start manual operator.
   b. Emergency Stop and Reset operators
   c. Intrinsically Safe Relays for monitor of Limit Switches
   d. Intrinsically Safe Relay for monitor of Stall Detection System
   e. Automatic / Manual "Mode" selector switch.
   f. Bridge Drive manual control operators.
   g. Grit Pump manual control operator.
   h. Skim Blade manual control operators.
   i. NEMA 7 Cast Aluminum Enclosure.
   j. Manufacturer's UL Listing Label, UL 508A.
5. A junction box, mounted on the Traveling Bridge to serve as a landing point for the electrification cabling, and having the following features, shall be provided:
   a. Cord grips and seal-offs as required to provide entry points for electrification cabling.
   b. Terminal strips as required for all through connections.
6. A junction box, mounted where indicated on plans at the fixed end of the electrification cabling to serve as a landing point for the electrification circuits, and having the following features, shall be provided:
   a. Cord grips and seal-offs as required to provide entry points for electrification cabling.
   b. Terminal strips as required for all through connections.

E. Electrification:
   1. Power and Signal Cable System:
      a. Provide a festoon cable system to deliver power from the junction box to the traveling bridge.
      b. System shall be designed for outdoor applications.
      c. System shall have adequate cable capacity to provide for continuous travel of full length of tank. The equipment manufacturer shall determine the length of the cable actually required for the Pelham Wastewater Treatment Plant.
      d. Cable shall be looped with a 5 ft. maximum loop depth with each end of the loop being attached to a separate carrier.

e. Upon traveling to the end of the tank the loops shall be extended to form a draped cable supported by each carrier. As the cable returns, the loop shall be retracted by the action of the tow mechanism fastened to the moving bridge and to the lead carrier.

2. Cable Description:
   a. Provide outdoor duty cable with weatherproof neoprene jacket, resistant to UV.
   b. Use No. 12 AWG minimum cable for power. The equipment manufacturer shall be responsible for de-rating wire sizes if needed for the length of the run.
   c. Provide cable connectors on each end of cable to connect to the junction box and the traveling bridge.
3. Festoon System:
   a. Wire Rope System:
      (1) Provide a stainless steel rope to extend overhead between two (2) galvanized steel columns.
      (2) Provide a turnbuckle on one end of the wire rope.
      (3) Provide end clamps on one end of the festooning and one on the towing arm.
      (4) Provide a cable towing trolley and towing arm.
      (5) Provide an adequate number of cable trolleys such that the load per trolley does not exceed 15 pounds.
   b. Provide all necessary hangers, supports, carriers, clamps, end straps, fixtures, and couplers necessary for a complete system
4. All bridge wiring shall be prewired by the equipment manufacturer. Conduit shall be 304 SS. All wiring shall be in full accordance with applicable codes.

3.0 SERVICES

3.1 MANUFACTURING AND TESTING

If the Owner desires, the equipment manufacturer shall allow the Owner to make periodic visits to the location of the manufacturing to observe the equipment as it is being manufactured and tested. However, the Owner shall be under no obligation to make such visits or inspections of any type as the proper manufacture is the responsibility solely of the manufacturer.

The manufacturer shall thoroughly and carefully test the equipment (including but not limited to controls and control panels) to the greatest extent possible prior to shipment to the Pelham Wastewater Treatment Plant to insure it is suitable for operation immediately after installation in the existing tankage. There is no standby grit and grease removal capability at the Pelham Wastewater Treatment Plant. Therefore, once the existing equipment is removed from service, there is no provision for grit and grease removal until the new equipment is installed and made operational. Thus, factory testing is important to insure that the new equipment can be made fully and properly operable as soon as possible after it is installed.

3.2 INSTALLATION

Provide delivery to the Pelham WWTP and coordinate delivery so that arrangements can be made to have off-loading equipment and personnel on site.

