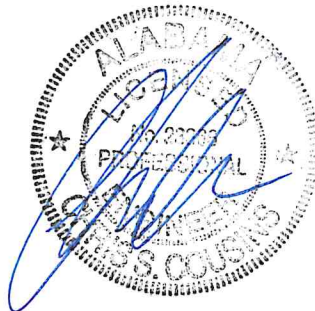


**THE CITY OF ALEXANDER CITY, ALABAMA
SPECIFICATIONS - CONTRACTUAL DOCUMENTS
2022 ANNUAL SANITARY SEWER
MAINTENANCE AND REHABILITATION
BID #22-06**



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

APRIL 2022

**THE CITY OF ALEXANDER CITY, ALABAMA
 SPECIFICATIONS - CONTRACTUAL DOCUMENTS
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GENERAL

ADVERTISEMENT FOR BIDS

Sealed proposals for the construction of **2022 Annual Sanitary Sewer Maintenance and Rehabilitation** will be received by The City of Alexander City, Alabama (Owner) at the Alexander City Clerk's office, 281 James D. Nabors Drive, Alexander City, Alabama 35010 until **2:00 p.m.**, the prevailing time, on **Tuesday, May 10, 2022**, or by mailing to P.O. Box 552, Alexander City, Alabama 35011 at which time and place they will be publicly opened and read. The bid is comprised of the following principal items and approximate quantities:

59,000 L.F. of Cleaning and Video Inspection of Sewer Mains
5,439 L.F. of 8" Cured-In-Place Pipe and Appurtenances
839 L.F. of 10" Cured-In-Place Pipe and Appurtenances
4,821 L.F. of 12" Cured-In-Place Pipe and Appurtenances
6,129 L.F. of 15" Cured-In-Place Pipe and Appurtenances
3,100 V.F. of Manhole Rehabilitation with Epoxy Liner
Miscellaneous Appurtenances and Work

Plans and Specifications may be inspected at the Alexander City Sewer Maintenance Department 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 **\$100.00**. Cost of plans and specifications are non-refundable. Plans and specifications may also be downloaded from the City of Alexander City at [www.alexandercityal.gov/rfps].

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: Curtis "Woody" Baird
Title Mayor

BID DOCUMENTS

GENERAL INFORMATION FOR BIDDERS

BIDS will be received by the City of Alexander City, Alabama (herein called the "OWNER"), at the Alexander City Clerk's office, 281 James D. Nabors Drive, Alexander City, Alabama 35010 until **2:00 p.m.**, the prevailing time, on **Tuesday, May 10, 2022**, and then at said office publicly opened and read aloud.

Each BID must be submitted in a sealed envelope, addressed to the City of Alexander City, Alabama at 281 James D. Nabors Drive, Alexander City, Alabama 35010. Each sealed envelope containing a BID must be plainly marked on the outside as BID for **2022 Annual Sanitary Sewer Maintenance and Rehabilitation** 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 P.O. Box 552, Alexander City, Alabama 35011.

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 Alexander City, 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
2022 Annual Sanitary Sewer Maintenance and Rehabilitation.

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.

Principal (L.S.)

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.

**THE CITY OF ALEXANDER CITY, ALABAMA
SPECIFICATIONS - CONTRACTUAL DOCUMENTS
2022 ANNUAL SANITARY SEWER
MAINTENANCE AND REHABILITATION
BID #22-06**

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 ALEXANDER CITY, ALABAMA
SPECIFICATIONS - CONTRACTUAL DOCUMENTS
2022 ANNUAL SANITARY SEWER
MAINTENANCE AND REHABILITATION
BID #22-06**

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

Pipe Line Cleaning & TV

Manhole Epoxy Lining

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 ALEXANDER CITY, ALABAMA
SPECIFICATIONS - CONTRACTUAL DOCUMENTS
2022 ANNUAL SANITARY SEWER
MAINTENANCE AND REHABILITATION
BID #22-06**

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 THRU 4 – CURED-IN-PLACE PIPE LINER

The Contract Unit Price per linear foot shall be payment in full for the furnishing of all labor, materials, and equipment necessary to completely and successfully install the cured-in-place pipe liner of various sizes and shall include, but not be limited to, pipe liner, wastewater diversion including bypass pumping, cleaning debris, root removal, traffic control, installation, remote cutting of pipe liner for existing laterals, sealing liner in manholes, non-shrink grout, television inspection after liner installation, site access, all labor, tools, and equipment,

disposal of excess materials, grassing, clean-up, replacement of any damaged property or pavement to pre-construction conditions as a minimum, handling and repairing existing utility services, testing, and all incidentals necessary and required to complete the work satisfactory to the Owner and Engineer. Contractor shall fulfill all requirements of the applicable agency when working within said agency's right-of-way. Measurement shall be based on the actual footage of liner installed. The footage measured will be less than the centerline-of-manhole to centerline-of-manhole distance unless the liner is installed continuous through the manhole.

ITEM 5 – MANHOLE REHABILITATION WITH EPOXY LINER

The Contract Unit Price Bid per vertical foot, (V.F.), shall be payment in full for the furnishing of all labor, materials, and equipment necessary to completely and successfully clean, de-root, prepare host surface (including but not limited to repairing benches and inverts), stopping leaks and any and all masonry work necessary (no additional payment of other bid items will be made for stopping leaks), wastewater diversion, traffic control, site access, and epoxy liner material per manufacturer's recommendations on walls, benches, and inverts which results in zero leakage into manhole. Contractor shall fulfill all requirements of the applicable agency when working within said agency's right-of-way. Price shall be based on 48" diameter manhole. Pricing for any manhole above this size will be increased prorata based on surface area of manhole square footage for 1 vertical foot in height in relation to surface area of 1 vertical foot in height of a 48" diameter manhole. This item includes reanchoring manhole frame before lining manholes if needed. The Owner reserves the right to only apply liner to the bottom portion of the manhole and stop liner at a certain point in manhole. In the instance where only a portion of the manhole is lined, payment shall be based on the actual vertical footage lined. The Owner and/or Engineer will designate manholes to be lined during construction.

ITEM 6 – RESERVED

ITEM 7 – EXCESSIVE HEAVY DEBRIS CLEANING

The Contract Unit Price per linear foot shall be payment in full for the furnishing of all labor, materials, and equipment costs associated with cleaning of excessively heavy amounts of accumulated roots, debris, grease, tuberculation, large stones, and bricks out of specific sanitary sewers, regardless of pipe diameter, located within the project area as directed by the Engineer or Owner. Remove the dislodged materials, and properly dispose of the removed materials in accordance with any current OSHA, federal, state, and local regulations.

ITEM 8 THRU 12 – CLEANING AND CCTV INSPECTION

The Contract Unit Price per linear foot shall be payment in full for the furnishing of all labor, materials, water, equipment necessary to completely and successfully clean, de-root, and remove all debris including grease and to dispose of properly in preparation to install CIPP. Cleaning shall include both the upstream and downstream manholes. Measurement shall be

based on the actual footage of pipe cleaned and televised. The footage measured and paid will be less than centerline to centerline of manholes. Protruding service removal is covered under other items. Pipe cleaned and televised may not necessarily be lined with CIPP. The Contractor's pre-TV inspection must be finished, and video provided to Engineer to review before any decision is made on those particular line segments as to methods (if any) to be used to rehab lines. Television records after construction is completed, will be paid in other items of the bid. Contractor shall fulfill all requirements of the applicable agency when working within said agency's right-of-way. The Contractor is responsible for wastewater flow management and site access.

ITEM 13 - PROTRUDING SERVICE REMOVAL

The Contract Unit Price Bid per each shall be payment in full for the furnishing of all labor, materials, and equipment necessary to completely and successfully cut/remove and restore protruding service laterals flush with inside barrel of the mainline or manholes.

ITEM 14 - MOBILIZATION FOR REHABILITATION COMPONENTS

The Contract Lump Sum Price shall be the cost allowed by the Owner for mobilization of Contractor's and Subcontractor's forces. The cost includes portions or all the Contractor's cost for bonds, insurance, set up of Contractor's and Subcontractor's forces and all field offices, acceptance by Engineer and Owner of schedule of payment values submitted by the Contractor, and all equipment and personnel movement. The price established by the Owner is an allowance for the Contractor and will be partially paid upon completion of initial mobilization. Only one mobilization charge is allowed regardless of how the Contractor manages the work and number of mobilization occurrences by the Contractor and Subcontractors. Any additional cost above the price established for mobilization shall be accounted for in other Bid Items.

ITEM 15 - ALLOWANCE FOR MISCELLANEOUS REPAIRS

The Contract Lump Sum Price shall represent an allowance for additional repairs to be made throughout the collection system as selected and determined by the Owner during construction. Additional repairs selected by the Owner shall be paid for out of the applicable unit price bid item. Repairs not covered under an established bid item shall only be made after written authorization from the Owner.

BID

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

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

In compliance with your Advertisement for Bids, BIDDER hereby proposes to perform all WORK for the construction of 2022 Annual Sanitary Sewer Maintenance and Rehabilitation 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	5,439	Linear Foot	8" Cured-In-Place Pipe Liner	\$ _____	\$ _____
2	839	Linear Foot	10" Cured-In-Place Pipe Liner	\$ _____	\$ _____
3	4,821	Linear Foot	12" Cured-In-Place Pipe Liner	\$ _____	\$ _____
4	6,129	Linear Foot	15" Cured-In-Place Pipe Liner	\$ _____	\$ _____
5	1,010	Vertical Foot	Manhole Rehabilitation with Epoxy Liner	\$ _____	\$ _____
6			Reserved	\$ _____	\$ _____
7	3,100	Linear Foot	Excessive Heavy Debris Cleaning	\$ _____	\$ _____
8	2,000	Linear Foot	6" Cleaning and CCTV Inspection	\$ _____	\$ _____

ITEM	QUANT	UNIT	DESCRIPTION	UNIT PRICE	TOTAL
9	10,000	Linear Foot	8" Cleaning and CCTV Inspection	\$ _____	\$ _____
10	2,000	Linear Foot	10" Cleaning and CCTV Inspection	\$ _____	\$ _____
11	15,000	Linear Foot	12" Cleaning and CCTV Inspection	\$ _____	\$ _____
12	30,000	Linear Foot	15" Cleaning and CCTV Inspection	\$ _____	\$ _____
13	20	Each	Protruding Service Removal	\$ _____	\$ _____
14	1	Lump Sum	Mobilization Rehabilitation Components	\$20,000.00	\$20,000.00
15	1	Lump Sum	Allowance for Miscellaneous Repairs	\$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: 2022 Annual Sanitary Sewer Maintenance and Rehabilitation

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 Alexander City, Alabama

By _____

Name Curtis "Woody" Baird

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: _____
_____ **2022 Annual Sanitary Sewer** _____
_____ **Maintenance and Rehabilitation** _____

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 Alexander City, Alabama** _____

By _____
Name Curtis "Woody" Baird
Title Mayor

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF 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 Alexander City, Alabama

(Name of Owner)

P.O. Box 552, Alexander City, Alabama 35011

(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:

2022 Annual Sanitary Sewer Maintenance and Rehabilitation

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)

(Principal) Secretary By _____ (s)

(SEAL)

(Witness as to Principal) _____
(Address)

(Address) _____

Surety

ATTEST:

(Surety) Secretary

(SEAL)

Witness as to Surety By _____
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 _____, hereinafter called Principal, and
(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

The City of Alexander City, Alabama

(Name of Owner)

P.O. Box 552, Alexander City, Alabama 35011

(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:

2022 Annual Sanitary Sewer Maintenance and Rehabilitation

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)

(Principal) Secretary By _____ (s)

(SEAL)

(Witness as to Principal) _____
(Address)

(Address) _____

Surety

ATTEST: _____
(Surety) Secretary
(SEAL)

Witness as to Surety By _____
(Address) _____ Attorney in Fact

(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 Alexander City, 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 _____
 2022 Annual Sanitary Sewer Maintenance and Rehabilitation

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 ten (10) calendar days after the date of the NOTICE TO PROCEED and will complete the same within _____ 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 \$_____ 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 _____ through _____, and dated _____, 20____.
- (N) SPECIFICATIONS prepared or issued by Municipal Consultants, Inc.
dated _____, 20____.
- (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 _____ counterparts, each of which shall be
(Number)
deemed an original on the date first above written.

OWNER:

_____ **The City of Alexander City, Alabama** _____

By _____

Name _____ Curtis "Woody" Baird _____

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:

120 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.

\$ 500 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.

**SPECIAL PROVISIONS
FOR
BASIS OF AWARD**

SECTION II

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 base bid with the Owner reserving the right to consider material availability for the project (see Section 4.0). 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 QUANTITIES

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 a 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.

4.0 CONSIDERATION OF MATERIAL LEAD TIMES

Where indicated in the Bid Documents, the Contractor shall provide the specific number of calendar days required, to deliver each specified material order to the jobsite, after each order is submitted (lead time). Time is of the essence, and the Owner may consider the lead times provided by each bidder in determining the award of the project. Material lead times may be utilized to award the project to another bidder, other than the lowest bidder(s), if it is determined to be in the best interest of the Owner.

**SPECIAL PROVISIONS
FOR
SOURCE OF FUNDING**

SECTION III

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
- 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 IV

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 V

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.

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

<p>Name of Person or Organization:</p>

(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.

**SPECIAL PROVISIONS
FOR
OWNER APPROVED MATERIAL SUPPLIERS
AND EQUIPMENT MANUFACTURERS**

SECTION VI

The below Material or Equipments Manufacturer's listed are allowed choices the Contractor may use for the specific material/equipment listed. The Contractor may only use one supplier/manufacturer of each item below. When the Contractor supplies the Engineer a submittal for an item, the supplier/manufacturer for the item will be established. Note that not all items are listed on this page but only select items. Some items require identifying suppliers/manufacturers in the Bid Documents, some items are identified by standards of quality in the Specifications and/or Drawings, and some items are specifically listed in the Specification and/or Drawings. The Contractor shall review all documents thoroughly with his vendors before preparing his bid and when submitting on any items.

<i>ITEM – MATERIAL OR EQUIPMENT</i>	<i>NAME OF SUPPLIER OR MANUFACTURER</i>
Cured-In-Place Pipe Liner	Insituform, Inliner/Layne, AM-Liner, Blue-Tek, Inland Pipe (IPR), SAK, Applied Felts, Liner Product LLC
Epoxy Manhole Lining	Spectrashield

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

SECTION VII

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 receive 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 all 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 or 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 cooperate 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 placed 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 pursuing 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 Contractor 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's 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 opinion 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 SPECIFICATION
FOR
SITWORK, EXCAVATION, AND EARTHWORK**

SECTION 1

1.0 PREPARATION OF SITE

Preparation of the site shall consist of the relocating, maintaining and/or removal of all fences, railings, poles, pipelines, culverts, structures, walkways, etc., located within the areas to be graded or to be occupied by new structures, pipelines, or other components of the project. Such relocations, maintenance, and/or removal may be required when the permanent use of such facilities will be required during construction or after construction, or when the temporary use of such facilities will be required. Site preparation work shall also include the provision of such drainage ditches, banks, travelways, etc., as may be required for proper prosecution and protection of the work.

Topsoil shall be stripped to a depth of not less than 12 inches from areas to be affected by the work, excavated or filled, and stockpiled for final distribution. If stored onsite for reuse, topsoil shall be placed on the site at locations acceptable to the Owner and Engineer. The Contractor shall consult with the Engineer regarding use of the site for fill areas, material storage areas, and spoil areas. The Contractor shall conserve the maximum amount of topsoil for use in final grading; avoid rendering any part of the work site unfit for future use; and maintain maximum access to the construction work, existing facilities, or new facilities. Soils testing and compaction testing shall be paid for by the Owner.

2.0 CLEARING AND GRUBBING

Clearing and grubbing shall consist of cutting, removing, burning and disposal of all trees, brush, stumps, grass, woods, roots, etc., within areas indicated to be graded, cut, filled, or occupied by structures, pipelines, or other facilities. All roots projecting from walls of excavation shall be either cut or removed so that minimum clearances of three feet from outside line of all structures, pipelines, etc., will be secured. No vegetation or other perishable material shall be left within areas of fill.

It shall be the responsibility of the Contractor to dispose of all debris resulting from clearing and grubbing operations. No materials resulting from the clearing and grubbing operations shall be left on the site unless required otherwise. Materials temporarily used to form silt barriers for erosion control shall be removed from the site after permanent erosion prevention cover is established by the Contractor.

All holes and/or depressions caused by the removal of stumps, roots, snags, etc., shall be backfilled, finish graded, and grassed. Disposal of debris shall be accomplished in such a manner as to fully comply with all applicable laws, codes, ordinances, etc.

All burning of material on the work site, when permitted, shall be performed in accordance with the "Air Pollution Control Rules and Regulations" of the Alabama Department of Environmental Management (ADEM) and with the air pollution control rules

and regulations of the local authority or County Department of Health having jurisdiction over the construction site.

The burning of stumps, timber, logs, trimmings, brush, or other combustible materials where allowed shall be accomplished in such a manner that there will be no smoke or flyash nuisance. Burning shall not be initiated when atmospheric conditions are such as would cause a static cover in the area. Burning shall be strictly controlled. Quantities of materials being burned shall be limited so as to prevent damage to trees and/or growth adjacent to the cleared area, or to facilities or structures located in the surrounding area.

