

ADDENDUM ONE
HIGHLAND PARK SEWER REHABILITATION
W-12-030-201
CITY OF CHATTANOOGA, TENNESSEE

The following changes shall be made to the Contract Documents, Specifications, and Drawings:

I. Contract Documents

- a) The Pre-Bid Meeting Minutes and sign-in sheets are attached and hereby made a part of the contract documents. Specification section 33 01 30.73 Cured-In-Place Pipe (CIPP) was passed out at the Pre-Bid meeting, to clarify installer qualifications, and therefore it is included in this addendum as part of the Pre-Bid meeting minutes.
- b) The following updated specification sections are attached and hereby made a part of the contract documents. Please replace the original sections with these attachments.
 - i) 00 11 16 - Advertisement for Bids (revised summary of work paragraph)
 - ii) 00 52 00 – Agreement (revised contract times)
 - iii) 01 11 00 - Summary of Work (revised summary of work paragraph)
- c) The Updated General Wage Decisions (GWD) for 5/06/2016 is attached and hereby made a part of the contract documents. It shall replace the current 1/08/2016 GWD located in the contract documents (pdf specifications pages 277 to 280).
- d) All Request for Information (RFI's) shall be submitted to the City by May 31, 2016 by 3:00 P.M. (EST). The deadline for responding to RFI's will be June 3, 2016.

II. Clarifications

- a) Will steam curing of the CIPP be allowed as an alternative to water?
 - i) **No. steam curing will not be acceptable on this project.**



May 16, 2016

/s/ Justin C Holland, Administrator
City of Chattanooga,
Department of Public Works

Sign In Sheet

**City of Chattanooga
Highland Park Sewer Rehabilitation
PRE-BID MEETING
May 12, 2016 – 10:00 A.M.**

[illegible]

W-12-030-201

NAME

PHONE[illegible]



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Contract No. W-12-0130-201

Highland Park Sewer Rehabilitation
City of Chattanooga

TO: ATTENDEES

FROM: David N. West, P.E.

DATE: May 13, 2016

RESUME OF MEETING

WHEN: Thursday, May 12, 2016, 10:00 A.M.

LOCATION: MBWWTP – Training Facility

SUBJECT: Pre-Bid Meeting

ATTENDEES.

Mr. Eric Brooks	City of Chattanooga
Ms. Debbie Talley	City of Chattanooga
Mr. Kadir Ameen	City of Chattanooga
Ms. Bonnie Mumpower Dodson	City of Chattanooga
Mr. David West	Volkert, Inc.
Mr. Brent Cunningham	Jacobs
Mr. Will Shelton	Jacobs
Ms. Chelle Whitmire-Reno	Southeast Tennessee Development District
Mr. David Burton	Layne Inliner
Mr. James Hall	JEH
Mr. Brookin Decker	Portland Utilities
Mr. Jeff Oberhofer	SAK Construction
Mr. Dewey Lee	Video Industrial

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1. Opening remarks – Mr. David West, Volkert, Inc.

Introductions

Owner – City of Chattanooga
Program Manager - Jacobs
Engineer – Volkert, Inc.

b. Bid Opening – June 7, 2016 until 2:00 P.M.

The City of Chattanooga Purchasing Department
101 East 11th Street, Suite G13

c. Pre-Bid Meeting – sign the attendees list

d. Completion Time:

- Revised contract times will be as follows:
 - Substantial Completion within 200 Calendar Days of the notice to proceed.
 - Final Completion within 221 Calendar Days of the notice to proceed.
- The current contract documents state the project will be at Substantial Completion within 170 Calendar Days of the notice to proceed, and final completion will be within 190 calendar days of the notice to proceed.
- The revised completion times will be included in Addendum 1.

e. Liquidated Damages: \$500 per day.

f. The items discussed here today are not intended to be all-inclusive. It is the Contractor's responsibility to review the Contract Documents and comply with all provisions.