A. Installation of equipment shall be by General Contractor.
B. All final electrical connections to be made by the General Contractor.
C. All field wiring shall be constructed and installed per relevant sections of the National Electric Code (NEC)
D. After the installation of the new equipment is complete, the equipment manufacturer shall provide the owner with an installation certificate signed by the equipment manufacturer's authorized representative attesting the equipment has been properly installed and is ready for start-up and continuous operation.

3.3 FIELD SERVICES:

A. Provide Installation Assistance for up to two (2) days with one (1) trip to assist and direct the Installer in the proper assembly and connection of equipment.
B. Provide Mechanical and Process Start-Up for up to one (1) day with one (1) trip to inspect installation and instruct and train Purchaser in the proper operation and maintenance of the units.
C. Training shall include:
    1. Instruct Purchaser in the operation of the equipment provided under this item. All procedures shall be covered including methods of setting and controlling equipment, and appropriate responses to fluctuating site conditions.
    2. Instruct Purchaser in the maintenance of the equipment provided under this item. All procedures shall be covered including preventative maintenance and troubleshooting methods.
    3. The equipment manufacturer shall fully instruct the Owner regarding all recommended safety procedures.
    4. The manufacturer's representative for installation assistance, start-up, and training shall be from the factory and shall have a minimum of 10 years of meaningful and acceptable experience starting up such equipment. The representative shall be well qualified to perform the startup and training.

4.0 SCHEDULE AND PAYMENT

4.1 PAYMENT:

A. 5% upon Submission of satisfactory Drawings and other required submittal items that are suitable for Approval
B. 85% Upon delivery of equipment, fully complying with all the specifications, to the Pelham Wastewater Treatment Plant
C. 10% Upon acceptance, but not to exceed 150 calendar days from completion of installation provided the equipment meets all the requirements of these specifications.

4.2 SCHEDULE:

Submittals shall be provided 6 – 8 weeks after Purchase Order or Contract is issued by the City of Pelham.

Shipment is estimated 14 – 18 weeks but shall occur no later than 22 weeks after receipt in manufacturer's office of complete approved submittal data. A submittal status of "Approved as Noted" shall be considered as "Approved" for the purpose of the schedule.
After a Purchase Order or Contract is issued by the City of Pelham, the manufacturer shall provide meaningful, approximately monthly, progress reports describing the manufacturer's status and discussion with respect to meeting the above schedules.

Time is of the essence and the bidder shall make every effort possibly to comply with the schedule.

CITY OF PELHAM
REPLACEMENT OF PELHAM WASTEWATER TREATMENT PLANT
GRIT AND GREASE REMOVAL SYSTEM
BID PROPOSAL FORM

Submitted below is our firm bid for the equipment for the Replacement of Pelham Wastewater Treatment Plant Grit and Grease Removal System, which is in accordance with the Invitation to Bid, General Specifications, and Equipment Specifications. The City of Pelham is a tax-exempt entity and bid prices shall not include sales tax.

The Bidder must complete all blanks in the Bid Form.

ITEM #	DESCRIPTION	Quantity	UNIT	UNIT PRICE	TOTAL
1	Pelham Wastewater Treatment Plant Grit and Grease Removal System	1	Per Each	_____	_____
	TOTAL OF BASE BID				_____

Manufacturer of Equipment: Schreiber or _____

(Circle "Schreiber" if Equipment is manufactured by Schreiber, or neatly print the name of the equipment manufacturer if not Schreiber)

List all exceptions to the Invitation to Bid, the Specifications, and the Equipment Specifications. *(If there are no exceptions write "No Exceptions.")*

_____

_____

_____

_____

_____

_____

Anticipated number of calendar days after Pelham's issuance of purchase order or contract for Manufacturer to deliver submittals meeting the requirements of the Invitation to Bid: _____ calendar days.

Anticipated number of calendar days after Manufacturer's receipt of Approved (including Approved as Noted) submittal by which equipment shall be delivered to the Pelham Wastewater Treatment Plant: ___ _____ calendar days.