Trees, undergrowth, and ground cover outside of the construction areas or limits shall not be damaged or disturbed. Any tree scarred by equipment shall be immediately repaired and painted with approved asphaltic coating material. All damaged limbs shall be pruned by a clean cut and cut shall be painted with approved asphaltic coating material. Damaged undergrowth shall be pruned and treated. All areas disturbed or damaged by the Contractor's operations shall be restored to their original condition or as a minimum as specified.

3.0 SITE GRADING

All excess material or material which is unacceptable for use as fill or backfill shall be removed from the site and disposed of at the Contractor's expense. Final grading on the site, except over areas to be occupied by structures, walks, roadways, paved areas, etc., shall be of such material as will support vegetation. The entire area disturbed by the construction operations shall be finish graded, restored, and grassed. All fill material, not specified to be crushed stone, placed in areas to be occupied by roadways, walks, embankments, dikes, or other earth structures shall be compacted to 98 percent of maximum density unless otherwise indicated on the Drawings.

4.0 EROSION AND SILTING

The Contractor shall plan his site work and construction operations in such a manner as to effectively control soil erosion and runoff. The Contractor shall prevent pollution of streams and/or storm drains as would result from silt or soil runoff, or as would result from any material used in the construction operations such as oil, grease, paints, chemicals, fuels, solvents, or any construction debris. The Contractor shall obtain and comply with any permits and regulations required by ADEM or other agencies.

The Contractor shall intercept and block drainage from the construction site by means of silt fences, silt barriers, and sedimentation pools as required. Silt fences, wherever used on the site, shall consist of hay bales securely fastened in place or of suitable permeable barrier fabric designed to filter water and retain silt. Fabric shall be securely set in the ground and firmly held in place.

The Contractor shall be responsible for obtaining necessary NPDES Permits for stormwater discharge from the construction site(s) for all work described in these Specifications and shown on the Drawings. It shall be the Contractor's responsibility to meet all requirements and obligations of the Permit. All costs associated with making the

application for the permit and for meeting the requirements of the Permit shall be borne by the Contractor.

5.0 CLEANING UP AND RESTORATION OF SURFACE FOR GRASSING

The Contractor shall maintain the construction and disturbed areas. All disturbed areas shall be restored to their original condition. Traveled areas shall be maintained in a passable condition by crushed stone or temporary paving as required at the Contractor's expense. All construction work shall be performed within reasonable limits around the areas of the work. All ground surface areas within the project construction limits shall be finished graded and grassed. All cut banks, slopes, or other areas outside of the construction limit that have been disturbed by the Contractor's construction operations shall also be graded and grassed.

The Contractor shall dispose of excess material as specified herein, and shall remove all rubbish, trash, and surplus construction materials from the site. Areas, sections, or portions of the work site within which construction work has been completed prior to beginning of final grading and grassing, shall be protected from erosion by employment of temporary control measures such as seeding and mulching or seeding and netting. All temporary erosion control and pollution control features installed by the Contractor shall be maintained by the Contractor prior to and following final grading and grassing.

Where trenches are excavated across raw land, undeveloped areas, pastureland, grassed areas, etc., the material placed in the top foot of backfill for such trenches shall be selected so as to be suitable for support of vegetation as found or as hereinafter specified. Where trenches are cut through finished lawns of bermuda, zoysia, centipede, or other types of lawn grasses, the top soil shall be dressed and fertilized, and the top of the trench adequately prepared for placement of sod matching the type grass removed.

Before placement of topsoil, the subsoil shall be loosened to a depth of not less than four inches but not greater than eight inches, the surfaces shall be cleared of all rock one inch or larger in size, all construction debris, or other objectionable material. The topsoil, previously removed and stored, shall then be placed over the prepared subsoil. The depth of the topsoil shall be sufficient to allow for natural settlement, so that after such settlement has taken place the surface of the topsoil layer will conform to the finished elevations and contours shown on the Drawings.

Should the stockpile of topsoil accumulated from the trenching operations not be adequate for supplying the quantities of topsoil required for preparation of the areas described hereinabove, the Contractor shall furnish, at his expense, topsoil from other sources to meet any deficiencies. Topsoil preparation shall consist of loosening the soil by discing, harrowing, or other approved methods. On areas having a slope of 3:1 or flatter, the soil shall be loosened to a depth of approximately three inches; and on slopes steeper than 3:1, the soil shall be merely roughened to a depth of approximately one inch. All clods, loose stones, and other foreign materials which are larger than one inch in any dimensions shall be removed. All gullies and washes that develop in the loosened soil prior to seeding shall be repaired. Seeding shall immediately follow soil preparation so as to avoid both compaction and/or wash by heavy

rainfall and crust formation by sunbaking. Seeding will not be permitted on hard or crusted soil surfaces.

After preparation of topsoil, the Contractor shall immediately proceed with the grassing work. All materials used shall conform to the requirements in these Specifications under "Grassing".

If the construction work in any areas or portions of the work site should have been completed prior to completion of other construction work on the site, and the surface of the ground over and around such completed construction work will not be disturbed by the continued prosecution of other construction work within the project site, the Contractor may elect to perform the finish grading, ground preparation, and permanent grassing over such areas. The Contractor shall understand, however, that all permanent grassing work done prior to the undertaking of the final grading, ground preparation, and permanent grassing of the project site after all construction work has been completed shall be at this own risk. The Contractor shall be responsible for maintenance of temporary grassing or any permanent grassing installed prior to the undertaking of final grading and permanent grassing.

6.0 RIP RAP

Rip rap shall be placed in the locations shown on the Drawings. The areas, widths, and lengths shown for rip rap coverage are the minimums required. Field conditions or changes in field conditions may dictate that the coverage at a particular location be decreased or increased.

Rip rap shall be stone conforming to the requirements of AHD Specifications Section 814.01, Class 2 rip rap. Rip rap material shall consist of reasonably well-graded stones ranging in weight from approximately 10 pounds to approximately 200 pounds, with not over 10 percent weighing over 200 pounds, at least 50 percent over 80 pounds, and not more than 10 percent weighing less than 10 pounds. Rip rap bedding, where shown to be required, shall consist of gravel or crushed stone AHD Size #467. Thickness of bedding shall be as shown on the Drawings.

Rip rap shall be placed in accordance with AHD Specifications Section 610 for placement of Class 2 rip rap. Rip rap shall be placed in such a manner as to produce a reasonably well-graded mass of rock having the minimum practical percentage of voids. Rip rap shall be placed to its full course thickness in one operation in a manner that avoids displacement of the bedding material. The finished rip rap shall be free from objectionable pockets of small stones and clusters of large stones. Dumping of rip rap will be allowed provided mechanical equipment is used to dress the stones to a reasonably uniform slope.

No extra payment for rip rap deposited contrary to the locations shown on the Drawings will be made unless requested in writing by the Owner and/or Engineer. The Contractor shall maintain the rip rap protection until the project is accepted and any material displaced by any cause prior to acceptance of the project shall be replaced at the Contractor's expense.

If shown on the drawings, the Contractor shall furnish and install a geotextile fabric in the locations shown on the Drawings prior to the placement of the rip rap. The geotextile shall be of nonwoven construction. The fabric shall be mildew, insect, and rodent

resistant and shall be inert to chemicals commonly found in soil. The geotextile shall be furnished in a protective wrapping which shall protect the fabric from ultraviolet radiation and from abrasion due to shipping and handling. The fabric shall be ultraviolet stabilized.

The embankment stabilization fabric shall be placed in the manner described and in accordance with the manufacturer's recommendations. The surface to receive the geotextile shall be prepared to a smooth condition free of obstructions, depressions, and debris. The fabric shall be placed loosely, not in a stretched condition. The rip rap shall be placed so that the geotextile is not punctured. The rip rap shall completely cover the fabric.

The fabric shall be placed on the slopes so as to provide a minimum overlap of 18 inches. The geotextile shall be placed either parallel or vertical to the direction of the flow. If placed parallel, the upstream or higher panel shall overlap the downstream or lower panel. At the top of the embankment the fabric shall be keyed into the ground a minimum of 18 inches. If a cushion layer is placed, the bottom toe shall be finished by lapping the fabric back onto the cushion layer and securing with rip rap. The cost of furnishing and installing the geotextile fabric in accordance with the Plans and Specifications shall be included with the rip rap.

7.0 EXCAVATION - GENERAL

Excavated materials which are suitable for incorporation in the embankment and berms or other fills or ditches shall be placed directly therein, or stockpiled and subsequently used in the embankment, or other fills. The Contractor shall conduct grading operations in such a manner as to allow ample quantities of "Selected Soils" to be held in reserve or stockpiled, as necessary, to provide the required materials for backfilling or filling where allowed. No direct payment will be made for such necessary manipulation as doubled handling or hauling. Excess or unsuitable material which is not needed or inadequate for construction shall be disposed of as approved by the Engineer. All costs associated with the removal and disposal of materials and all costs associated with the restoration of surfaces of disposal areas shall be included in the unit prices and/or lump sum prices bid for the work under the Contract. There shall be no extra cost to the Owner for such removal, disposal and surface restoration work. There is no pay item for backfill and the Contractor shall include the cost of backfill in the cost of the structure.

All excavated materials shall be stored in a manner that will not cause damage to adjacent properties or environment nor obstruct access to any new or existing facilities. Drainage lines shall not be obstructed nor shall natural drainage of the surrounding ground be altered or obstructed.

8.0 EARTH EXCAVATION - DEFINITION AND GENERAL REQUIREMENTS

"Earth Excavation" shall include the removal, reuse and/or disposal of all materials, excluding those specified under "Clearing and Grubbing" and "Rock Excavation - Definition and General Requirements." Rocks and boulders one cubic yard or less in volume shall be classified as earth. Excavated materials which are suitable for incorporation in fills,

embankments, backfills, berms, etc., shall be placed directly therein, or stockpiled and subsequently used. Excess or unsuitable materials shall be disposed of by the Contractor.

Earth excavation for structures shall be completed such that all footings, foundations, floor slabs, etc., bear on firm undisturbed soil, rock, or engineered/compacted fill. If, at the elevations shown on the Drawings, soil over the area to be occupied by a structure is found to be unsuitable for supporting the design load, the Contractor shall remove such soil and replace it with material placed and compacted in accordance with the Plans and these Specifications.

Earth excavation in trenches for pipe shall be open cut, unless otherwise shown in the Plans. Trenches shall be excavated to the depths shown in the Plans or as required to secure the specified minimum cover over the pipe. Boulders, large stones, rock or shale meeting the definition of "Earth," shall be removed from around all pipe to provide bedding, backfill, and compaction clearances indicated in the Plans and these Specifications.

9.0 ROCK EXCAVATION - DEFINITION AND GENERAL REQUIREMENTS

Rock excavation shall consist of the loosening, removing, and disposing of all rock, solid limestone or sandstone in original bed, in well-defined ledges, or in boulder form. It shall include all solid rock which cannot be removed until loosened by blasting or use of a track excavator mounted ram hoe. Boulders having a volume of more than one cubic yard shall be classified as rock. Material that can be loosened, separated, or ripped by means of heavy duty power tools or excavating equipment shall not be classified as rock. Unless identified in the Plans for use in the work or disposal on the site, all excavated rock shall be disposed of by the Contractor.

Where rock is the supporting material for structures, the Contractor shall expose and clean all foundation areas as required for inspection and evaluation of bearing conditions. All rock seams, voids, or fissures in the exposed areas shall be filled with crushed stone of suitable gradation.

Rock excavations in trenches for pipe shall be open cut unless otherwise shown in the Plans. Trenches shall be excavated to the depths shown in the Plans or as required to secure the specified minimum cover over the pipe. Rock shall be removed from around all pipe to provide bedding and compaction clearances indicated in the Plans and these Specifications.

10.0 BACKFILL FOR STRUCTURES

Lumber, rubbish, debris, braces, etc., shall be removed from all excavations prior to backfilling. Suitable backfill shall be free of topsoil and organics, reasonably dry (within limits necessary for compaction), and free of large stones or rocks. Backfilling shall not begin without prior approval of the Engineer. Backfill containing rock larger than three inches in any dimension shall not be used within three feet of structures. Backfill containing rock too large to be placed in eight inch lifts, shall not be used for backfill or embankments except upon approval of the Engineer. If materials excavated onsite are unsuitable at the time

they are required for backfilling, or the quantity of material is insufficient, the Contractor shall provide suitable backfill materials.

Contractor shall, when necessary, provide adjustments to the natural moisture of soils before compacting. In general, backfill soils should be aerated or moisture conditioned to maintain the moisture content within two percent of the optimum moisture content. Backfill shall be placed in thin loose lifts and mechanically compacted to prevent settlement to a minimum of 95% standard proctor (ASTM D-698, latest revision) 100% compaction shall be required under structures or when shown on Drawings. For compacted material that does not pass required testing, the Contractor shall remove the fill or backfill to the last layer which passed compaction test.

The need for aeration and drying of some of the soils may be required before they can be placed and satisfactorily compacted. The Contractor will be required to have adequate equipment to manipulate and aerate soils with excessive moisture so that placement and compaction can be expedited. No direct or separate payment will be allowed for special handling of these soils.

The Contractor shall be responsible for maintenance of backfill. The Contractor shall promptly refill areas where settlement of backfill has occurred. Backfill shall be placed with the approval of the Engineer and only after all adjacent structures have gained sufficient strength to support the backfill loads.

11.0 BACKFILL FOR TRENCHES

Backfill for pipe trenches shall be as described in the Gravity Sewer Installation specification, Installation of Pressure Pipe specification, details in the Plans and as generally specified herein. Backfilling shall not begin without prior approval of the Engineer. Lumber, rubbish, debris, braces, etc. shall be removed from all trenches prior to backfilling. Suitable backfill shall be free of topsoil and organics, reasonably dry (within limits necessary for compaction), and free of large stones or rock. Backfill containing rock larger than one cubic foot shall not be used for backfill except upon approval of the Engineer. If materials excavated onsite are unsuitable at the time they are required for backfilling, or the quantity of suitable materials is insufficient, the Contractor shall provide backfill materials. Backfill shall be placed in thin loose lifts and mechanically compacted to prevent settlement to a minimum of 95 percent standard proctor (ASTM D-698, latest revision). Provide greater compaction where required elsewhere or called for by the Drawings.

The Contractor shall be responsible for maintenance of backfill. The Contractor shall promptly refill and restore areas where settlement of backfill has occurred. Backfill shall be placed with the approval of the Engineer and only after all adjacent structures have gained sufficient strength to support the backfill loads.

12.0 EMBANKMENT AND FILL WORK

Embankments and fills shall not be started without the concurrence of the Engineer. The material used in embankments and fills shall be free from frost, stumps, trees, roots, sod, muck, or debris of any kind. Only materials as specified herein shall be used. Fill

and embankment material shall not be placed on frozen ground. Wet ground to be covered by fill shall be drained. If embankment or fill is to be placed on a surface which slopes more than 4:1, the surface shall be scarified and compacted to bond with the new material.

Compacted fills shall be constructed by depositing fill materials in successive, uniform layers of not more than eight inches in depth, loose measurement. Lifts shall be placed over the entire fill area keeping the surface of each layer parallel to the elevation of finished grade by use of blade graders. In close proximity to existing structures, leveling shall be accomplished by use of small spreaders, bulldozers, or hand methods. Each layer shall be rolled and compacted by tamping, rolling, or other suitable equipment depending upon character of material to the specified density before the succeeding layer is placed. The final layer shall be brought to elevation of finished compacted fill before topsoil is placed to conform to finished contours, cross sections or details shown on the Drawings.

Contractor shall, when necessary, provide adjustments to the natural moisture of soils before compacting. In general, backfill soils should be aerated or moisture conditioned to maintain the moisture content within two percent of the optimum moisture content. Backfill shall be placed in thin loose lifts and mechanically compacted to prevent settlement as follows: (1) areas beneath future slabs, sidewalks, structures, roads, pipelines, embankments etc. - minimum of 98% standard proctor (ASTM D-698, latest revision) (2) all areas denoted as "Spoil Areas" shall be compacted to 85% Standard Proctor Density minimum unless called to be higher elsewhere. Compacted material that does not pass required testing, the Contractor shall remove the fill or backfill to the last layer which passed compaction tests.

The need for aeration and drying of some of the soils may be required before they can be placed and satisfactorily compacted. The Contractor will be required to have adequate equipment to manipulate and aerate soils with excessive moisture so that placement and compaction can be expedited. No direct or separate payment will be allowed for special handling of these soils.

Rock large enough to prevent fill work from proceeding in eight inch lifts shall not be placed in compacted fills in areas to be occupied by structures, bearing slabs, footings, roadways, walks, etc. Rock of permissible size deposited in such fills shall be dispersed and well separated in all directions by acceptable fill material.

All sampling and testing work shall be performed by an independent testing laboratory selected by the Owner. The cost of initial sampling and testing shall be borne by the Owner. Subsequent re-testing of any samples or locations failing the initial test shall be performed at the expense of the Contractor.

13.0 UNAUTHORIZED EXCAVATION AND BACKFILLING

Whenever unauthorized excavation is beyond the lines and grades established, the Contractor shall, at his own expense, refill with suitable material, tamped and settled, to ensure the stability of the structure. The area of overexcavation shall be replaced at the Contractor's expense with select material as described in the Undercut and Foundation Construction subsection. Unauthorized excavation beneath structures shall be refilled with concrete at the Contractor's expense, if this is necessary in the opinion of the Engineer to protect the structure.