2. Work Includes:

a. The work includes, but is not limited to, the following:

- The Project consists of the following major elements of construction: Approximately 29,175 feet of cured in place pipe sewer rehabilitation, of which approximately 2,925 feet is 10-inch and 26,250 feet is 8-inch; rehabilitation of approximately 710 vertical feet of manholes utilizing cementitious lining; reinstatement of service laterals with approximately 418 by robotic means; furnishing and installing approximately 36 chimney seal manhole inserts, and approximately 18 point repairs, ranging in size from 24-inch to 8-inch diameter pipe. Approximately 145 feet of 8-inch diameter gravity sewer will be replaced in same trench via open cut.
- The 1,425 feet of 8-inch diameter gravity sewer stated in the Bid Advertisement (sec 00 11 16) and Summary of Work (sec 01 11 00) was incorrect. The 145 feet shown above is correct. This will be clarified in

addendum #1. This line will be replaced by open cut methods, not by pipe bursting.

- b. The contract documents for this project are to be followed. If any Contractor assumes that any item included in the documents will be waived or not required he does so at his own risk.

4. Bidding – See Instructions to Bidders (Section 00 21 13)

- a. Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement for Bids and shall be enclosed in a sealed envelope with the “Contractor’s Identification” form securely attached thereto and shall contain the Bid security and other required documents.
- b. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation “BID ENCLOSED.” A mailed Bid shall be addressed to the place indicated in the Advertisement for Bids.
- c. A Bid must be made on a separate Bid Form. The Bid Form shall not be altered in any way.
- d. The sealed envelope shall contain the Bid Form (Section 00 41 00), the Bid security, and the documents listed below. The Bidder shall submit one original and two copies of all documents in the envelope.
 - Statement of Bidders Qualifications
 - Affidavit of No Collusion by Prime Bidder
 - Drug-Free Workplace Affidavit
 - Attestation Regarding Personnel Used in Contract Performance
 - Certification By Proposed Prime or Subcontractor Regarding Equal Employment Opportunity
 - Certification Regarding Debarment, Suspension and Other Responsibility Matters
- e. Bidder shall promptly give ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by ENGINEER is acceptable to Bidder.
- f. Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder. Nothing herein shall be deemed to limit the discretion of the City to determine whether or not a bidder not hereby disqualified is the lowest responsible bidder.
- g. See attached Specification section 33 01 30.73 Cured-In-Place Pipe (CIPP) for CIPP installer qualifications.

5. General Information

a. DAVIS- BACON ACT

- This project is being funded by a State Revolving Fund loan on or after 2010 EPA Fiscal Year. The loan recipient must be in compliance with all applicable requirements of the Davis-Bacon Act. **Chelle Whitmire-Reno (Southeast Tennessee Development District)**

b. Site Access:

- All work to be completed shall be on the City of Chattanooga's property or easements.
- If needed, the Contractor is responsible for acquiring all required right of entry and temporary construction easements on private properties in order to access existing sewers and perform the required work.
- It is the Contractor's responsibility to ensure that all employees have the required documentation and/or authorization to work in the U.S.A.

c. Allowances

- The Contractor shall include in the Bid Total all allowances stated in the Contract Documents. These allowances shall cover the net cost of the services provided.

d. Construction Schedule

- The construction schedules shall be in CPM format.
- The CONTRACTOR shall submit the Preliminary Project Schedule (PPS) for approval at least 30 days after the effective date of the Contract Agreement.
- The CONTRACTOR shall submit the Overall Project Schedule (OPS) within 10 days after the date of the Notice to Proceed.
- Construction schedules can be created using either Primavera or MS Project.

6. Other Items

- a. It is the Contractors responsibility to repair any existing utilities that are damaged during construction.

7. Contractor Questions

- Mr. West noted that the contract documents are available from the City purchasing department, if needed.
- The sign-in sheet from this pre-bid meeting has also been attached to these minutes.
- Contractor's Identification form shall be attached to the outside of the sealed envelope and a copy must be inside the sealed envelope.

- The Current project wage rate sheet is attached to addendum #1. This sheet will replace the one in the original contract documents.
- Ms. Whitmire-Reno reminded attendees that they must pay their employees weekly and all subcontractors must pay their employees weekly. There will be periodic site visit to check on wages.
- The City of Chattanooga will not locate manholes for the contractor. The contractor will have to locate and expose manholes based off of existing mapping and CCTV data.
- The contractor will be required to raise any buried manhole that requires access due to rehab activities.