THE UNDERSIGNED OFFERS THESE PRICES, TERMS, AND DELIVERY PER THE CONTRACT DOCUMENTS:

NAME OF COMPANY: _____

COMPANY ADDRESS: _____

SIGNATURE: _____

BY (PLEASE PRINT NAME AND TITLE): _____

PHONE NUMBER: _____

EMAIL ADDRESS: _____

BIDS ARE FIRM AND NO CLAIMS FOR ERRORS WILL BE MADE AFTER THE BIDS ARE OPENED AND SUBSEQUENT THEREOF.

SCHREIBER PROPOSAL
NOTICE OF AWARD
ACCEPTANCE OF AWARD

The City of Pelham, Alabama

Replacement of Pelham Wastewater Treatment Plant

Grit and Grease Removal System

Bid Date / Time: May 20, 2022 @ 10:00 a.m.

				Schreiber, a Parkson Brand	
ITEM	**QUANT**	**UNIT**	**DESCRIPTION**	**UNIT PRICE**	**TOTAL**
1	1	Each	Pelham Wastewater Treatment Plant Grit and Grease Removal System	$256,950.00	$256,950.00
			Total Base Bid		***$256,950.00***

I certify that these are the correct bids received by the City of Pelham, Alabama for the Replacement of Pelham Wastewater Treatment Plant Grit and Grease Removal System on May 20, 2022 at 10:00 a.m.

Chris Cousins, P.E. #23366

CITY OF PELHAM
REPLACEMENT OF PELHAM WASTEWATER TREATMENT PLANT
GRIT AND GREASE REMOVAL SYSTEM
BID PROPOSAL FORM

Submitted below is our firm bid for the equipment for the Replacement of Pelham Wastewater Treatment Plant Grit and Grease Removal System, which is in accordance with the Invitation to Bid, General Specifications, and Equipment Specifications. The City of Pelham is a tax-exempt entity and bid prices shall not include sales tax.

The Bidder must complete all blanks in the Bid Form.

ITEM #	DESCRIPTION	Quantity	UNIT	UNIT PRICE	TOTAL
1	Pelham Wastewater Treatment Plant Grit and Grease Removal System	1	Per Each	$256,950.00	$256,950.00
	TOTAL OF BASE BID				$256,950.00

Manufacturer of Equipment: Schreiber or _____

(Circle "Schreiber" if Equipment is manufactured by Schreiber, or neatly print the name of the equipment manufacturer if not Schreiber)

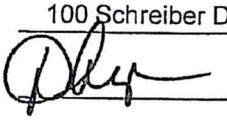
List all exceptions to the Invitation to Bid, the Specifications, and the Equipment Specifications. *(If there are no exceptions write "No Exceptions.")*

No Exceptions

Anticipated number of calendar days after Pelham's issuance of purchase order or contract for Manufacturer to deliver submittals meeting the requirements of the Invitation to Bid: 56 calendar days.

Anticipated number of calendar days after Manufacturer's receipt of Approved (including Approved as Noted) submittal by which equipment shall be delivered to the Pelham Wastewater Treatment Plant: 126 calendar days.

THE UNDERSIGNED OFFERS THESE PRICES, TERMS, AND DELIVERY PER THE CONTRACT DOCUMENTS:

NAME OF COMPANY:	SCHREIBER, a Parkson Brand
COMPANY ADDRESS:	100 Schreiber Drive, Trussville, AL 35173
SIGNATURE:	
BY (PLEASE PRINT NAME AND TITLE):	Dianne Kaplan, Contracts Manager
PHONE NUMBER:	954-935-6212
EMAIL ADDRESS:	dkaplan@parkson.com

BIDS ARE FIRM AND NO CLAIMS FOR ERRORS WILL BE MADE AFTER THE BIDS ARE OPENED AND SUBSEQUENT THEREOF.