14.0 SHORING

The Contractor shall provide all necessary sheeting, shoring and bracing when soil conditions, rock conditions, or the Plans require them. Damage to existing and/or proposed structures, pipelines, utilities, etc., due to water, earth pressures, or other causes shall be repaired or replaced promptly by the Contractor at his own expense.

The Contractor is reminded that all excavation for structures, trench excavation, rock excavation and sheeting, and shoring shall be prosecuted in accordance with the protective guidelines and requirements of OSHA "Safety and Health Regulations for Construction," as set forth in the Federal Register, latest revision, and that the employment of all protective measures is at the Contractor's expense. Sheeting, shoring, bracing and sloping are methods of accomplishing the work, and such methods may vary according to the Contractor's methods of dewatering, excavating, and installing the work. All such methods of accomplishing the work are the sole responsibility of the Contractor, in accordance with the OSHA guidelines.

Should the plans or specifications require the Contractor to submit a shoring plan or equivalent, it will not be reviewed by the Engineer. Submittal of such documents is solely for record purposes that the plan was prepared by others. The Contractor is solely responsible for the safety of all shoring and excavation.

15.0 UNDERCUT AND FOUNDATION CONSTRUCTION (SELECT MATERIAL)

Where the Engineer required the earth to be undercut to a depth below the bottom of the crushed stone cushion immediately beneath structures, the undercut material shall be replaced by a foundation constructed from select material. This material will consist of (1) previously excavated earth that was selected by the Engineer and stored separately by the Contractor until used for foundation construction, and/or (2) select materials imported from off site. The Engineer shall select which of these materials will be utilized. The select material shall be adjusted, if necessary, by the Contractor to achieve a moisture content within -2 to -3 percentage points of the optimum moisture content determined from compaction tests. The foundation material shall be placed in six inch or less lifts which each lift compacted to a minimum of 100 percent or as shown on Drawings of its maximum dry density as determined by ASTM D698 (Standard Proctor). The foundation will be constructed up to the elevation of the crushed stone cushion beneath the structure.

16.0 REMOVAL OF WATER

The Contractor shall, at all times during construction, provide and maintain ample means and devices with which to promptly remove and properly dispose of all water entering the excavation or other parts of the work. The Contractor shall keep excavations and work dry until the structures or facilities to be constructed are completed and the Engineers are in agreement with the Contractor to discontinue dewatering operations. No claims for an amount of money in excess of the bid prices for the work will be entertained or allowed on

account of the character of the ground in which the trench or other excavations are made, dewatering requirements or water management.

The Contractor shall complete all dewatering operations and dispose of the water from the work in a manner that will not cause damage to adjacent properties or environment, nor restrict access to any new or existing facilities. No water shall be drained into work under construction.

17.0 DISPOSAL OF EXCESS MATERIALS

The Contractor shall, unless required otherwise by the Plans, Specifications, and/or the Engineer, remove from the construction site all materials and debris resulting from the construction operations, and all material unsuitable for use as backfill or for use in restoration of the surface of the construction.

The Contractor shall make all necessary arrangements for disposal of the materials and debris described hereinabove. It shall be the Contractor's responsibility to fully satisfy the requirements of the landowners whose property he has used as disposal sites for materials and debris removed from the project site. Should such properties or disposal locations be adjacent to the project site and not of remote location, the surfaces of such adjacent lands shall be restored in accordance with the provisions of these Specifications as well as in accordance with requirements of the owner of such adjacent lands.

The provisions of these Specifications may be waived in the event that the Contractor should elect to dispose of materials and debris removed from the project site at a landfill meeting the requirements of the Alabama Department of Environmental Management and/or the local Authority having jurisdiction. In such case, it shall be the responsibility of the Contractor to dispose of the materials at the landfill in accordance with the Rules and Regulations established by the Authorities and/or Agencies mentioned hereinabove for operation of the landfill.

18.0 EXPLOSIVES

It shall be the sole responsibility of the Contractor to observe all laws, regulations, ordinances, etc., relating to explosives, including but not limited to all Federal, OSHA, State, and Local. The Contractor's attention is further directed to the General Specifications sections relating to safety, explosives, and the Contractor's responsibilities. Heavy blasting in rock which is to form a foundation shall not be permitted.

The Contractor shall ensure all persons supervising, participating, observing, or near the area of blasting operations are informed of proper procedures and properly trained. Contractor's responsible personnel shall be present and supervise all blast design, loading, and shot firing. The Contractor shall be solely responsible for following all laws, regulations, local ordinances, etc., pertaining to blasting. If more stringent than specified, these requirements shall become the minimum standards. The Contractor shall be solely responsible for all damages to properties or persons resulting from his blasting operations.

The Contractor shall be solely responsible for all safety associated with blasting. This responsibility of the Contractor shall also include but not be limited to, all work by subcontractors, suppliers, agents, and employees, etc.

19.0 PAYMENT

The costs of all necessary, Sitework, Excavation, and Earthwork shall be included in the appropriate lump sum and/or unit prices set forth in the Items of Work - Bid Schedule.

When any individual tasks of Sitework, Earth Excavation, and/or Earthwork are listed separately in the Items of Work - Bid Schedule, they shall be bid, defined and paid as outlined below and/or described in the Basis of Payment. The Basis of Payment and plans will prevail over any discrepancies herein. All other required Sitework, Excavation, and Earthwork not listed as separate bid items shall be included in the remaining lump sum and/or unit prices set forth in the Items of Work - Bid Schedule. No payments for double hauling or handling will be made.

Unless rock excavation is clearly and specifically listed as a separate pay item in the Items of Work - Bid Schedule, it shall be considered as unclassified excavation and included in the cost of other work items. No additional payment shall be made.

Earth Excavation

When earth excavation is to be paid for on the basis of unit price bid, the limits of pay excavation shall be as follows:

- Structures - Established by unit price (per cubic yard) measured having vertical sides extending one foot beyond the outside of the structure's footings with depths measured from the surface of natural grade following clearing and grubbing to the grade lines as established by elevations shown on the Drawings for underside of structures, stone cushions, foundations, footings, bearing slabs, etc. No payments will be made for earth excavations beyond these limits unless authorized by the Engineer.
- Trenches - Earth excavation in trenches shall be included in the price bid on pipe, manholes, inlets or headwalls, etc. or included in other prices if the "Bid Schedule - Items of Work" form does not contain specific unit prices for the same.
- Others - Established by unit price (per cubic yard) measured by survey cross-section methods (following clearing and grubbing if necessary). All measurements for payment of excavation will be based on the said cross-sections or original grades regardless of any subsequent changes occurring during the work.

These same limits shall apply for estimating all earth excavation quantities whether included in the original Contract Documents or negotiated as additional work. They shall also apply for estimating quantities for Undercut and Foundation Construction when it appears as a separate bid item(s) in the Items of Work - Bid Schedule.

Rock Excavation

When rock excavations are to be paid for on the basis of unit price bid, actual rock measurements shall be made and the limits of pay excavation shall be as follows:

- Structures - Established by unit price (per cubic yard) measured having vertical sides extending one foot beyond the outside of the structure's footings with depths measured from the top surfaces of the uncovered rock to the bottom of the rock or grade lines as established by elevations shown on the Drawings for underside of structures, stone cushions, foundations, footings, bearing slabs, etc., as applicable. No payments will be made for rock excavations beyond these limits.
- Trenches - Established by unit price (per cubic yard) calculated as follows; per linear foot of pipe installed, measured with a width of the pipe outside diameter plus 12 inches each side of pipe (i.e. pipe outside diameter plus 24 inches), and depths measured from the top of the uncovered rock to the bottom of the rock if above pipe or minimum required bedding depth of 6 inches or as required by the engineer or drawings as applicable. No payments will be made for rock excavations beyond these limits. Trench section not less than 50 feet shall be stripped for measurement.
- Others - Established by unit price (per cubic yard) measured by survey cross-section methods. Contractor shall be responsible for uncovering areas of rock for survey. All measurements for payment of excavation will be based on the said cross-sections regardless of any subsequent changes occurring during the work.

Unit prices bid shall include, but not limited to, drilling, blasting, removal and disposal. There shall be no extra payments for removal of rock with no overburden or "high rock". These same limits shall apply for estimating all rock excavation quantities whether included in the original Contract Documents or negotiated as additional work. When unusual conditions are discovered during excavation, typically indicated by the presence of seams, fissures or voids, additional excavations will be required in order that proper inspection of the foundation conditions may be made.

Undercut and Foundation Construction

Foundation Construction will be measured from the final surface required by the Engineer up to the crushed stone cushion below the footing of the structure. The measurement will extend to 1.0 foot outside the footing. Where a “Foundation Construction from Select Material” bid item is included in the Bid Schedule - Items of Work, the Contractor shall include all cost of the work described in this section in that item. Where no separate bid item is included, the cost of this work shall be included elsewhere in this bid.

20.0 GENERAL

The Contractor shall be solely and fully responsible for safety associated with blasting, excavation, and all other aspects of the construction. This responsibility of the Contractor shall also include but not be limited to, all work by Contractor, subcontractors, suppliers, agents, and employees, etc.

**STANDARD SPECIFICATION
FOR
SANITARY SEWER REHABILITATION, CURED-IN-PLACE LINER**

SECTION 2

1.0 GENERAL

Scope: The intent of this specification is to define the materials and methods desired for trenchless rehabilitation of existing sanitary sewer lines by the CIPP method.

These specifications are a part of the contract documents and govern for the rehabilitation of sewer mains and sewer laterals by the CIPP process. This section includes the furnishing of all labor, material, equipment stated and not stated, necessary to completely rehabilitate existing deteriorated pipe.

The CIPP process is defined as, reconstructing the pipe by the installation of an epoxy vinyl ester or polyester, thermosetting resin, vacuum impregnated flexible polyester felt fiber tube, having an impermeable inner surface or by the installation of a woven, seamless fiberglass tube impregnated with polyester or vinyl ester or orthophthalic resin. The resin impregnated felt tube shall be formed to the host pipe by means of a steam/water column, air inversion, or pulled in placed and inflated. Curing is to be accomplished by circulating hot water/steam throughout the length of the tube or steam cure for felt liner. All curing shall be in accordance with the specified curing schedule supplied by the resin manufacturer. The fiberglass tube shall be inserted into the host pipe by means of winch. The CIPP shall extend the full length of the host pipe with minimum reach of manhole to manhole. When fully cured the CIPP shall provide a structurally sound, impermeable, joint less, close-fit, pipe that is mechanically bonded to the host pipe.

CIPP Contractor Qualifications: All CIPP construction shall conform to these specifications and by methods practiced by CIPP contractors/manufacturers and accepted by the Engineer. The contractor shall provide to the Engineer references and evidence for successfully installing a minimum of 500,000 lf. of CIPP in the United States of America. The referenced CIPP shall have been installed for a minimum of 5 years.

1.1 RELATED SPECIFICATIONS

2.0 REFERENCES

ASTM F-1216 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube.

ASTM F-1743 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled-In-Place Installation of Cured-In-Place Thermosetting Resin Pipe (CIPP).

ASTM D-790 - Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

ASTM D-53 - Standard Practice for Rehabilitation of Existing Pipelines

ASTM D-2122 - Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings.

ASTM F-2019 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled-In-Place Installation of Glass Reinforced Plastic Cured-In-Place (GRP-CIPP) Using the UV-Light Curing Method.

ASTM F-2599 - Standard Practice for Sectional Repair of Damaged Pipe By Means of an Inverted Cured-In-Place Liner.

3.0 SUBMITTALS

The Contractor shall submit manufacturer's Certificate of Compliance certifying compliance with the applicable specifications and standards, and certified copies of test reports of factory tests required by the applicable standards and this Section. The Contractor shall submit Manufacturer's installation instructions and procedures and insertion runs, including procedures and materials for service reinstatement including time and duration of sewer service unavailability. The Contractor shall submit liner sizing and wall thickness calculation data. All CIPP calculations shall be signed and sealed by an Engineer registered in the State of Alabama.

Submit Performance Work Statement (PWS) summarizing the work to be completed. PWS shall include verification of conformance to these Specifications and a detailed description of the work plan including product delivery, installation schedule, cleaning operations, CCTV inspection, bypass pumping, traffic control, provisions for pipes with sags too large for lining, curing method, repair methods, service reconnections, third party testing laboratory, as-built procedures, warranty, Quality Control Plan (QCP), etc. The QCP shall define the Contractor's, Owner's, Engineer's, and testing labs' role in quality control.

The submittal shall state the "wet out" location and the allowable holding time safely recommended by the liner manufacturer between wet out and completed installation. The submittal shall state any applicable storage or handling requirements after wet out, etc.

The Contractor shall submit a resume of the personnel's experience for the Owner's review prior to installation of liner. This shall include liner installers and remote camera/cutter operators. The installers and operators shall be well-experienced (2-years plus) in successfully completing projects with a complexity equal to or greater than the complexity of this project. The experience of the installers and operators shall be acceptable to the Owner. If the experience is marginal or inadequate, the Contractor shall provide other personnel with experience that is acceptable.

Prior to performing the work, the Contractor shall take a sufficient number of high-quality digital photographs to clearly document the preconstruction conditions of lawns, grassing, shrubbery, plants, trees, fences, structures, concrete walks and patios, etc. in the vicinity of the work and access to the work. The photographs shall include all areas of the work. The photographs shall be taken in a manner such that the specific area where work will be performed is evident from the photograph itself. The Contractor shall give the Owner and Engineer sufficient advance notice prior to taking the photographs so that they can accompany the Contractor if they desire. The Contractor shall not perform the work until the photographs are deemed sufficient to document the conditions existing prior to performing the work.

In areas where laterals will be externally reconnected, a minimum of 4 photographs (each taken from a differing perspective) shall be taken of each lateral area. Where laterals are near to structures or concrete, etc., additional photographs shall be taken for thorough documentation. After install, submit Cure Report, including the following documentation:

1. Curing log, including temperatures, pressures, and times during the curing process to document that a proper cure has been achieved. Curing log shall be submitted immediately after the curing is complete for each line segment that is rehabilitated.

4.0 DELIVERY, STORAGE AND HANDLING

The Contractor shall be responsible for delivery, storage, and handling of products. Products shall be kept safe from damage. Damaged products shall be removed from the job site promptly. Damaged products shall be replaced with undamaged products.

5.0 MEASUREMENT AND PAYMENT

Measurement shall be by linear foot of installed CIPP actually installed. Payment shall be at the Contract unit price bid. Unit price shall include full compensation for furnishing of pipe liner, cleaning debris, root removal, installation, remote cutting of pipe liner for existing laterals, post-TV inspection, video capture, production of post-TV media, and for all labor tools equipment, and incidentals, etc., necessary to fully and successfully complete the liner installation.

In the event of a liner collapse, liner unsuitability or material defects that cannot be repaired, to the satisfaction of and comfort to the Owner, the line shall be replaced with ductile iron pipe, in accordance with the Standard Specification for Pipe Materials, at no additional cost to the Owner. The Owner will pay only the cost for the original liner based on the unit price bid. Incidental items such as pavement, aggregate backfill, or sod, etc., needed to fully complete the replacement of the sewer line shall be the responsibility of the Contractor.

6.0 PRODUCTS

CIPP lining shall be Insituform by Insituform Technologies, Inliner by Layne/Inliner Technologies, AM-Liner by Premier-Pipe USA, Blue-Tek by Reline America, CIPP liner by Inland Pipe Rehabilitation (IPR), CIPP liner by SAK Construction, or Engineer-approved equal.

The finished pipe liner in place shall be chemically resistant to and shall withstand internal exposure to domestic wastewater having a pH range of 5 to 11 and a temperature of 150°F.

All cured-in-place lining products shall comply with ASTM F-1216, ASTM F-2019, or ASTM F-1743 including appendices. The installer shall warrant and hold harmless

the Owner and the Engineer against all costs (including but by no means limited to legal costs and internal costs) for claims for patent infringement, etc. and any loss thereof.

The flexible tube shall be fabricated to a size that when installed shall fit the internal circumference of the existing sewer (99.75% minimum). Allowance shall be made for circumferential stretching during insertion so that the final cured product is snug against the wall of the host pipe. The flexible tube shall consist of one or more layers of flexible needled felt or an equivalent nonwoven material, capable of carrying resin and withstanding installation pressures and curing temperature. The material shall be able to stretch to fit irregular pipe sections and negotiate bends. The outside layer of the uninverted tube shall be coated with a material that is compatible with the resin system used. The coating shall be an integral part of the tube.

The minimum length shall be that deemed necessary by the Contractor to span the distance from the inlet to the outlet of the respective manholes along the segment to be lined. The Contractor shall verify the length and diameter in the field prior to impregnation. The Contractor shall determine the required length as well as the location of all laterals. Manholes that are required to be installed shall be installed prior to CIPP operations.

The Contractor shall furnish a manufactured polyester, vinyl ester, or epoxy and catalyst system that when cured meets ASTM F-1216 or ASTM F-2019 and ASTM F-1743 resin for felt tubes. The resin manufacturer shall provide to the contractor their recommended curing cycle and submit material data to the Engineer for approval. Cured CIPP shall have the following minimum values when tested in accordance with ASTM D- 790. Testing is to be performed by an independent laboratory approved by the Engineer.

Cured pipe shall conform to the following minimum structural properties:

<u>PROPERTY</u>	<u>RESULTS</u>
Flexural Strength	4,500 psi
Modulus of Elasticity	250,000 psi
Chemical Resistance	PH range 5-11

Certified copies of all independent laboratory tests accompanied by the test field coupons shall be submitted to the Engineer. Certified copies of all test reports on the selected resin shall be submitted to the Engineer. A minimum of two (2) structural and one (1) chemical resistance test shall be run per each installation run. All testing costs related to CIPP shall be borne by the Contractor. CIPP tube material shall be supplied by the licensor of the selected system to the contractor in accordance with Section 5.1 of ASTM F 1216 current revisions.