Part 1 General

1.01 Scope

- A. Furnish all labor, material and equipment to provide for the reconstruction of existing sewer pipes using an approved Cured-In-Place Pipe (CIPP) method by forming a new pipe within an existing pipe.
- B. The sewer reconstruction shall be accomplished by the installation of a thermosetting resin-impregnated flexible felt-fiber tube coated on one side with an impermeable plastic which is installed into the existing sewer utilizing hydrostatic head. Curing is accomplished by circulating hot water throughout the length of the inverted tube to cure the resin into a hard, impermeable pipe with the plastic coating on the interior surface of the newly formed pipe. The CIPP shall extend the full length of the original pipe segment and shall provide a structurally sound, joint-less, close fitting and corrosion resistant cured-in-place pipe.
- C. The work performed under this Section of the Specifications is deemed to be Specialty Contractor Work and is subject to the provisions of Section 00 72 00 General Conditions, Article 6.06, Paragraph (I).
- D. The deterioration of sewers is an on-going process. In the event pre-construction inspections reveal the sewers to be in substantially different conditions than those in the design requirements specified herein, the Contractor shall submit a changed site condition notice and request such changes in liner thickness, supporting such requests with the appropriate design data satisfactory to the Engineer.

1.02 Reference Standards

Supply all products and perform all work in accordance with applicable American Society for Testing and Material (ASTM), American Water Works Association (AWWA), American National Standards Institute (ANSI), or other recognized standards. The latest revisions of all standards in effect on the date of advertisement are applicable. Where differences exist, or any latitude is either inferred or interpreted between this Specification and referenced product/process standards, this Specification shall govern.

1.03 Quality Assurance

- A. In order to establish minimum product quality and Installer capability, the following minimum requirements shall be met. The purpose for these submittals is to allow the Owner/Engineer the opportunity to conduct a complete, thorough and objective evaluation of proposed CIPP products and the Installing Contractor and to determine if the submitted products and Installer meet all experience, quality and utility standards required by the Specifications.
- B. CIPP System Manufacturer: The CIPP system must have a minimum proven performance record of 1,000,000 linear feet installed of the exact name-brand product

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bid in the United States, with a minimum of 20,000 linear feet in diameters 24-inch or larger over the last five years. In addition, a minimum of 10,000 linear feet of 36-inch diameter or larger, of the exact name brand product must have been installed in the United States. Documentation shall be submitted with the Bid in accordance with the Instructions to Bidders.

- C. Contractor/Installer Experience: The Installing Contractor for the cured-in-place reconstruction of sewers must have a minimum of five years of experience using the exact named product proposed and, have installed at least 300,000 linear feet of the exact named proposed product including at least 20,000 feet of 24-inch diameter or larger cured-in-place product. Documentation along with contact names and telephone numbers from the last ten projects shall be submitted with the Bid in accordance with the Instructions to Bidders.
- D. On Site Field Superintendent: The Qualifying Superintendent must have a minimum of five years of experience with cured-in-place pipe products. In addition, the Qualifying Superintendent must have supervised jobs in which at least 20,000 feet of pipe has been reconstructed using the exact named product proposed including a minimum of 5,000 feet of 24-inch diameter or larger cured-in-place product. The Contractor shall submit information to document this with the Bid in accordance with the Instructions to Bidders. The superintendent for the Project shall be on-site during all phases of the work involving any pre and post-installation video inspection, sewer cleaning or insertion and processing of the CIPP.
- E. Resin Class
 - 1. The Contractor shall designate a wet-out facility and shall provide wet-out liner tubes from this designated facility only. Multiple facilities to supply wet-out liner tubes for the duration of this Contract may not be used without prior approval of the Engineer.
 - 2. The Contractor shall place a sampling valve in-line at a point in the resin/catalyst mixing stage so that a sample of non-catalyzed resin may be taken. A second sampling valve shall be placed in-line at a point after the resin/catalyst mixing stage, but prior to catalyzed resin injection into the liner so that a resin sample may be taken. Both sampling valves shall be left in place for the duration of the Contract.
 - 3. The Engineer shall have the right to inspect the designated wet-out facility and draw samples from one or both sampling valves without prior notice to the Contractor for the duration of the Contract.
 - 4. Infrared Analysis
 - a. The Engineer reserves the right to subject resin samples to an infrared analysis (IR) Scan. This standard analytical test involves shining a beam of light in the infrared frequency region through a thin sample of subject resin. The frequency of light is then varied across the infrared spectrum. Chemical functional groups present in the resin being analyzed will absorb infrared light at specific frequencies and with characteristic absorption intensities.