CITY OF PELHAM
REPLACEMENT OF PELHAM WASTEWATER TREATMENT PLANT
GRIT AND GREASE REMOVAL SYSTEM
NOTICE OF AWARD

NOTICE OF AWARD

To: Schreiber, a Parkson Brand

Date: June 6, 2022

Project: Replacement of Pelham Wastewater Treatment Plant Grit and Grease Removal System

The OWNER has considered the BID submitted by you for the above described PROJECT in the bid received May 20, 2022.

You are hereby notified that your BID has been accepted for items in the amount of $256,950.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Please make your required submittals in the bid documents to be reviewed and approved prior to fabrication of the materials.

City of Pelham, Alabama
Owner

By: Gary W. Waters
Gary W. Waters, Mayor

CITY OF PELHAM
CITY
SEAL
ALABAMA

CITY OF PELHAM
REPLACEMENT OF PELHAM WASTEWATER TREATMENT PLANT
GRIT AND GREASE REMOVAL SYSTEM
NOTICE OF AWARD

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by Schreiber, a Parkson Brand this the 9th day of June, 2022.

Contractor

By: Dianne Kaplan

Contracts Manager
Title

EXCERPTS FROM PARKSON/SCHREIBER SUBMITTAL

SCHREIBER
Pure Ingenuity

SECTION FOUR

GRIT AND GREASE SEPARATOR

Schreiber shall furnish one (1) Grit and Grease Separator Model SFB 400. The unit shall be installed (by Others) on a concrete structure (by others) with the following characteristics:

Tank Length	85'-0"
Grit Basin Width	6'-6"
Grit Basin Depth	13'-4"
Grease Basin Width	5'-10"

The equipment will include the following:

1. One (1) traveling bridge, hot dip galvanized after fabrication:

   Bridge shall be supported by three axles, two with idler wheels and the other with two drive wheels. Wheels shall be made of A-36 steel. The two (2) wheels that ride on the inner rail (located on the wall between the grit basin and the grease basin) will be double flanged to keep the bridge on track. The two (2) wheels that ride on the outer rail will be unflanged.

   Traveling bridge shall include aluminum grating and 1 1/2" diameter aluminum handrails, 42" high.

   Traveling bridge shall have a 48" wide walkway.

   All wheels and support bearings shall have a calculated L-10 life.

   Necessary bridge stops.

   Maximum bridge speed: 10 ft./min.

   Bridge shall be pre-wired with 304 SS conduit and fittings. Pump, which is shipped separately, must be wired on site during installation.

2. Bridge is powered by a gearmotor, which consists of:

   Gears:
   - Type: Precision cut helical gears
   - Material: SAE 8620 drop forgings
   - Finish: AGMA Class 12
   - Hardness: 58-62 RC

   All necessary motion control switches including:

   i. Travel limit switch (2X) - IFM Effector inductive sensor model NI500A & cable ENC05A

   ii. Stall detect switch (1X) - IFM Effector inductive sensor model NF500A & cable ENC05A

Gearbox: Material: Cast iron
Design for maximum rigidity, absorbance of high torsional or linear stresses and noise absorption.
Gearbox shall be painted on the inside with a corrosion resistant paint.

Bearings: B-10 bearing life: 40,000 hrs. min.
Lubrication: Oil
Quality: ABEC 1

Seals: Double lip seals on all input and output shafts
Material: Nitrile (Buna N)
Temperature Range: -40EF to 250EF

Rotation: CW or CCW

Service Factor: 2.0

Operation: S1 Continuous duty

Insulation: Cl F (Cl B Rise)

Bearing Life: 40,0000 hr. (minimum)

Gear Reducer Manufacturer: SEW Eurodrive
Model No. S67AM56/DH
217.41:1 Ratio
4 rpm output (w/ 865 rpm input)