For inversion products, the sewed tube shall consist of one or more layers of absorbent non-woven felt fabric in accordance with the requirements of ASTM F1216.

For pulled in place products, the tube shall consist of one or more layers of fiberglass laminate in accordance with the requirements of ASTM F2019 and ASTM F1743.

Tubes shall be constructed to withstand installation pressures, have sufficient strength to bridge breaks and missing sections of the existing pipe, and stretch to fit irregular

pipe sections. The new jointless pipe-within-a-pipe shall fit tightly against the existing pipe wall and shall consolidate all disconnected sections into a single continuous pipeline, eliminating infiltration or exfiltration.

Wet-out tubes shall have a uniform thickness that, when compressed at installation pressures, shall meet or exceed the design thickness.

Tubes shall be sewn to a size that, when installed, shall tightly fit the internal circumference and length of the original pipe with minimal shrinkage, in such a way as to minimize water migration (tracking) between the liner and the host pipe. Allowance shall be made for circumferential stretching during inversion and longitudinal stretching during pull-in. Overlapped layers of felt in longitudinal seams that cause lumps in the final product shall not be acceptable.

Minimum tube length shall be that deemed necessary by the Contractor to effectively span the distance between the access points and to facilitate a good seal without water migration. The Contractor shall verify the lengths in the field before cutting liner to length and otherwise preparing it for installation.

The outside layer of the tube (before wet-out) shall be coated with an impermeable, flexible membrane that shall contain the resin and facilitate monitoring of resin saturation during the resin impregnation (wet-out) procedure.

Tubes shall be homogeneous across the entire wall thickness containing no intermediate or encapsulated elastomeric layers. No material shall be included in the tube that may cause delamination in the cured CIPP. No dry or unsaturated layers shall be evident.

The wall color of the interior pipe surface of CIPP after installation shall be a light reflective color so that a clear detailed examination with closed circuit television inspection equipment may be made.

Seams shall be stronger than the seamless felt and shall meet the requirements of ASTM D5813.

Tube exterior shall be marked for distance at regular intervals, not exceeding five (5) feet, along its entire length. Such markings shall include the manufacturer's name or identifying symbol. The tubes shall be manufactured in the USA.

Resin system shall be a corrosion-resistant polyester, vinyl ester, or epoxy and catalyst system that, when properly cured within the tube composite, meets the requirements of ASTM F1216 or ASTM F2019 and ASTM F1743, the physical properties specified herein, and any additional physical properties that are utilized in the design of the CIPP for this Project. The resin shall produce CIPP which shall comply with the structural and chemical resistance requirements specified herein.

Finished CIPP shall be fabricated from materials which, when cured, shall be chemically-resistant to withstand internal exposure to domestic sewage. All constituent materials shall be suitable for service in the environment intended. The final product shall not deteriorate, corrode, or lose structural strength resulting in reduction of the projected product life.

CIPP shall be designed in accordance with the requirements of ASTM F1216 or ASTM F2019 or ASTM F1743, Appendix X1. The CIPP design shall assume no bonding to the original pipe wall. The structural performance of the finished pipe shall be adequate to accommodate all anticipated loads throughout its design life.

CIPP shall have a minimum design life of fifty (50) years. The minimum design life shall be documented by submitting life estimates by national and/or international authorities or specifying agencies.

Contractor shall have performed long-term testing for flexural creep of the CIPP material installed by his company. These testing results shall be used to determine the long-term, time-dependent flexural modulus to be utilized in the product design. This testing shall include demonstration of performance of the materials (tube and resin) and general workmanship of the installation and curing. A percentage of the instantaneous flexural modulus value (as measured by ASTM D790 testing) shall be used in design calculations for external buckling. The percentage, or the long-term creep retention value, utilized shall be verified by this testing. Values in excess of 50 percent shall not be applied unless substantiated by qualified third party test data. The materials utilized for this Project shall be of a quality equal to or better than the materials used in the long-term test with respect to the initial flexural modulus used in design.

Minimum required structural CIPP wall thickness shall be based on the physical and structural properties described herein and shall be in accordance with the design equations in the Appendices of ASTM F1216 or F2019 and the following design parameters:

Design Safety Factor	2.0
Retention Factor for Long-Term Flexural Modulus for Design	50 percent
Ovality*	2 percent
Groundwater Depth = Grade Elevation	
Soil Depth (above crown)	Refer to Drawings (when available)
Soil Modulus	1,000 psi
Soil Load	120 pcf
Live Load	One AASHTO H-20 Truck
Design Condition	Fully-Deteriorated
Pipe Condition	Fully-Deteriorated
Enhancement	7

* Value listed is based on the best available information. Ovality shall be calculated by Contractor from ASTM F1216, Appendix X1.1 based on information from sewer inspection.

Layers of the cured CIPP shall be uniformly-bonded. It shall not be possible to separate any two layers with a probe or point of a knife blade so that the layers cleanly separate or the probe or knife blade freely moves between the layers. If separation of the layers occurs during testing of field samples, new samples shall be cut from the work. Any reoccurrence of separation shall be cause for rejection of the work.

Any layers of the tube that are not saturated with resin prior to insertion into the existing pipe shall not be included in the structural CIPP wall thickness computation.

A cementitious patching material shall be used in the manholes to reconstruct a proper flow channel around the end of the cured liner. Patching material shall be Hyperform by Quadex or Engineer-approved equal.

Contractor shall verify the liner thicknesses and report to the Engineer any variations necessary to facilitate the selected process and required structural integrity. No additional compensation will be allowed for these variations. Proposed adjustments to the liner wall thickness or procedures such as installation methods shall be submitted by the contractor to the Engineer for approval, including all calculations, and design criteria that is required to ensure the hydraulic capacity and structural capability of the proposed CIPP liner. Annular Sealant shall be hydrophilic rubber joint seal: Green Streak, Hydropipe or approved equal.

7.0 EXECUTION

All activities shall be performed in accordance with the manufacturer's recommendations and regulations established by OSHA. Particular attention shall be drawn to those safety requirements involving working with scaffolding, confined spaces, trenching and chemical hazards.

The Contractor shall provide traffic control. As a minimum, traffic control shall be in accordance with the requirements of Legal Relations and Responsibilities to Public section of the contract.

The Contractor shall notify by letter all property owners along project route a minimum of ten (10) days prior to commencing work. The letter must be submitted to the Owner (through the Engineer) for approval and shall include, as a minimum, the following information:

1. Contractor's Company Letterhead.
2. Contractor's Authorized Contact Person and 24-hour Phone Number.
3. A detailed description of the work being performed, including the various phases (lining and reconnection) and periods when water usage should be avoided or minimized.
4. An approximate start date.
5. An approximate completion time.
6. A statement that this project is an environmental improvement project and will improve the reliability of the sewer system for the benefit of the area's residents.
7. A statement that inasmuch as the sewers are located in the backyards, the work will of necessity require the Contractor to be in the backyards.
8. A request that residents, and especially children, stay away from the construction equipment and activities in the interest of their safety.
9. An apology for any inconvenience caused by the project.

The Owner and Engineer shall be copied with this, and other notices sent to the residents.

It is the Contractor's further responsibility to also notify in writing any property owner having a sewer service connection on the sewer section(s) being relined that such work is being performed. This notification shall be done 24-hours prior to performing relining work. The notice shall identify the Contractor's Authorized Contact Person and 24-hour phone number. The Contractor shall be solely responsible for any damage to private service lines or backups caused by relining operations. The Contractor shall provide and pay for hotel accommodations for any residents who have wastewater backup into their home as a result of the Contractor's work or if use of their sewer service lines is limited or prohibited due to the Contractor's operations. Hotel accommodations shall be provided for as long as required to return the resident's home to its original conditions.

The Contractor shall provide appropriate notice(s) to the local police and fire departments prior to performing the work so that they will be informed regarding the activities, the necessity to be in backyards, potential street blockages, etc. Complete street blockages shall not be allowed unless absolutely unavoidable, and then only with the approval of the fire department.

The Contractor shall defend, indemnify, and hold harmless the Owner and employees, the Engineer and the Owner's consultants from and against any and all claims, suits, actions, damaged loss, liability, or costs of any nature or description (including, without limitation, attorney's fees) arising from, or in anyway attributable to or connected with the Work performed by the Contractor.

8.0 PREPARATION

Contractor shall provide to the Engineer the location of the wet out facility and shall submit to a site visit of the facility, (if required), prior to commencing lining operations. Wet out facility shall employ the proper roller and/or vacuum devices to properly distribute (impregnate) the felt tube with resin. Jobsite impregnation of the felt tube will not be allowed. The catalyst, resin, felt or fiberglass tube and any additives shall be compatible and shall not impair the ability of the resin to withstand the minimum chemical resistance.

The use of a refrigerated truck shall be employed to transport/hold the impregnated felt fiber tube until insertion into the manhole. All areas disturbed by the truck as well as other equipment employed in the process shall be repaired/replaced. The repair/replacement of disturbed areas, sidewalks, driveways, patios, etc. shall be included in the CIPP price with no additional compensation allowed.

The Contractor shall clean and inspect via CCTV the existing sewer prior to installing the liner to demonstrate the pipe is free of any obstructions or conditions that would adversely affect the install of the liner or the long-term performance of the liner, the Owner or Engineer shall approve pipe conditions before placing CIPP. The Contractor shall inform the Engineer of the inspection results. All roots and debris shall be removed by appropriate methods as required. The sewer shall be thoroughly cleaned and televised after root and debris removed. Cleaning equipment shall include, at a minimum a high-velocity sewer cleaning equipment with two or more high-velocity nozzles capable of producing scouring action from

15 to 45 degrees in all directions in all line sizes designated for cleaning. Equipment to include water tank, auxiliary engines, pumps and hydraulically driven hose reel. Other equipment shall include rodding machines, bucket machines, winches using root cutters and porcupines or other Engineer approved equipment to facilitate removal of roots.

Contractor shall flush and clean pipeline interiors to remove sludge, dirt, sand, stone, grease, roots, and other materials from pipe to minimum 95% of original carrying capacity as necessary to perform CIPP. Contractor shall use care in cleaning to avoid damage to existing sewers. Damaged to sewers from cleaning operations shall be repaired at no additional cost to Owner. The Contractor shall prevent discharge of cleaning water from entering adjacent structures through plumbing connections. Advance cleaning equipment from upstream manhole to downstream manhole such that cleaned debris is washed downstream and does not remain within the pipe. Contractor shall intercept flushed debris at next downstream manhole by use of weir or screening device, remove, and dispose of debris in proper location and manner.

All service connections shall be noted, recorded, and brought to the attention of the Engineer. All protruding laterals shall be noted, recorded, and trimmed prior to installing the liner.

Conditions that may prevent proper installation shall be noted and corrected by the Contractor. Such conditions shall be brought to the attention of the Engineer.

The Contractor shall provide for the diversion of wastewater entering or passing through the pipe by bypass pumping, if required. All plugs used for flow control shall be equipped with air release fittings that are easily accessible at ground level. This will allow for immediate release of diverted lines without the need of confined space equipment and should further limit risk of backups.

The Contractor shall notify the local fire department and water authority and obtain approval and water meter, if required, before using fire hydrants.

The Contractor shall designate a location where the reconstruction tube will be vacuum impregnated prior to installation. The Contractor shall allow the Engineer to inspect the materials and a wet-out procedure. A catalyst system compatible with the resin and reconstruction tube shall be used. Sufficient excess resin will be provided, and other measures taken as necessary to ensure a mechanical bond with the host pipe after curing, if needed. In some cases, the Contractor may be required to perforate the liners external shield for resin migration if needed.

9.0 INSTALLATION PROCEDURE FOR FELT TUBES

The following is a minimum procedure list. Additional procedures may be required to accommodate actual conditions. General procedures are as follows:

- (1) Install Manholes on E.O.L.
- (2) Hydraulically clean the existing host pipe.
- (3) Video inspect existing pipe and locate the existing service laterals.
- (4) Remove line obstructions, if any.
- (5) Perform CIPP lining process
- (6) Reinstate any existing ACTIVE service laterals.

- (7) Perform smoke test, (if required in specification).
- (8) CCTV inspect rehabbed pipe and record.

The Contractor shall install the pipe liner in accordance with the manufacturer's recommendations and specifications, and as approved by the Engineer.

Prior to lining the main sewer and the pre-rehabilitation television inspection, end of line manholes shall be set and protruding service lateral connections shall be internally cut/ground down flush with interior wall of host pipe. No protrusion of the lateral shall be allowed.

The liner should be supported in intermediate manholes as required during the curing process to eliminate sags or bulges.

Any obstructions that can be removed without excavation shall be done by the contractor utilizing robotical cutter devices. Any obstruction that requires excavation, such as, collapsed pipe, dropped joints that cannot be removed by conventional mechanical or hydraulic internal methods, a Point Repair shall be performed to correct the anomaly in conformity with these specifications. Removal of protruding service connections shall be done robotically and shall be paid at the unit price bid. No additional compensation will be allowed for removal of protruding services, either by excavation or other methods.

The contractor shall submit in detail to the Engineer, details outlining the procedure and techniques for approval prior to commencing work.

The wet out reconstruction felt tube shall be inserted through an existing manhole or other approved access by means of an inversion process and the application of a hydrostatic head sufficient to fully extend it to the next designated manhole or termination point. The reconstruction tube shall be inserted into the vertical inversion standpipe with the impermeable plastic membrane side out. At the lower end of the inversion standpipe, the reconstruction tube shall be turned inside out and attached to the standpipe so that a leak-proof seal is created. The inversion head will be adjusted to be of sufficient height to cause the impregnated tube to invert from manhole to manhole and hold the tube tight to the pipe wall, produce dimples at side connections, and flared ends at the manholes. The use of a lubricant is recommended. Care shall be taken during the elevated curing temperature so as not to overstress the felt fiber. Felt tubes designed to be "pulled in place" shall be accomplished as per manufacturer's recommendations. Inversion of CIPP and curing process, when PVC host pipe is encountered, shall be by hydrostatic water column unless otherwise approved by the Engineer.

After inversion is completed, the Contractor shall supply a suitable heat source and water or steam recirculation equipment. The equipment shall be capable of delivering hot water or steam throughout the section by means of a prestrung hose to uniformly raise the water or steam temperature above the temperature required to effect a cure of the resin. This temperature shall be determined by the resin/catalyst system employed.

The heat source shall be fitted with suitable monitors to gauge the temperature of the incoming and outgoing water supply. Another such gauge shall be placed between the impregnated reconstruction tube and the pipe invert at the remote manhole to determine the temperatures during cure. Water temperature in the line during the cure period shall be recommended by the resin manufacturer.

Initial cure shall be deemed to be completed when inspection of the exposed portions of cured pipe appear to be hard and competent and the remote temperature sensor indicates that the temperature is a magnitude to realize an exotherm. The cure period shall be of a duration recommended by the resin manufacturer, as modified for the cured-in-place inversion process, during which time the recirculation of water or steam and cycling of the heat exchange to maintain the temperature continues. The hot water/steam shall be uniformly distributed so as to provide an even cure of the tube. The curing temperatures and durations of the cure shall conform to the data submitted.

The Contractor shall cool the hardened pipe to a temperature below 100°F before relieving the static head in the inversion standpipe. Cool-down may be accomplished by the introduction of cold water into the inversion standpipe to replace water being drained from a small hole made in the downstream end. At no time shall a vacuum be allowed to occur in the newly installed CIPP as this could damage or reduce the effectiveness of the new liner. The discharge water temperature shall not exceed the level allowed by state or local standards. Any cost incurred as a result of the contractor using municipal or private water supplies shall be borne by the contractor. No additional compensation will be allowed for water consumption. The contractor shall be solely responsible for acquiring all water necessary for the CIPP process.

The finished pipe shall be continuous over the entire length of an inversion run and be as free as commercially practical from visual defects, such as foreign inclusions, dry spots, pinholes, and delamination. Slippage or “Snapback” of the CIPP shall not be allowed. It shall also meet the leakage requirements or pressure test specified below.

If the liner fails to make a tight seal due to a broken or misaligned pipe, at the manhole wall, or any other reason the Contractor shall apply a seal at the point. The flow through the manhole shall not be obstructed in any manner. The connection between the CIPP and the host pipe shall be sealed to eliminate all ground water infiltration into the sanitary sewer system.

Installed CIPP shall be circumferentially sealed with non-shrink grout at E.O.L. manholes.

All manholes shall have invert grouted to match new liner.

The Contractor shall be fully responsible for the installation materials, methods, and procedures so that a successful lining will be accomplished.

10.0 SEALING PIPE IN MANHOLE

The Contractor shall apply a sealant as specified in 6.0 Products or as recommended by the liner manufacturer and approved by the Engineer at all points where the liner terminates in manholes. The sealant shall be applied by pressure injection or other means to ensure a watertight seal. The sealant shall be of a resin mixture compatible with that used in the inversion process. The repair shall be rechecked after 48 hours to ensure that the seal is holding. If the seal does not hold, the Contractor shall continue to work until a seal is made and there are no leaks. The Contractor shall seal the pipe in the manhole at no additional cost to the Owner.