- b. A spectrum created from the measurement of light transmitted through the sample across the range of infrared frequencies shall be used to determine the resin's chemical fingerprint. For Standard Polyester, an overlaid IR spectrum of Reichhold PolyLite® 33420 shall be used as a baseline comparison for the purpose of a test under this contract. For Enhanced Polyester resin, an overlaid IR spectrum of Reichhold PolyLite® 33420-E shall be used as a baseline comparison for the purpose of a test under this contract.
- c. The Engineer may perform random Infrared Scans (IR Scans) and/or Composite Burn-offs to ensure resin quality and consistency throughout the duration of the Contract and shall be responsible for the cost of IR testing.

1.04 Submittals

- A. Submit shop drawings in accordance with the requirements of Section 01 33 23 of these Specifications. Specific submittal information shall include the following:
 - 1. The Contractor shall furnish submittal data establishing the structural capabilities, chemical composition, and other mechanical properties of the liner system proposed.
 - 2. The Contractor shall furnish the proposed liner thickness for each pipe size and depth categories, along with a certification, signed and sealed by an engineer registered in the state that the Project is located, to the effect that the proposed liner thicknesses were calculated based on the parameters specified in Article 2.04 of this section of the Specifications and the site specific external loads. In no case will the proposed liner thicknesses be less than those specified in Article 2.04 of this section of the Specifications. The Standard Dimension Ratio (SDR) is the ratio of the outside diameter (OD) of the pipe to its minimum wall thickness. All CIPP wall thicknesses, SDRs by diameters, and depth ranges corresponding to the requirements of the Contract Documents, must be submitted to the Engineer for approval prior to installation.
 - 3. The Contractor shall furnish copies of the manufacturer's brochures giving a complete description of the product proposed, its physical and chemical composition, the same for the thermosetting resin or epoxy hardener.
 - 4. Pre- and post-installation videos and logs per Article 3.03 shall be submitted during the course of work.
 - 5. Catalyst system and resin/catalyst ratio.
 - 6. The proposed curing schedules and process shall be approved by the resin manufacturer in writing. Cure schedules shall include specific information on curing procedures, "post exothermic cooking times" duration and "cool down" procedures – all to be approved by the resin manufacturer in writing.

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7. The Contractor shall submit a Certificate of Authenticity from the resin manufacturer for each shipment to the wet-out facility to include the date of manufacture and Heat Distortion Temperature. This information shall be submitted before the manufacture or installation of any CIPP.
- B. The manufacturer shall submit written certification that the lining system complies with all applicable requirements of these Specifications.
- C. The Contractor shall submit its proposed plan for ensuring that the finished and installed CIPP meets the minimum thickness requirements. The plan shall include detailed inversion procedures to reduce stretching and resin loss and to minimize shrinkage.

1.05 Warranty

The Contractor shall warrant all work and materials installed under this Contract for five years from the date of final acceptance. All CIPP liners shall have a minimum design and service life of 50 years. The date of final acceptance shall be the date final payment is made to the Contractor.