Motor Manufacturer: Baldor
Model 35S221-0091G3
0.25 HP
230-460/3/60hz, 8-Pole Motor, 865 rpm
Cl 1 Div 1

3. One (1) set of #25 primed steel Crane Rails, galvanized Base Plate and Clips.

4. One (1) submersible grit pump:
   Vortex impeller design
   Rated capacity - 120 GPM @ 10'- 0" TDH
   2.4 HP 460/3/60, FLYGT Model No. DF-3069X
   Includes hand cable winch and stainless-steel cable for servicing pump
   Discharge piping shall be sloped for gravity drainage
   Conery BERS-0300H Elbow

5. Manual Hoist Thern Model No. M4312PB (with Brake) for grit pump retrieval.

6. Positioning Jack Fulton F2 Model Number 1413250334, aluminum one ton construction for pump depth control.

7. Grease Removal System:

   a. Grease collection shall be accomplished with the use of a Grease Skimmer Blade Assembly, which pushes grease over an existing beach into a collection chute:

      1. Galvanized steel C-guide and drop pipe
      2. Galvanized steel constructed Blade Assembly
      3. 0.33 HP Drive Assembly consisting of:
         a. SEW R37EDRN71MS4BE05HR / CICIID2 / TF 460/3/60hz
            39.17:1 ratio (43 rpm Output w/ 1720 rpm Input).

8. One (1) Stretch Wire Rope festooning system consisting of:

a.	Wire Rope:	Material:	~~Vinyl Coated~~ Stainless Steel Wire Rope
		Quantity:	100 ft
		MMC No.:	8912T774
b.	Flat Cable	Material:	Neoprene, 12 C / 14 AWG
		Quantity:	272 ft
		Wampfler No.:	XA-579768
c.	Flat Cable	Material:	Neoprene, 12 C / 12 AWG
		Quantity:	136 ft
		Wampfler No.:	XA-579771
d.	Mounting Plate:	Material:	Plastic
		Quantity:	1
		Wampfler No.:	020190-12
e.	End Clamp:	Material:	Plastic
		Quantity:	1
		Wampfler No.:	020222-100
f.	Cable Trolley:	Material:	Plastic
		Quantity:	16
		Wampfler No:	021642-100
g.	Towing Trolley:	Material:	Galv. Steel
		Quantity:	1

		Wampfler No:	021611
h.	Cable Connectors:	Material: Wampfler No.: Quantity:	Aluminum XA-562447 (for 12/14) 4
i.	Cable Connectors:	Material: Wampfler No.: Quantity:	Aluminum XA-580529 (for 12/12) 2
j.	Span:	Approximately:	96'–0"

ANCHORAGE AND FASTENER (provided by Schreiber)

All anchorage for Schreiber equipment shall be chemical bond type (Hilti or equal) unless noted otherwise.

Stud shall be type 304 Stainless Steel
(unless noted otherwise)

Set at the Time of Installation

All fasteners shall be type 304 or 18-8 Stainless Steel

COATING

Mild steel fabricated and furnished by Schreiber shall be hot-dip galvanized after fabrication, unless noted otherwise.

All Motors, Gear Reducers, and similar items shall be per the original manufacturer's standard finish.

THE FOLLOWING ITEMS ARE BEING REUSED ON THE EXISTING INSTALLATION:

1. **Air Piping**
2. **Divider Baffles**
3. **Beaching Ramp**
4. **Blowers**
5. **Grit Classifier**
6. **Festoon Cable Support Brackets**

THE FOLLOWING ARE NOT INCLUDED IN SCHREIBER'S SCOPE:

1. **Installation of equipment.**
2. **Unloading of equipment from delivery trucks.**

3. Any concrete or grouting
4. Any embedded items
5. Field Painting
6. Any electrical wiring, conduit, junction boxes or controls not expressly included with this submittal. Bridge wiring (excluding grit pump) will be provided by Schreiber.
7. Any underground or interconnecting piping and/or valves.