11.0 REINSTATEMENT OF SERVICE LATERALS - INTERNAL RECONNECTION

The contractor is solely responsible for service reinstatement. The methods to determine locations of active services shall be CCTV inspection and dye checks or other methods approved by the Engineer. Contractor shall locate all existing taps and plot on as built drawings and shall deliver to the Engineer to make a permanent as constructed drawing to be delivered to the Owner. Taps are to be plotted on drawings by the CCTV operator, as well as video record, as line is being pre-tv'd. If a tap is proven to be abandoned and future use of the tap is not foreseen and is shown to be a source of I&I, the contractor, at the direction of the Engineer/owner, may be directed to line over with no reinstatement of the service. After CIPP has adequately cured, all service laterals, (except those directed by Engineer/owner) shall be cut out by means of a 360 degree CCTV color camera and robotic cutting device. Laterals shall be restored to 100% flow capacity. Any attempted cut which damages the liner in any manner shall be repaired/replaced at the direction of the Engineer. After cutting all laterals, openings to the laterals shall be brushed smooth, no rough or ragged edges are allowed. When it becomes necessary to excavate to reconnect a service lateral for any reason, the contractor is solely responsible for the excavation and reconnection. No separate payment is allowed for excavating and reconnecting service laterals. If a service lateral is later found to be active and has not been reinstated, the contractor shall at no additional costs to the Owner or Engineer, reinstate said lateral regardless of time lapse or regardless of expiration of warranty period. No separate payment will be allowed for any method utilized to reinstate service laterals whether internal or external methods requiring excavation including any pavement replacement grass or other resulting from the external digging procedures. All service connections shall be included in the price of the CIPP per linear foot price.

Only personnel experienced in the operation of cutting devices used for reinstatement of service laterals shall be allowed to operate such equipment. The Contractor shall submit a resume of the person's experience for the Owner's acceptance prior to the operation of the equipment.

12.0 INSPECTION

After the completion of the lining process and reinstatement of appropriate service connections, the installation shall be television inspected. All service entrances shall be accounted for. No infiltration shall be apparent. The CIPP shall be smooth and continuous. The finished pipe shall be continuous over the entire length of the installation and be free of wrinkles, bubbles, dry spots, lifts, and delaminations, etc. Slippage or "Snapback" of the CIPP shall not be allowed. If any of these conditions exists, remove and replace the CIPP. If the pipe is not acceptable to the Owner, remedies shall be accomplished at the Contractor's expense and to the Owner's and Engineer's satisfaction.

The Contractor shall perform a post television inspection after the installation of the liner and submit to the Engineer for review. Television inspection shall be performed in accordance with requirements of the Specifications. Special attention shall be given to service lateral connections. If the television inspection reveals deficiencies not acceptable to the

Owner, remedies shall be accomplished at the Contractor's expense and to the Owners and Engineers satisfaction.

Post CCTV of Completed CIPP Sections: Contractor shall provide to the Owner a color video, (in format designated by the Owner/Engineer), taken by a 360 degree radial view lateral launch camera showing close up views of the completed work including restored service laterals. Chosen laterals shall be launched to the R.O.W. (or as directed by the engineer), and video record made. Two television reports and two copies of the video format selected, are to be delivered to the Engineer by the contractor. Pre-Video and Post-Video of each individual line segment shall be dubbed onto the same video record so as to show the pre-video of the line segment to be lined followed directly by the post-video of the same line segment. No additional cost will be allowed for this pre-tv / post tv procedure or video recording.

13.0 TESTING

After the installation procedures have been performed and prior to reinstatement of service connections, the Contractor shall perform a hydrostatic test on the sewer line to determine if it is watertight. The test shall be performed using the existing hydrostatic head provided by the inversion standpipe. The test time shall be 5 minutes during which time no makeup water shall be added to the standpipe. If at the end of the test period no water loss is observed in the standpipe, the water tightness of the cured-in-place pipe shall be considered satisfactory.

For installation, two liner samples shall be required: A section of cured pipe cut from the installation at an intermediate or terminal manhole, and which has been inserted through a like diameter pipe held in place by a suitable heat sink (such as sandbags); and a sample fabricated from material taken from the tube and the resin/catalyst system used and cured in a clamped mold placed in the downtube. Each sample shall be large enough to provide a minimum of three specimens.

Contractor shall provide a wet out and core report for all CIPP. Reports are required for each installation. Reports shall be submitted on a weekly basis. All reports must be received by the Owner/Engineer at each application for payment before payment can be made. Information to be included on each report shall be established by the Owner at the beginning of construction. At a minimum, the report shall include:

1. Contractor name
2. Owner's Contract number
3. Line identification and location
4. Date of wet-out
5. Identification of sample(s) and name of technician(s)
6. Date of installation in sewer
7. Inside diameter of host sewer pipe
8. Liner thickness
9. Liner length
10. Liner and resin batch numbers
11. Resin type
12. Wet-out length
13. Roller spacing
14. Vacuum setting
15. Quantity of resin and catalyst utilized
16. Name of wet-out technician(s)
17. Time wet-out started and completed
18. Applicable remarks
19. Heat Cure: Boiler and liner heating fluid (water or steam) pressure and temperature versus time log during cure period
20. UV Cure: Pressure and temperature versus time log and light train speed during cure period
21. Cool down report

The initial tangent flexural modulus of elasticity and flexural stress shall be measured in accordance with ASTM D-790 mod. and shall meet the requirements of this section.

Pipe failing to meet these requirements is subject to rejection and replacement at the Contractor's expense.

Upon acceptance of the installation work and testing, the Contractor shall reinstate service laterals in the project area affected by his operations.

After the work is complete, the Contractor shall provide the Engineer with a videotape showing both the before and after conditions, including the reinstated sewer connections.

14.0 CLEANUP

After the installation work has been completed and all testing acceptable, the Contractor shall clean up the entire Project area. All excess material and debris not incorporated into the permanent installation shall be disposed of by the Contractor. The work area shall be left in a condition equal to or better than prior condition. Disturbed grassed areas and paved areas shall be repaired as required by the Engineer.

15.0 MATERIAL TESTING OR CURED-IN PLACE PIPE PRODUCTS

In addition to testing performed by the Contractor, twenty percent (20 %) of all cured-in-place pipe products installed shall be randomly tested to determine if lining materials meet minimum requirements specified in this section. Testing shall be performed by an independent testing laboratory, under contract to the Owner, in accordance with applicable ASTM Standards.

The Contractor shall be required to provide samples as determined by the Owner or the Engineer. If destructive testing is required, the Contractor will repair the test section in accordance with the manufacturer's recommendations and at no cost to the Owner.

The Contractor shall insure that a safe environment has been provided for entry into access areas for sample acquisition. However, the Contractor shall not be responsible for ensuring the safe entry, exit, and rescue requirements as met. That responsibility shall rest with the testing laboratory.

In cases of dispute, the Contractor may request re-testing by an independent testing lab, but at the Contractor's expense.

16.0 WARRANTY

Beginning from the final acceptance date a warranty shall be issued to the owner. The warranty shall cover defects in material and workmanship. The warranty shall be in force for a period of 5 years from the date of acceptance of contract completion. Should a defect occur during this 5 year period that is attributable to liner installation or materials, this defect will be repaired within 2 weeks unless it is deemed to be an emergency situation in which case shall be repaired/replaced immediately upon notification to the contractor. The

repair/replacement shall be at no cost to the owner. Documentation shall be provided by the contractor that specifies the materials to be used have been successfully installed and in place in the United States of America for a period of not less than 2 years and a minimum of installs to be 50,000 lf. This documentation of these two requirements shall be included with the bid proposal.

NOTE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIR COSTS THAT ARE ASSOCIATED WITH A DEFECT OR LINER FAILURE DURING THE 5 YEAR WARRANTY PERIOD INCLUDING BUT NOT LIMITED TO ANY COST ASSOCIATED WITH SEWER LATERAL BACKUPS AND SEWAGE SPILLS INTO BUILDINGS AND ANY AND ALL OTHER PROPERTY DAMAGES ASSOCIATED WITH ANY PROCEDURES CONDUCTED BY THE CONTRACTOR.

**STANDARD SPECIFICATION
FOR
PAVEMENT, GRAVEL, AND CONCRETE SURFACES**

SECTION 3

**1.0 REMOVING AND REPLACING EXISTING PAVEMENT AND
CONCRETE**

No hard surface (pavement, concrete, etc.) shall be cut unless authorized. These surfaces shall be cut to a neat continuous line and replaced with same type material and thickness. Base course to be of same type material removed. Removal and replacing surfaced areas shall meet the requirements of the governing body. Should requirements not be in effect, the Contractor will replace these areas as indicated on the Plans or as required by the Engineer or the Owner. These surfaces shall not be replaced until authorized. All damaged hard surfaces shall be restored to its original condition and shall be replaced as soon as possible. If any inconvenience or potential inconvenience to the public is noted, the hard surfaces will be replaced immediately. Any repair after completion of the project or settlement under the replaced sections of hard surfaces will be at the expense of the Contractor. Unless otherwise noted, pavement replaced shall be included in the Unit Price Bid of Items except for repairs.

2.0 PAVEMENT

Construction and types of finished paving for roads, parking areas, and service areas shall be as shown on the Drawings or as specified below. All subgrade and base courses shall be in accordance with AHD Specification Section 301. The subgrade shall be prepared using materials in place. All depressions shall be filled with approved material compacted to same density as the remainder of the subgrade. Soft places in the subgrade shall be excavated and refilled with approved material or crushed stone so as to achieve the density specified for compacted fill. The base shall have a compacted thickness of base course under pavement of not less than 6 inches, and materials for base course shall be in accordance with AHD Specifications Sections, 823.02(d) and 826.02(d), or compacted pug mix. Subgrade and base shall be compacted to a minimum of 98% SPD. Surface of crushed stone finish shall be 2" of No. 4 gradation, compacted. Asphalt paving shall be pre-mixed bituminous pavement meeting the requirements of AHD Specifications Section 411. Base course shall be primed and pavement constructed in accordance with the provisions of AHD Specifications Section 410 except asphalt will be compacted. The pavement shall consist of binder course and wearing course. Binder course shall be Mix B (AHD Section 411.02) placed at the rate of 150 pounds per square yard, and wearing course shall be Mix A (AHD Section 411.02) placed at the rate of 110 pounds per square yard. Apply binder and wearing course at higher rates if called out on Plans. Pavement shall be installed smooth and level. Sufficient time shall lapse before the wearing course is installed on the binder course. The wearing course will be the last work on the job after all "punch" list items are completed. All dirt, mud, and other undesirable

material shall be completely cleaned from the binder prior to placing the wearing course. Unless specifically requested by the Owner, the wearing course shall not be installed until after all site work is complete and after all activities that potentially damaged the asphalt are complete.

When asphaltting in cold, an ADOT Certified Testing Lab will be made available by the Owner to measure surface temperature on which asphalt is to be placed as well as air and asphalt temperatures. As a minimum, air temperature shall be 40E and rising as well as the surface the asphalt is to be placed. The contractor will bear the cost of the laboratory testing for this situation.

If any settlement occurs under roadway, the entire roadway shall be resurfaced for at least 50 feet on both sides (100 feet total) of the settled trench. Where resurfaced segments approach within 50 feet of each other, the segment between resurfaced segments shall also be resurfaced, even though outside the 50 feet segment.

Prior to placing curb, gutter, concrete, or asphalt, etc., use survey equipment to check that all paving will properly drain to prevent puddle formation. Coordinate with Engineer and adjust grades as required to prevent ponding during rain or washdown.

3.0 CONCRETE WALKS AND OTHER SURFACES

All concrete walks shall be constructed on firm compacted subgrade or a crushed stone base of compacted thickness not less than 4 inches. The subgrade shall be damp when concrete is placed. Expansion joints shall be located where the walk changes direction, abuts a structure, top and bottom of steps, and not farther apart than 30 feet on a straight run. The expansion joint and filler shall be 3/8 inch thick asphaltic fiberboard with edges of the concrete rounded. Contraction joints 1 inch deep shall be cut across the walk not farther than 6 feet apart. Final finish will be lightly cross broomed.

Concrete parking areas and drives will be finished as described above with #5 rebar @ 10" o.c., e.w. added for reinforcing or as shown on the plans.

4.0 CURB, GUTTER, AND COMBINATION CURB AND GUTTER

This Sub-section shall cover the work of constructing Portland cement concrete gutter, curb, or combination curb and gutter, constructed with or without metal reinforcement. Curb and gutter shall be constructed in accordance with the plan details and these specifications at the locations shown on the plans or established in conformity with the lines, grades, dimensions, and cross sections shown on the plans or designated.

All materials shall conform to the requirements of Concrete Standard Specifications herein. The foundation shall be constructed or excavated to the required depth below the finished surface in accordance with the cross section shown on the plans or as designated. All soft or other unsuitable material shall be removed and replaced with suitable material, in layers not to exceed 4 inches compacted. The foundation shall be compacted as provided for the applicable types of material involved.

The Contractor shall use standard type metal forms or wood forms or if requested in writing and approved by the Engineer, an approved automatic extrusion type curb

and/or gutter machine. These forms shall be straight except for radial sections, and free from warps and of sufficient strength, when staked, to hold the concrete true to line and grade without distortion. They shall provide the approved typical section and depth of the section shown on the plans. Radial or curved forms may be of flexible metal or a wood form of approved design. Bent or damaged forms shall not be used. All forms shall be securely staked, braced, and held together to the exact lines and grades established and shall be kept sufficiently tight to prevent leakage of mortar. All forms shall be cleaned and oiled with a suitable form oil immediately before concrete is placed against them.

Any automatic extrusion type curb and/or gutter machine considered for approval must be demonstrated to produce a section conforming to the dimensions, cross-section, lines, and grades shown on the plans. Failure to consistently produce an acceptable product shall be cause to withdraw approval of the machine and order the use of standard forms. All types of curbs, gutter, and combinations shall be placed in one operation, to the depth of cross section specified on the plans. The use of a two stage operation will not be permitted.

Gutter, curb, and combination curb and gutter shall be constructed in sections of the lengths shown on the plans. The length of section may be reduced where necessary to form closure. The handling, storage, proportioning, and mixing of concrete shall conform to the Concrete Standard Specification herein.

All expansion, contraction, and construction joints shall be constructed as shown on the plans. If not shown on the plans, joints shall be placed as follows:

1. Expansion joints shall be placed in curb and/or gutter to match those in concrete pavement where the two are adjacent.

2. Expansion joints shall be $\frac{3}{4}$ of an inch wide. They shall be placed where curb, gutter or combined curb and gutter terminate against concrete driveways and other concrete structures except inlets. The joints shall be placed at least 20 feet from the location of the termination of the curb, gutter or combined curb and gutter at inlets.

3. Expansion joint filler and sealer shall be one of the materials provided by AASHTO M 153 or AASHTO M 213 with the latter being modified to allow a maximum of 25% water absorption. Expansion joint filler shall extend from the bottom of the curb and/or gutter to within 1 inch of the top; the sealer shall be $\frac{3}{4}$ of an inch thick and shall be recessed $\frac{1}{4}$ of an inch from the top. Hot Applied Joint and Crack Sealant shall meet the requirements of AASHTO M 324 (ASTM D 6690) for Type I Sealant or Type II Sealant. Cold Applied Joint and Crack Sealant shall be a resilient adhesive compound capable of effectively sealing joints from infiltration of incompressible materials and water throughout repeated contraction and expansion cycles. The sealant shall be a homogeneous blend of materials, which may or may not require a primer. The sealant shall meet the requirements given in ASTM D 5893.

4. Contraction joints shall be placed in curb and/or gutter to match those in concrete pavement where the two are adjacent, but in no instance more than 20 feet between joints. The contraction joints shall be sawed or otherwise cut 2 inches deep by $\frac{1}{8}$ of an inch wide and shall extend 2 inches below the pavement surface.

The subgrade and forms shall be checked and approved just prior to placing concrete against them. All debris or other foreign material shall have been removed from the space to be occupied by the concrete. The subgrade shall be moist but not wet or muddy. After mixing, the concrete shall be placed in the forms and shall be tamped, spaded, or vibrated sufficiently to produce a dense homogeneous mass and to bring the mortar to the surface. Particular attention shall be given to spading the concrete along and against the surface of the forms to prevent honeycombing and secure a smooth, uniform surface.

When the forms are filled, the concrete shall be struck off with a template, cut to the curb edge design. The exposed concrete surface shall then be finished smooth with a wooden float in a manner that will compact the mass and produce a true, even top surface. Plastering with mortar to build up or finish will not be permitted. The surface of the gutter and the face and top of the curb shall be checked with a 10 foot straightedge and any irregularities more than 1/4 of an inch in 10 feet corrected. The alignment and grade shall not at any point vary more than 1/2 of an inch from that established by the elevation control stakes. Excessive troweling with a steel trowel will not be permitted. A textured finish shall be provided on the exposed surface just before the concrete becomes nonplastic by the use of a burlap or cotton fabric drag, brush, or broom which will produce a uniform gritty texture along the length of the curb, gutter, or combination curb and gutter. The upper edges of curb and gutter shall be rounded with an approved edging tool to the radius shown on the plans. The joint templates shall be set during the placing of the concrete and allowed to remain in place until the concrete has set sufficiently to hold its shape, but shall be removed while the forms are still in place.

The forms shall be left in place until the concrete has set sufficiently so that they can be removed without damage to the work, but, unless otherwise directed, they shall be removed within 24 hours after the concrete has been placed. Immediately after the removal of the forms, the repair of any minor defective areas shall be accomplished.