Part 2 Products

2.01 Resins

- A. The resin for CIPP installed under this Contract shall be a Standard Polyester Resin or Enhanced Polyester Resin unless otherwise directed by the Engineer due to site-specific field conditions and/or design requirements.
- B. Standard Polyester Resins
 1. The resin used shall be a corrosion resistant isophthalic polyester specifically designed for the CIPP being installed. Only premium, virgin, non-recycled resin shall be used. The resin shall be manufactured under ISO 9001 certified procedures.
 2. The resin shall have been tested according to ASTM D2990, D5813, and F1216 by accredited, third-party testing facilities. Results of these tests shall be made available to Engineer upon request.
 3. The resin vendor must be able to reference the corrosion scale with the resin itself having a heat deflection temperature greater than 212 degrees Fahrenheit.
- C. Enhanced Polyester Resins
 1. The resin used shall be a corrosion resistant enhanced thixotropic, medium reactivity, high viscosity, and rigid, chemical resistant isophthalic resin. These resins contain a mineral filler to enhance mechanical properties and are specifically formulated for use in the cured-in-place pipe (CIPP) industry.

2. The resin shall have physical and chemical properties equal to those of Reichhold PolyLite® 33420-E and shall have been tested according to ASTM D 2990, D 5813 and F 1216 by accredited third party testing facilities. Results of these tests shall be made available to the Engineer upon request.
 3. The resin must be manufactured under ISO 9001 certified procedures. The resin vendor must be able to reference the corrosion scale with the resin itself having a heat deflection temperature greater than 224 degrees Fahrenheit. Only premium, non-recycled resins will be accepted.
- D. Resins shall be shipped directly from the resin manufacturer's facility to the CIPP wet-out facility. Resins shall not be sent to any intermediate mixing facility. Copies of the shipping documents from the resin manufacturer shall be submitted to the Engineer indicating dates of shipment, originating and receiving locations.

2.02 Catalyst Systems

- A. The catalyst system shall be made up of a primary catalyst and a secondary catalyst. The primary catalyst shall be added at a maximum of 1% of the resin volume by weight unless otherwise approved by the Engineer. The secondary catalyst shall be added at a maximum of 0.50% of the resin volume by weight unless otherwise approved by the Engineer.
- B. Resins, catalysts and resin/catalyst mix ratios shall not be changed or altered during this Contract unless specifically approved by the Engineer in writing.

2.03 Liner Tube

- A. The tube shall consist of one or more layers of absorbent non-woven felt fabric and meet the requirements of ASTM F1216.
- B. The acceptable liner tube shall be constructed under ISO 9001 certified procedures. Proper certification shall be provided prior to the manufacture or installation of any CIPP.
- C. The tube shall be constructed to withstand installation pressures, have sufficient strength to bridge missing pipe, and stretch to fit irregular shaped pipe sections.
- D. The wet-out tube shall have a uniform thickness that when compressed at installation pressures shall meet or exceed design thickness.
- E. The tube shall be manufactured to a size that when installed shall tightly fit the internal circumference and length of the original pipe. In the event that under-sized pipe is present, liner tube shall be manufactured so that overlap folds or wrinkles do not occur. Allowances shall be made for circumferential stretching during inversion.
- F. The outside layer of the tube, before installation, shall have an impermeable polyurethane or polyethylene plastic coating. This coating shall be an impermeable, flexible membrane that shall contain the resin and facilitate monitoring of resin saturation during resin impregnation. This coating shall form the inner layer of the

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finished pipe and is required for enhancement of corrosion resistance, flow and abrasion properties.

- G. The tube shall be homogeneous across the entire wall thickness containing no intermediate or encapsulated layers. No material may be included in the tube that may cause de-lamination in the cured liner, and no dry or unsaturated areas or layer shall be evident.
- H. The wall color of the interior liner surface after installation shall be such that a clear, detailed inspection with closed-circuit television equipment may be conducted.
- I. The outside of the tube shall be marked for distance at regular intervals not to exceed 10 feet. The tube shall be stamped with the manufacturer's name or identifying symbol in regular intervals not to exceed 20 feet.
- J. The minimum length shall be that deemed necessary by the Contractor to effectively span the distance between manhole sections of the segment to be lined unless otherwise specified. The line lengths shall be verified in the field before impregnation of the tube with resin.