Immediately after the finishing operation is completed, the concrete shall be cured. If mats are used, they shall be kept continuously moist for a period of at least 72 hours. During this period, and until completion and acceptance of the work, it shall be protected from damage by the elements or other cause. After the concrete has set sufficiently, spaces along the front and back sides of the gutter, curb, or combination curb and gutter, shall be backfilled to the required elevation with suitable material which shall be compacted.

**STANDARD SPECIFICATION
FOR
GRASSING**

SECTION 4

1.0 GENERAL

This work shall consist of furnishing, planting and establishing an acceptable stand of grass or other vegetative cover for use and protection of the project. Work includes, but is not limited to temporary seeding as required, furnishing and placement of fertilizers and soil treatments, furnishing, inoculation, and planting of seeds, and the covering, compaction and maintenance of seeded areas. On all work on and adjacent to private property, the Contractor shall replace the disturbed materials with materials identical to those on the site. Sod shall be provided and installed wherever needed to match existing grass. In sensitive areas and when required by Owner during construction, grass and landscaping will be replaced immediately after primary construction (i.e. pipeline installation, etc.) is complete with Contractor accepting the risk of further disturbance due to testing, other clean-up, etc.

2.0 MATERIALS

Sodding and Seeding. The sod shall be native to the area with well matted roots. Sod containing weeds, other grasses, or fire ants shall not be accepted. The seed mixture, fertilizer, lime and rates of application of all these items shall be as specified herein as a minimum and as required to achieve full coverage. Topsoil shall be placed over the area to be seeded or sodded to a depth of 4 inches. Topsoil will be obtained from the original excavation stockpile. If sufficient topsoil is unavailable, the Contractor will obtain and deliver topsoil from another site at his expense. Topsoil shall be free from all rock or gravel.

2.1 SEED MIXTURES

Seeds and seed mixtures shall conform to the Alabama Department of Transportation Standard Specifications for Highway Construction, Section 860.01, latest edition. Permanent seed mixtures in areas subject to frequent mowing for planting zones 1 and 2 shall be 1A or 2A with mix adjusted as required for the season. All areas at treatment plants, pump stations, wells, and tanks, as well as all areas inside fencing, shall be considered frequently mowed areas. Seasonal temporary mixes shall be as specified for their respective permanent mix. Temporary grassing may be modified by the contractor as required for erosion control or to comply with his BMP plan. In areas not subject to frequent mowing, mix shall be 1E or 2E depending on the planting zone. Seed mixtures shall be modified when required to match adjacent grassing. No bahiagrass shall be seeded.

3.0 PROCURING AND HANDLING SOD

Sod shall be kept moist and planted within three (3) days. Sod will not be allowed to dry out or freeze. Sod shall be machine-stripped at a uniform soil thickness with a minimum of two (2) inches of soil adhering to the roots when placed. Sod shall be live, fresh, uninjured, and growing grass at the time of planting. Sod shall be handled in a manner that will prevent tearing, breaking, drying, or other damage. Sod shall be healthy when placed.

4.0 GROUND PREPARATION

The ground shall be plowed to a depth of not less than four (4) inches but not greater than eight (8) inches. The ground shall be cleared of all rock 3/4 inch (.75") or larger in size of any dimension, all construction debris, or other objectionable material by hand raking. After plowing and clearing, the ground shall be pulverized. Then, rock and debris-free topsoil shall be placed over the prepared area to a depth of four (4) inches, and mixed with the fertilizer and lime. After placement of topsoil, the ground shall be cleared of clods, all stones, rocks brush, roots, construction debris, or other objectionable material. In areas subject to frequent mowing, the ground shall be fine raked and hand picked to remove all gravel and rocks. Remove all other objects that may cause damage to mower blades. The Contractor shall supply water, and additional fertilizer if needed, for planting and growth without additional expense to the Owner.

5.0 PLANTING

Sod shall be placed on level, prepared soil at any time when ground is not wet or frozen. Sod shall be placed by butting edges of sod block and with alternating joints. Sod shall be used to fill in all voids after the sod has been laid. Roll sodded areas with hand-held roller to bond sod to soil and to smooth out rough spots. Completed sod shall be smooth, and free from irregularities. The Contractor shall maintain the planting until the final approval of the project which includes watering when necessary. Water shall be applied by the use of hose sprinklers, soaker hose, water truck with irrigation attachments or other watering equipment that will apply water in such as fashion as to avoid damaging areas. Seeded areas will have mulch applied at approximately two tons per acre to lessen the impact of erosion. All gullies and washes created shall be repaired and reseeded.

6.0 FERTILIZER AND SEED

When area is to be seeded, apply fertilizer in accordance with manufacturer's instructions at 500 lbs. per acre of 8-8-8 fertilizer or 300 lbs per acre of 13-13-13 fertilizer. Apply fertilizer after smooth raking of topsoil and prior to roller compaction. Do not apply fertilizer at same time or with same machine as will be used to apply seed. Mix thoroughly into upper 2 inches of topsoil. When growth has emerged and is growing normally, a second application of an approved nitrogen fertilizer shall be applied. Fertilizer shall be applied

uniformly at a rate of 67 pounds of nitrogen per acre unless a higher rate is desired to enhance growth.

Apply seed at rates specified evenly into intersecting directions and rake in lightly. Exercise care in covering to preserve the grade so that areas adjacent to pavement are not left higher than paved surface. After sowing, seed bed shall be compacted immediately with a cultipacker, roller or approved drag. Compacting of seeding is not required when seed has been applied hydraulically or mulched.

Do not seed areas in excess of that which can be mulched on same day. Mulching material shall be oat or wheat straw, free from weeds, foreign matter detrimental to plant life. It shall be spread over all seeded areas at a minimum rate of approximately 2 tons per acre, and shall be applied to a uniform depth in such a manner that not more than 10 percent of the soil surface is exposed. The use of wet hay or straw will not be permitted. Bailing twin shall be removed from mulch prior to placement.

Where temporary grass has been planted, the contractor shall establish the permanent grassing specified when weather and soil conditions are within the agronomic practice limits for the intended permanent species. Existing temporary vegetation shall be mowed to a height of approximately 3 inches or sprayed with an approved herbicide to retard future growth. The area shall be lightly scarified to prepare a suitable seed bed for permanent vegetation. Fertilize and permanent species shall be applied in the manner specified. Seed shall be covered by a second scarification followed by rolling. Scarification and rolling may be omitted when seed is spread by hydraulic equipment provided existing growth is 3 inches to 6 inches in height.

Erosion fabric shall be used when shown on the drawings, on all slopes greater than 3:1 and/or when the terrain requires use of erosion fabric. Fabric shall be woven jute fabric, open mesh construction smolder-resistant treated fabric shall be used and equal to Belton Anti-Wash/Geojute. Install fabric according to manufacturer's instruction.

Hydroseeding, when indicated in the plans to be provided, shall be accomplished with approved equipment, and all mixtures shall be constantly agitated from the time that they are mixed until they are finally applied to the seed bed. All such mixtures shall be used within eight hours from time of mixing. Nozzles or sprays shall not be directed toward the ground in such a manner as to cause erosion or runoff.

7.0 ACCEPTANCE

Acceptance of the planting shall be the satisfactory placement and growing of the material as determined by the Engineer. As a minimum, satisfactory stand for seeded grass must be a growing complete cover of grass, uniform in height, color, and density, in which gaps do not exceed the following:

1. Bare areas shall be scattered and not comprise more than 1/100 of any given area.
2. For frequently mowed areas, bare spots shall not exceed 4 square inches.
3. For infrequently mowed areas, bare spots shall not exceed 6 square inches.

Provide, at no additional cost to the Owner, watering, additional seed, additional fertilizer, and/or lime, etc., as required to achieve acceptance. It shall be the responsibility of the Contractor to secure a stand of grass such as will minimize loss of soil by erosion; to maintain all seeded areas until final acceptance of the work; and to restore or replace any portion of the grassing work that is found to be defective, or which results in an unsatisfactory stand of grass, or which becomes damaged prior to acceptance of the work. However, all grassing and coverage (whether seeded or sodded) through developed areas or in easements must match that existing prior to construction. Sod shall be level, well knitted and growing, covering the entire designated area.

If a satisfactory stand of grass or sod is not established then the area shall be re-seeded or re-sodded without any additional cost to the Owner. The responsibility of the Contractor shall continue to the following extent; should all other work at the site have been completed and accepted and should the Contractor have removed all forces and equipment from the plant site, he shall nevertheless, in the event of failure or partial failure of the grassing work, be obliged under the terms of the Bond given to the Owner to return such forces and equipment to the plant site as are necessary to ensure the satisfactory completion of this portion of work under the Contract.

The Contractor shall mow all sites a minimum of two (2) times, a minimum of two weeks apart after the permanent species has been established, with a finish type mower to demonstrate that the site can be readily maintained by the Owner without difficulty and without damaging equipment. Repeat the mowings a minimum of two additional times if portions of the site are disturbed, regraded, or any work is performed or equipment moved off the site, or any other activity is performed that may affect the acceptance of the grassing. The mowings shall be at a close setting (i.e., low grass height) that will reveal any deficiencies from these Specifications and any debris or potentially damaging items.

The Owner shall not be obligated to make any payment for grassing until an acceptable stand of grass meeting all the requirements of these specifications is achieved.

**STANDARD SPECIFICATION
FOR
EPOXY MANHOLE LINING REHABILITATION**

SECTION 5

1.0 SCOPE

The intent of this specification is to cover the method of rehabilitation, types of repairs, methods of repair, materials, and equipment. These specifications are a part of the Contract Documents and govern for the rehabilitation of manholes by the Spray Applied Epoxy or Polyurethane Resin Liner process, RLS Solutions, Warren Environmental System, Sprayroq, or Spectrashield.

The Contractor shall submit qualifications of both manufacturer and installer and manufacturer's information on liner material as well as recommended products for stopping active I/I. Manufacturer's installation instructions shall be submitted with description of liner placement and curing procedures; instructions for installation of materials utilized for stopping active I/I; manufacturer's requirements for receiving, handling, and storage of materials; and manufacturer's certification that products meet or exceed specified requirements.

Warranty shall be effective for a period of three (3) years from date of Owner's acceptance. Warranty shall cover leakage, separation, collapse, or other failure resulting from faulty materials or installation. Warranty shall require repair or replacement of the liner at no cost to Owner. Companies specializing in manufacturing products in this section shall have a minimum two years documented experience. The installer specializing in performing work of this section shall have a minimum two years documented experience in installation of liner materials and licensed or certified by manufacturer.

Contractor shall coordinate all work with users connected to system. Notification to homeowners and businesses at least twenty-four hours in advance of expected disruption of sanitary service is required. Disruption of service to individual properties is limited to no later than same day on which product is installed. Contractor shall provide and maintain temporary facilities including piping and pumps to meet requirements and set up bypassing pump system to isolate manhole from wastewater flow.

2.0 LINING OF MANHOLES

The work consists of applying an epoxy based liner material to the walls, bench, and invert of the host manhole. The finished epoxy liner shall conform to the following minimum requirements below:

1. Epoxy Liner – 100% solids spray or roller applied
2. Environment – Recommended for application to damp concrete in high humidity
3. Corrosion Resistance – Hydrogen Sulfide: 20%, Sulfuric Acid: 17%, Nitric Acid: 5%, Sodium Hydroxide and other chemicals commonly found in sanitary

wastewater

4. Liner Properties
 - a. Bond (ASTM C478) – Concrete Failure
 - b. Tensile (ASTM C307) – 2,500 psi min
 - c. Flexural (ASTM C580) – 4,800 psi
 - d. Shrinkage (ASTM 631) – 0.11% max
 - e. Moisture (ASTM C413) – 0.1%

Bond shall exceed tensile strength of substrate

Flexural Modulus - 550,000 psi - ASTM D-790 (1998)

3.0 MANHOLE PREPARATION

The Contractor shall adhere to all applicable OSHA rules and regulations as well as local rules and regulations regarding safety.

All concrete and masonry surfaces to be rehabilitated shall be cleaned prior to applying the lining system. All grease, oil, scale, coatings, loose bricks, mortar, unsound brick or concrete and other foreign materials shall be completely removed. Cleaning shall include using a 1:2 solution of muriatic acid followed by hydroblasting unless directed otherwise by the Engineer or manufacturer of lining materials. Other methods such as wet or dry sandblasting, concrete cleaners, degreasers, or mechanical means may be required to properly clean the surface. All surfaces on which these methods are used shall be thoroughly rinsed, scrubbed, and neutralized to remove cleaning agents and their reactant products. The resulting debris from the cleaning operation shall not be allowed to continue downstream into the sewer system. The debris must be removed and disposed of properly.

The Contractor shall be responsible for plugging or diverting the flow of wastewater as needed for manhole rehabilitation. Flow control is solely the responsibility of the contractor with no additional compensation.

The Contractor shall stop all Infiltration. The Contractor shall use hydraulic cement to stop infiltration at each point of leakage into the manhole. If the flow of water into the manhole is too great for stoppage utilizing hydraulic cement, the Contractor shall drill holes at each point of leakage which extend through the manhole wall. Chemical sealant injection devices shall be placed into the drilled holes in a manner to provide a watertight seal between the holes and the injection device. Hoses shall be attached to the injection devices from an injection pump. A mixture of manhole chemical sealants shall then be pumped until material refusal is recorded on the pressure gauge of the pumping unit. The Contractor shall ensure that excessive pumping pressures do not develop that may cause damage to the manhole walls. Once the injection of the chemical sealants have been completed, the injection packers shall be removed and the holes shall be filled and troweled flush with the surface of the manhole wall using a fast-set non-shrinking grout.

No additional compensation will be allowed for any prep work prior to lining. All cost associated with manhole rehab shall be included in unit price for epoxy lining.

Loose material shall be removed from the area to be patched exposing a sound sub-base. Holes or voids around steps, joints or pipes, spilled areas, and cavities caused by missing or broken brick shall be patched and missing mortar repaired using a nonshrink patching mortar. Cracks not subject to movement and greater than 1/16 inch in width shall be routed out to a minimum width and depth of 1/16 inch and patched with nonshrink patching mortar. Bench repair and patching of walls is considered incidental to manhole preparation for liner application.

Existing manholes that are lacking inverts and severally damaged benches shall be built/rebuilt prior to performing any lining procedure. Inverts and benches are to be built using Class B concrete unless otherwise noted on plans. Payment for construction/reconstruction of benches shall be paid at the per each Contract Price.

Both incoming and outgoing pipes shall be required to be plugged (following the procedures necessary to handle flow), prior to spraying the manhole bench and invert areas. Manhole steps are to be protected from the epoxy spray. Spraying of manhole steps is not allowed. Any excess spray in the invert that restricts any flows shall be removed and repaired/replaced at no additional costs. All protections from overspray, etc. shall be considered incidental to the work performed.

Application procedures shall conform to the recommendations of the epoxy system manufacturer, including all material handling, mixing and environmental controls. The equipment used to apply the system epoxy shall be as recommended by the manufacturer of the epoxy system and specifically designed to accurately mix the proper ratio of product and apply the same. The equipment shall be regularly maintained and in proper working order. The epoxy lining system must be applied by a manufacturer approved installer. The following is the minimum required thickness of the epoxy lining at the specified depths. The epoxy shall be installed in 3 layers or per the manufacturers' recommendations. Total set time shall not exceed 48 hours.

Minimum Epoxy Liner Thickness

Depth	Liner Thickness
All Depths	1/2"

Specially designed spray equipment designed for the application shall be used to apply each coat of epoxy. A wet film thickness gage meeting ASTM D4414 - Standard Practice for Measurement of Wet Film Thickness of Organic Coatings by Notched Gages shall be used during application to ensure a monolithic and uniform thickness.

4.0 RESETTING OF MANHOLE FRAME AND COVER

If necessary and prior to lining the Contractor shall remove existing frame and cover from manhole using caution not to damage manhole chimney or cone section. Damage to manhole chimney or cone section shall be repaired by Contractor with no cost to Owner. Clean and patch existing manhole chimney or cone to provide smooth, level and even surface. Re-install manhole frame and cover in accordance with plans and specifications. All work is required to meet all testing requirements of these specifications.

5.0 DESTRUCTIVE DRY FILM THICKNESS TESTS

The Contractor shall perform one destructive dry film thickness test per 10 manholes rehabilitated at no additional cost to the Owner. The manholes to be tested shall be selected by the Engineer or his representative. If the manhole should fail the test, the Engineer or his representative shall select 3 additional locations in the manhole to be tested, (at no additional cost to the Owner). If 2 of the 4 selected locations fail, the Contractor shall apply additional epoxy coating to bring the manhole within specifications. All areas that are tested shall be repaired according to the manufacturer's recommendations at no additional cost to the owner.

6.0 VISUAL AND/OR ELECTRICAL INSPECTION

The Engineer or his representative and the Contractor shall perform a visual inspection for holidays in the epoxy liner. Areas showing signs of holidays shall be marked for re-coating. Re-coating shall be performed by the Contractor at no additional costs to the Owner.

The Contractor shall perform a minimum of 2 electrical spark tests at no additional cost to the Owner. The manholes selected for this test shall be selected by the Engineer or his representative. If either of these manholes fail this test, the Engineer may require testing of 2 additional manholes. The manholes failing this test shall be re-coated according to the manufacturer's recommendations.

7.0 VACUUM TESTING

All rehabilitated manholes shall be tested by the Contractor using the vacuum test method, following the manufacturer's recommendations for safe testing. The vacuum testing shall be performed after the lining has had adequate time to cure as per manufacturer recommendations. Any leakage noted in the manhole before, during, or after the test shall be repaired by the Contractor utilizing approved methods in conformance with the manufacturer's recommendations. No additional compensation will be allowed for the repair of any leakage. No additional compensation will be allowed for vacuum testing and should be included in the unit price for manhole rehabilitation. Testing procedures and allowances will be in accordance with these specifications. The Contractor shall furnish to the Owner/Engineer documentation showing the results of each vacuum test.

After the rehabilitation is completed on the manhole, the manhole shall be visually inspected by the Engineer or Engineer's representative and shall be accepted if found to be satisfactory. All finished surfaces of the rehabbed manhole shall be free of "runs", "sags", "blisters", or other imperfections or uneven lining surfaces. **NO VISIBLE LEAKAGE SHALL BE ALLOWED**

Rehabilitated manholes may be retested by the Owner within 36 months after the manhole is rehabilitated and must pass the vacuum test above. If the manhole should fail this test, the Contractor shall be required to repair/replace the lining to such point as to pass an additional vacuum test.

**STANDARD SPECIFICATION
FOR
SANITARY SEWER SYSTEM CONDITION INSPECTION BY TELEVISION**

SECTION 6

1.0 GENERAL

It is the intent of this specification to provide television inspection of the internal conditions of the existing sewer main prior to rehabilitation and a record showing internal conditions after rehabilitation. Video records will be accomplished through the use of closed circuit television equipment. Video logs will be produced with still digital image captures showing conditions and written reports.

2.0 DEFINITIONS

Television Inspection: Operation necessary to complete a true-color video recorded inspection for verification of existing internal sewer line conditions. Contractor shall furnish all labor, materials, equipment, tools, and other incidental services for closed circuit television inspection.

Still Digital Image Capture: Operation necessary to create a computer readable file containing a still digital image created from a selected frame of recorded inspection video.

Manhole Inspection: Provide visual inspection from manhole bottom for verification of existing conditions and location of unknown manholes Contractor shall furnish all labor, materials, equipment, tools, and other incidental services for manhole inspection.

3.0 MEASUREMENT AND PAYMENT

Payment for pre- television inspection shall be as shown in Basis of Payment. Post TV video recording should be included in the per linear foot price of Cured-In-Place Liner (CIPP). CCTV inspection may be required after point repairs have been made and will be paid according as shown in Basis of Payment.

4.0 EQUIPMENT

The Contractor shall furnish the television inspection studio, television camera, video capture equipment, and other necessary equipment, materials, electricity, labor, technicians, as may be needed to perform the television inspection.

The television inspection equipment shall be capable of inspecting a minimum of fifteen hundred (1500) feet of sewer line, when entry into the sewer can be accessed from the upstream or downstream manhole. Pan and tilt CCTV cameras shall be employed to video the main sewer line to be lined to show the line is clean and the conditions are acceptable to install the CIPP. The inspection equipment shall be designed to and shall clearly televise the interior of a six (6) inch diameter sewer and all larger sizes. Sewer service laterals shall be videoed to

the existing R.O.W. limits by means of a lateral launch camera. Two records of the video shall be produced, (in format acceptable to the owner), by the contractor and presented to the Engineer for the owner's record of the pre-CIPP installation. In addition to the two records of video, the Contractor shall furnish two external (hot swappable) hard drives 500GB or larger. The Contractor shall store a copy of all video and video logs on one of the hard drives and deliver to the Engineer. The Engineer will copy data and return hard drive to the Contractor and retrieve the second hard drive and continue on a rotational basis to be determined by the Engineer. The two hard drives shall remain the property of the Contractor, after All Video and Data Logs have been transferred in this manner.

The television equipment shall be transported in a stable condition through the sewer line under inspection. Throughout the inspection the camera shall be positioned with the camera directed along the longitudinal axis of the sewer. When the television equipment is towed by winch and bond through the sewer line, all winches shall be stable with either licking or ratcheting drums. All winches shall be inherently stable under loaded conditions. The bonds shall be steel or of an equally non-elastic material to ensure the smooth and steady progress of the camera equipment. All effort shall be made to prevent damage to the sewer conduit during the television inspection. In the case where damage is caused by the Contractor, for any reason, such as would be caused by incorrect deployment of bonds or retrieval of lodged equipment, etc., the cost of repair shall be borne by the Contractor.

The Contractor shall divert wastewater flow as required for television inspection.

The television studio shall be large enough to accommodate four (4) people for the purpose of viewing the television monitor while the inspection is in progress. The television studio shall be insulated against noise and extremes in temperature, and shall be provided with means of controlling external and internal sources of light in a manner capable of ensuring that the monitor screen display is in accordance with the requirements of these specifications. The Engineer or his representative shall have access to view the television screen at all times. The central control panel and television camera control shall be mounted on a mobile vehicle (truck or trailer) which allow safe and orderly movement of the inspection equipment throughout the job site.

The television camera used for the sewer line inspection shall be one specifically designed and constructed for sewer pipeline inspection. The camera shall be waterproof and shall be operative in any conditions that may be encountered in the inspection environment. The Contractor shall provide a color pan and tilt camera to facilitate the inspection of service laterals and sewer line and manhole defects. The television camera shall be capable of 360E rotational scan indicating any salient defects. The tilt arc must not be less than 225E unless otherwise approved by the Engineer. The adjustment of focus and iris shall provide a minimum focal range of 6 inches in front of the camera's lens. The distance along the sewer in focus from the initial point of observation shall be a minimum of twice the vertical height of the sewer. The illumination must be such as to allow an even distribution of the light around the sewer perimeter without the loss of contrast, flare out of picture, or shadowing. The view seen by the television camera shall be transmitted to a monitor of not less than eleven (11) inches in size. The television camera shall be capable of receiving and transmitting a picture having not less than 450 lines of resolution. The travel speed of the television inspection

camera (through the sewer) shall be uniform and shall not exceed the maximum speed directed by the Engineer [six inches per second under normal conditions].

The Contractor shall test the television inspection equipment to verify the picture quality. The Marconi Regulation Chart No. 1 or the equipment manufacturer's recommendation shall be used to clearly differentiate between the following colors: white, yellow, cyan, green, magenta, red, blue, and black.

The television equipment shall be of such quality as to enable the following to be achieved:

1. Color: With the monitor adjusted for correct saturation, the six colors plus black and white shall be clearly resolved with the primary and complementary colors in order of decreasing luminance.
2. Linearity: The background grid shall show squares of equal size, without convergence/divergence over the whole of picture. The center circle shall appear round and have the correct height/width relationship ($\nabla 5\%$).
3. Resolution: The live picture must be displayed on a monitor capable of providing a clear, stable image free of electrical interference with a minimum horizontal resolution not less than 400 lines.
4. Color Consistency: To ensure that the camera shall provide similar results when used with its own illumination source, the lighting shall be fixed in intensity prior to commencing the survey. In order to ensure color consistency no variation in illumination shall take place during the inspection.

The Engineer may periodically check both the live and video picture color consistency against the color bar. Any differences will necessitate re-survey of the new length or lengths affected, at the Contractor's expense.

The closed circuit television monitor display shall incorporate an automatically updated record in feet and tenths of a foot of the distance along the line from the cable calibration point to the center point of the camera or center point of the transducer, whichever unit is being used. The relative positions of the two center points should also be noted. The Contractor shall use a suitable metering device which enables the cable length to be accurately measured; this shall be accurate to $\nabla 1\%$ or 6 inches whichever is greater. The Contractor shall demonstrate that the tolerance is being achieved by tape measurement between manholes on the surface. This tape measurement must be included on each television inspection log both written and digital.

If the Contractor fails to meet the required standard of accuracy, the Engineer will instruct the Contractor to provide a new device to measure the footage. The Engineer may at his discretion instruct the Contractor in writing, to re-survey those lengths of sewer first inspected with the original measuring device using the new measuring device.

The still digital image capture equipment shall be capable of capturing images at a resolution of 512 x 512 with 16-bit color depth (65,536 color palette) and storing images in the Joint Photographic Experts Group (JPEG) compressed file format.

All still digital image captures and digital recordings made during the television inspection shall become the property of the Owner and shall be submitted to the Owner immediately upon completion of the television inspection.

5.0 EXECUTION

The Contractor shall inspect sewer pipelines with pan and tilt conventional television imagery as specified so as to record all relevant features and defects of the pipeline under inspection and provide to the Engineer two (2) copies of both digital video and inspection reports of pre-TV. Inspection of pipelines shall be carried out in a format approved by the Engineer. Cleaning shall be performed so as to allow thorough viewing of pipe conditions without obstruction of debris or roots. The operation of the television equipment shall be controlled by a skilled technician or supervisor who shall be located at the control panel in the mobile television studio.

If television inspection of an entire section cannot be successfully performed from one manhole, a reverse setup shall be performed to obtain a complete television inspection. No additional payment will be made for a reverse setup.

The Contractor shall provide a complete television inspection of both the upstream and downstream manholes beginning at the top of each manhole and panning down to inspect the entire manhole. The Contractor shall visually inspect manholes as specified so as to record all relevant features and to confirm their structural and service condition. The defects shall be recorded on the manhole inspection report. The requirements of this paragraph are not applicable if manhole rehabilitation is not part of this project.

Wherever prevailing conditions allow, the CCTV head shall be positioned to reduce the risk of picture distortion. In circular sewers the CCTV camera lens shall be positioned centrally (i.e. in prime position) within the sewer. In non-circular sewers, picture orientation shall be taken at mid-height, unless otherwise agreed, and centered horizontally. In all instances the camera lens shall be directed along the longitudinal axis of the sewer when in prime position. A positioning tolerance of $\nabla 10\%$ of the vertical sewer dimension shall be allowed when the camera is in prime position.

6.0 STILL DIGITAL IMAGE CAPTURES

Still digital image captures, shall be made from the video recording of a defect when the severity of the defect is in excess of the specified limits as shown below:

<u>Defect Descriptor</u>	<u>Description of Defect</u>	<u>Defect shall be Captured</u>
SL	All Service Laterals	In all instances
PSL	Service Lateral Protruding	In all instances
RT	Roots in Line	When roots span $\geq 20\%$ pipe diameter
CL	Crack - Longitudinal	When crack span is ≥ 1 pipe section

<u>Defect Descriptor</u>	<u>Description of Defect</u>	<u>Defect shall be Captured</u>
CC	Crack - Circumferential	When crack span is $\geq 50\%$ of pipe circumference
CM	Cracks - Multiple	In all instances
FR	Fractures	In all instances
MP	Missing Pipe	In all instances
CP	Collapsed Pipe	In all instances
OJ	Offset Joint	When offset is $\geq 10\%$ of pipe diameter measured vertically
SJ	Separated Joint	When separation is ≥ 1 inch measured longitudinally.
INF	Infiltration	When the infiltration is rated ≥ 0.1 gpm.
OBS	Obstruction	In all instances
DEB	Debris	In all instances
PDC	Pipe Diameter Change	In all instances
PMC	Pipe Material Change	In all instances
OV	Ovality	In all instances

Still digital captures shall not be required where the plans indicate abandon and grout mainline. The still capture shall be made from a single frame as recorded on the video tape. The captured image shall have the same image quality as the source frame and shall be stored in the Joint Photographic Experts Group (JPEG) compressed file format at a resolution of 512 x 512 at a 16-bit color depth (65,536 color palette). When viewed on a properly calibrated SVGA monitor, having the necessary resolution and color depth capabilities, the still digital image captured shall produce a clear image of the same quality as the original video recording. These images shall be stored on CDROM media created in compliance with ISO Level 2 in order to support long filenames. The captured images shall be stored in individual files. The individual files shall be stored in subdirectories named for the corresponding mini-system. The individual files shall be named using the following file naming convention:

1. Format: **aaaaa_0000_aa.jpg**. Whereas, **a** is any alphanumeric character (0-9 or a-z) and **0** is any integer number (0-9).
2. The file name shall be arranged as follows: Manhole ID_Distance from Upstream Manhole_Defect descriptor.jpg, e.s., **006_495_oj.jpg**

The following criteria shall be followed when naming a file:

- i. There shall be no spaces in the filename.
- ii. The filename shall only contain one period (.).

- iii. The filename extension shall be Ajpg@.
- iv. The manhole ID shall be composed of a minimum three (3) numeric characters plus any alphanumeric characters for the manhole suffix, if any.
- v. The distance to the upstream manhole shall be expressed as an integer.
- vi. All manhole ID=s, distances and defect descriptors entered in a filename shall replicate character for character that which is contained in the respective television inspection report as supplied to the Engineer.

7.0 DIGITAL VIDEO RECORDING

Digital Video Recording: Continuous digital recordings of the inspection view as it appears on the television monitor shall be taken. It is intended that a digital video recording will be made of the complete television inspection of all the sewer lines constructed as part of this project. The digital video recording shall also be used as a permanent record of defects. The digital video recording shall be made on DVD or other approved equal. The digital video recorder shall be one on which both sound and video information can be reproduced with a video image equal to or better than the quality of the original picture on the television monitor. The replay of the recorded video information, when reviewed on a monitor-receiver, shall be free of electrical interferences and shall produce a clear, stable image with a horizontal resolution equal to that of the television monitor in the television inspection studio. The audio portion of the composite signal shall be sufficiently free of electrical interference and background noise to produce an oral report that is clear and completely and easily discernible.

The audio portion of the tape report shall include the location or identification of the section, the manhole-to-manhole direction of travel, and the distance traveled on the specific run encountered. The digital recording equipment shall be continuously connected to the television inspection or monitoring equipment. The digital recording and monitoring equipment shall have the build-in capability to allow the Engineer to instantly review both the audio and video quality of the videotape productions at all times during the television survey. Playback speed shall be continuously adjustable from one-third normal speed for slow motion viewing to normal playback speed. Videotape recordings shall be enclosed in acrylic or plastic containers which shall clearly indicate the date the video was recorded, the designated section(s) of sewer lines contained on the tape, and the referenced sewer inspection report covering the sections of the sewer lines included. Two permanent labels are required: one label shall be placed on the acrylic/plastic container and the other on the face of the DVD recording. The recording of the segment between manholes shall be continuous and complete.

8.0 TELEVISION INSPECTION REPORTS

The Contractor shall complete a television inspection report covering the television inspection work and the information acquired. Prior to beginning work, the Contractor shall submit a standard television inspection report to the Engineer for approval.

A Television Inspection code sheet shall be used consistently throughout the contract. The code sheet shall include abbreviations for specific defects based on industry standards. The Contractor shall submit a code sheet to the Engineer for approval prior to beginning work.

In addition to paper documents, all television inspection reports shall be furnished in electronic format. Television inspection reports shall be furnished in dBase version III or IV (.dbf) format. The Engineer reserves the right, at his sole discretion, to refuse any data format that would cause unnecessary cost to the Owner to enable the data to be utilized by the Owner.

Video Data Display: At the start of each sewer length being surveyed, the length of pipeline from zero up to the cable calibration point shall be recorded and reported in order to obtain a full record of the sewer length. The length reading entered on the data display at the cable calibration point must allow for the distance from the start of the survey to the cable calibration point such that the footage at the start of the survey is zero. In the case of surveying through a manhole where a new header sheet is required, the distance shall be set at zero with the camera focused on the outgoing pipe entrance.

Television Inspection Record: At the start of each manhole length a data generator shall electronically generate and clearly display on the viewing monitor and video recording a record of data in alphanumeric form containing the following minimum information:

1. Automatic update of the camera=s position, in feet, in the sewer line from adjusted zero.
2. Size and length of line, type of material line composed of.
3. Upstream manhole and downstream manhole references numbers with mini system specified before manhole reference number.
4. Date of inspection
5. Road name/location.
6. Direction of inspection (upstream or downstream)
7. Starting time of inspection.

Once the survey of the pipeline is under way, specific data shall be continuously displayed on the viewing monitor and video recording. The size and position of the data display shall be such as not to interfere with the main subject of the picture yet shall be easily readable when the recording is replayed. At minimum, the following data shall be displayed:

1. Automatic update of the camera=s position, in feet, in the sewer line from adjusted zero.
2. Sewer dimensions and type (8" clay, etc.).
3. Upstream manhole and downstream manhole reference numbers with mini system specified before manhole reference number.

Each sewer length, i.e. the length of the sewer between two consecutive manholes, shall be entered on a separate coding sheet. Thus, where a Contractor elects to pull

through a manhole during a CCTV survey, he shall start a new coding sheet at the manhole pulled through and shall reset the distance to zero on the coding sheet.

The Engineer may, at his discretion, issue a written instruction to the Contractor to provide a sample of the still digital image captures, ASCII field data, and/or CCTV DVD=s taken during the Contract period. The Engineer shall give a written instruction and the Contractor shall provide the information within 5 working days of receiving the written instruction.

9.0 QUALITY CONTROL

The Contractor shall operate a quality control system, to be approved by the Engineer, which will effectively gauge the accuracy of all inspection reports produced by the operator.

The Engineer shall be entitled to audit the control system and be present when assessments are being computed. When requested by the Engineer, the Contractor shall forward to the Engineer sufficient details and information for such audit assessment. Should any report fail to achieve a margin that the Engineer deems satisfactory, the Engineer shall require the Contractor, without any additional compensation, to recode and resubmit any data or reports that the Engineer deems necessary.

APPENDIX

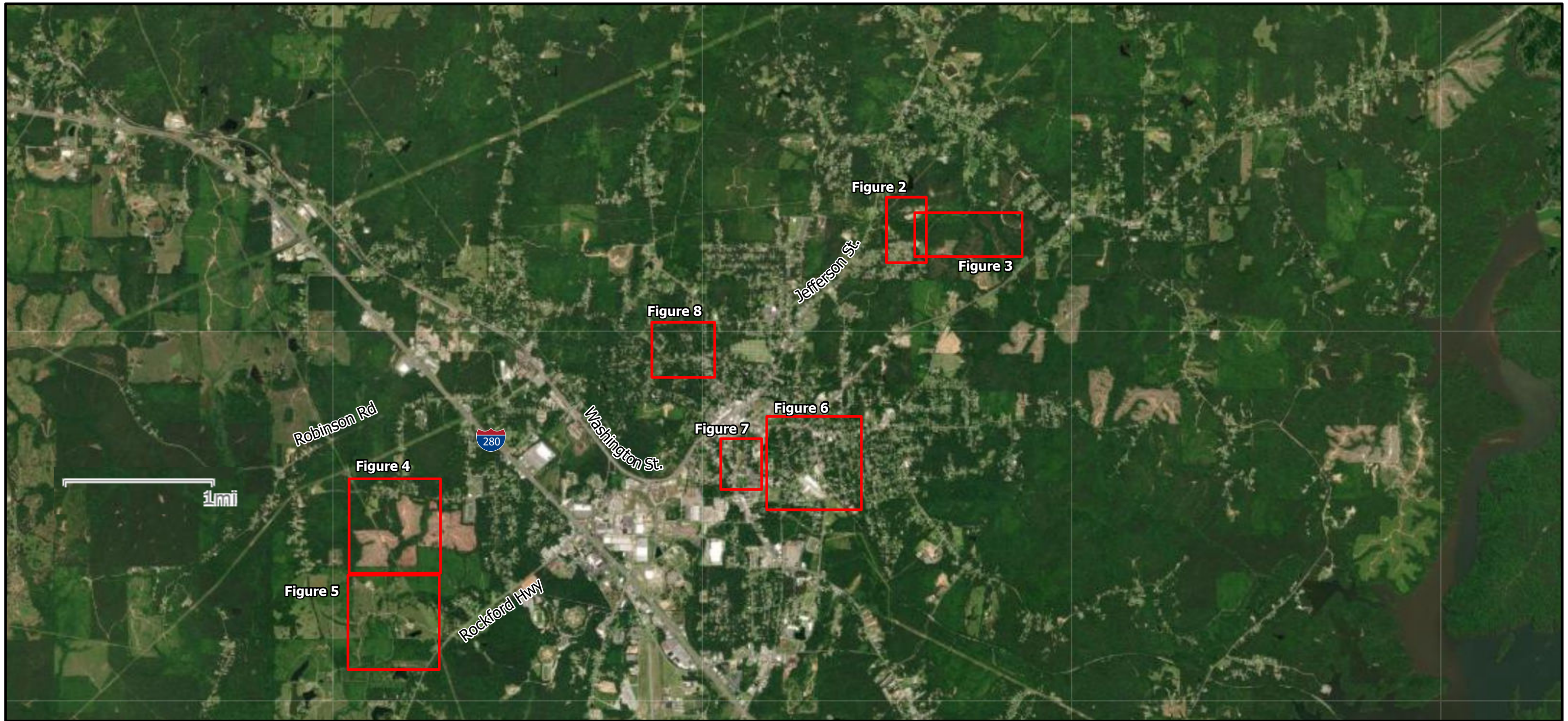
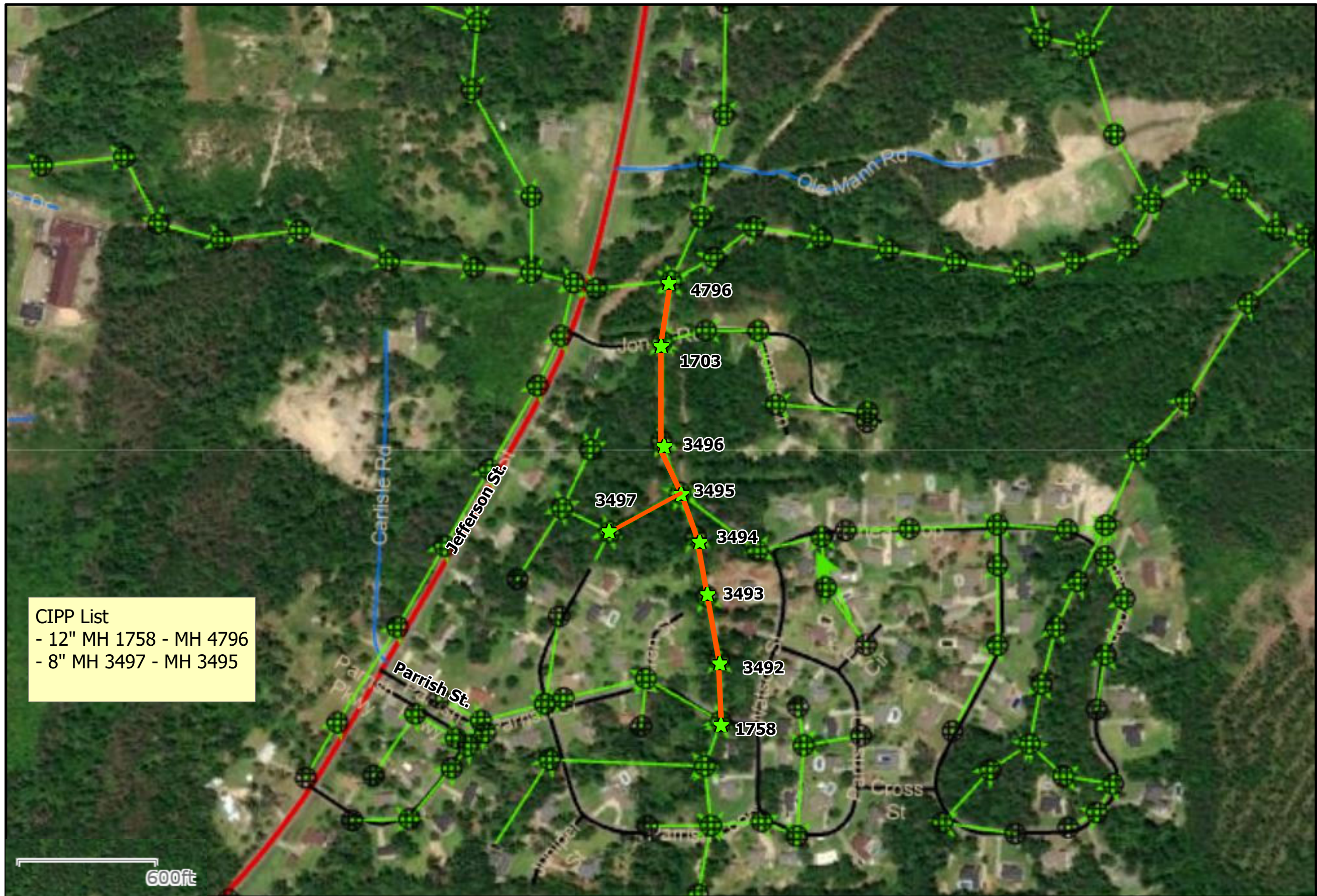


Figure 1
2022 Annual Sewer Maintenance and Rehabilitation Project
City of Alexander City, AL





CIPP List
 - 12" MH 1758 - MH 4796
 - 8" MH 3497 - MH 3495

Figure 2
2022 Annual Sewer Maintenance and Rehabilitation Project
Parish Hills to Jones Village
City of Alexander City, AL

- ★ 2022 CIPP MH
- ALEXANDER CITY MH
- CITY SEWER MAIN
- 2022 CIPP PROJECT





Figure 3
2022 Annual Sewer Maintenance and Rehabilitation Project
Jones Village to Voss Rd. Line
City of Alexander City, AL

Municipal Consultants, Inc.
 200 Century Park South, Suite 212
 Birmingham, Alabama 35226
 (205) 822-0387

- ★ 2022 CIPP MH
- ALEXANDER CITY MH
- CITY SEWER MAIN
- 2022 CIPP PROJECT





Figure 4
2022 Annual Sewer Maintenance and Rehabilitation Project
County Rd to Ford PS
City of Alexander City, AL

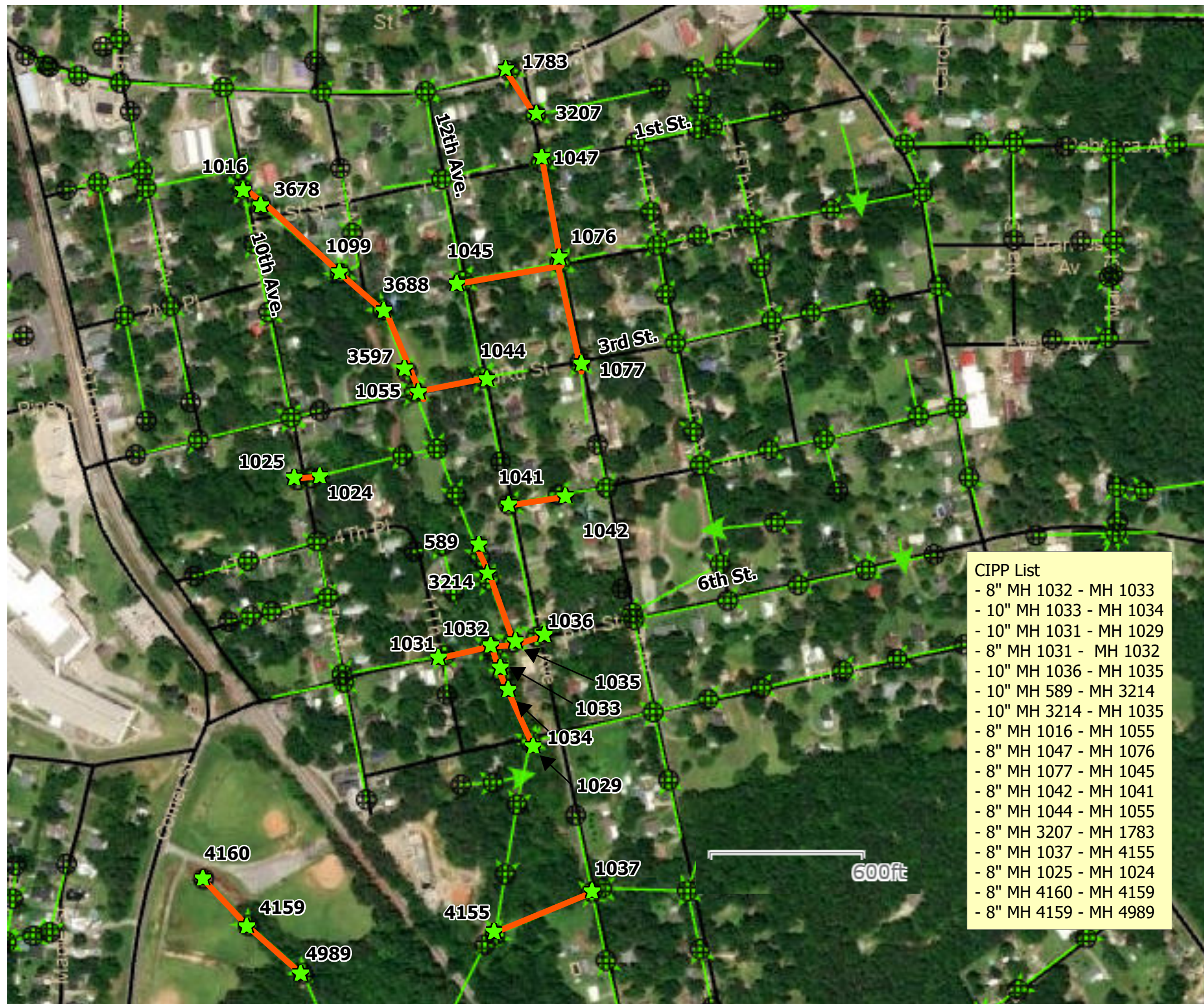


Figure 5
2022 Annual Sewer Maintenance and Rehabilitation Project
County Rd to Ford PS
City of Alexander City, AL

Municipal Consultants, Inc.
 200 Century Park South, Suite 212
 Birmingham, Alabama 35226
 (205) 822-0387

- ★ 2022 CIPP MH
- ALEXANDER CITY MH
- CITY SEWER MAIN
- 2022 CIPP PROJECT

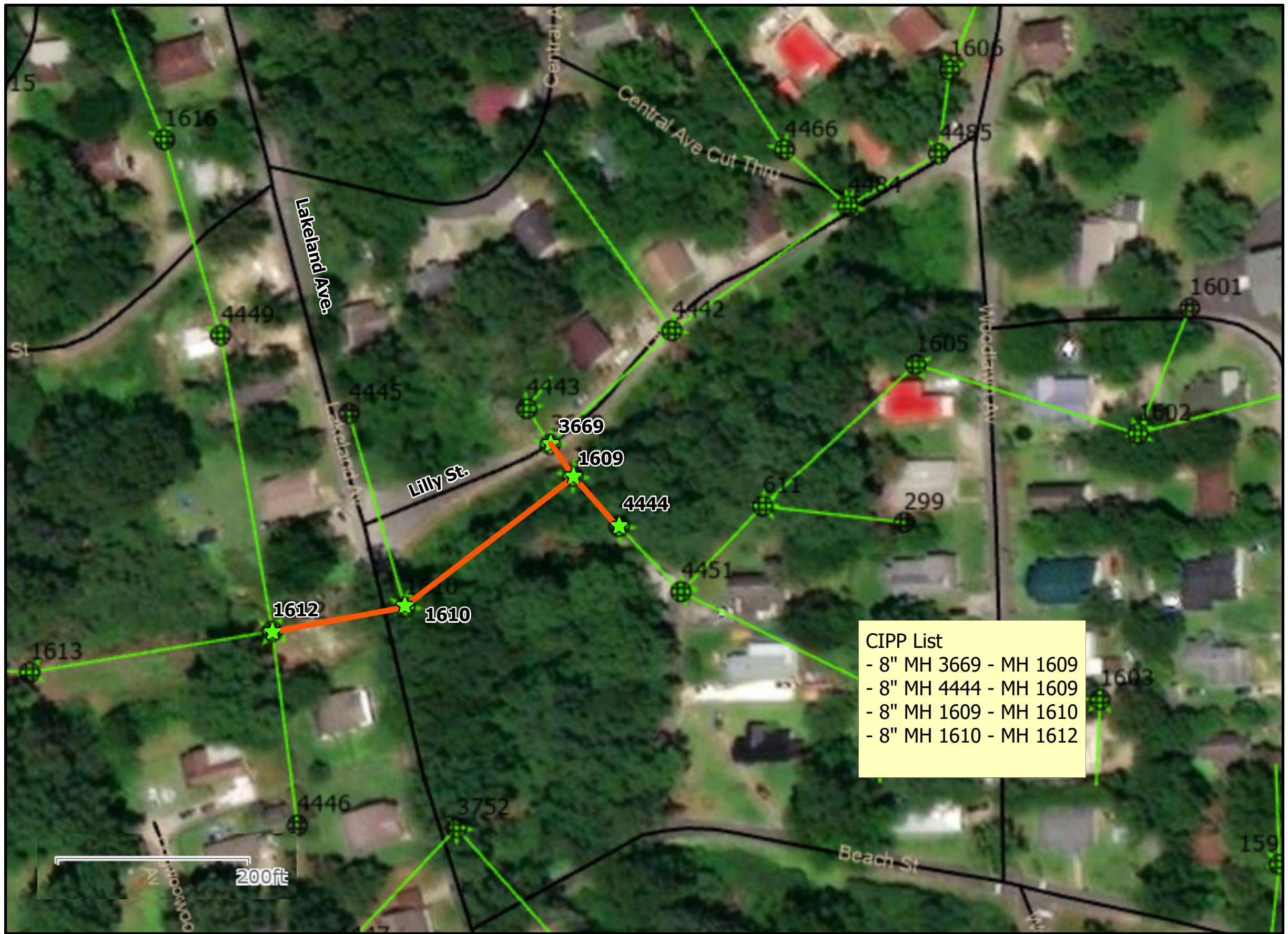




- CIPP List**
- 8" MH 1032 - MH 1033
 - 10" MH 1033 - MH 1034
 - 10" MH 1031 - MH 1029
 - 8" MH 1031 - MH 1032
 - 10" MH 1036 - MH 1035
 - 10" MH 589 - MH 3214
 - 10" MH 3214 - MH 1035
 - 8" MH 1016 - MH 1055
 - 8" MH 1047 - MH 1076
 - 8" MH 1077 - MH 1045
 - 8" MH 1042 - MH 1041
 - 8" MH 1044 - MH 1055
 - 8" MH 3207 - MH 1783
 - 8" MH 1037 - MH 4155
 - 8" MH 1025 - MH 1024
 - 8" MH 4160 - MH 4159
 - 8" MH 4159 - MH 4989

Figure 6
2022 Annual Sewer Maintenance and Rehabilitation Project
Avondale Village
City of Alexander City, AL





CIPP List
 - 8" MH 3669 - MH 1609
 - 8" MH 4444 - MH 1609
 - 8" MH 1609 - MH 1610
 - 8" MH 1610 - MH 1612

Figure 7
2022 Annual Sewer Maintenance and Rehabilitation Project
Avondale Village
City of Alexander City, AL



Figure 8
2022 Annual Sewer Maintenance and Rehabilitation Project
Avondale Village
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