2.04 CIPP Design

A. Liner Thickness

- 1. The CIPP thickness shall be designed in accordance with the applicable provisions of ASTM F 1216 and D 2412 for "fully deteriorated gravity pipe conditions" and the following design conditions:
 - a. AASHTO HS20-44 Live Load, whether under streets or not. The live load will vary based on depth of pipe.
 - b. A dead load based on the depth of pipe shown on the Drawings and a soil modulus of elasticity of 1,000 psi, soil weight of 120 pounds per cubic foot and a coefficient of friction of $Ku'=0.130r$.
 - c. Short-term flexural modulus and long-term modulus when tested in accordance with ASTM D790.
 - i. Standard Polyester: 250,000 psi and 125,000 psi, respectively
 - ii. Enhanced Polyester: 400,000 psi and 200,000 psi, respectively
 - d. Minimum Flexural Stress of 4,500 psi, when tested in accordance with ASTM D790.
 - e. Safety factor of 2.0.
 - f. Groundwater height at the ground surface.
 - g. Maximum pipe ovality of 2%.

- h. Poisson ratio of 0.3.
- i. Enhancement factor (K) of 7.
- j. Service temperature range shall be 40 to 140 degrees F.
- k. Maximum long-term deflection shall be 5%.
- l. Any and all other site specific external loads. It is the Contractor's responsibility to determine the site specific external loads.

2. Minimum Acceptable Pipe Thickness

Pipe Diameter (Inches)	Depth to Invert (Feet)	Minimum Thickness (mm)
8	0-17	6.0
10	0-9	6.0
10	9.1-16	7.5

- 3. The liner thickness shall be the greater of the calculated thickness to meet the design requirements of Paragraph 1 above or the minimum acceptable pipe thickness from Paragraph 2 above. If calculations require a thicker wall, round to the next higher multiple of 1.5 mm currently in manufacture.
 - 4. All references to liner thickness shall be defined as total thickness after installation and after curing is complete.
- B. The finished CIPP shall provide a uniform smooth interior wall surface with a Manning "n" coefficient of 0.011.

Part 3 Execution

3.01 General

- A. All reconstruction of existing gravity sewers using an approved CIPP product and installer shall be performed in strict accordance with this Specification and ASTM F1216.
- B. Pull-in and inflate methods of CIPP installations (reference ASTM F1743) will not be acceptable without written approval by the Engineer.
- C. The Contractor shall carry out his operations in strict accordance with all applicable OSHA standards. Particular attention is drawn to those safety requirements involving work on an elevated platform and entry into a confined space and the operation of high-pressure air/steam equipment.
- D. The Contractor shall be responsible for obtaining water necessary for cleaning, inversion and other work items requiring water. The Contractor shall be responsible for

obtaining a hydrant use permit from Tennessee American Water.

- E. The Contractor shall be responsible for locating and access to all manholes.
- F. All surfaces, which have been damaged by the Contractor's operations, shall be restored to a condition at least equal to that in which they were found immediately prior to the beginning of the Contractor's operations. Suitable materials and methods, acceptable to the Engineer, shall be used for such restoration. The restoration of existing property or structures shall be performed as promptly as practicable and shall not be left until the end of the construction period. The cost for correcting damages resulting from the Contractor's actions shall be the responsibility of the Contractor.
- G. The tube shall be fabricated to a size that, when installed, will neatly fit the internal circumference of the conduit(s) designated for CIPP. Allowance shall be made for the circumferential stretching during insertion of the tube.
- H. The Contractor shall be responsible for determining the minimum length to effectively span the distance from the manhole to manhole and shall verify the length of the fabric tube in the field before the tube is either cut to length or wet-out with resin. The tube may run through one or more manholes with the approval of the Engineer.
- I. Protruding Service Connections: When service connections protrude into the existing pipe, the Contractor shall remove the protruding portion of the service connection to be flush with the inside pipe wall or to the satisfaction of the Engineer. Removal of the protruding portion of the service connection shall be accomplished using a television camera and internal cutting device, which shall not damage the collection line or the portion of the service line to remain in place. This work shall be accomplished prior to the installation of the CIPP.
- J. Traffic Control: The Contractor shall be responsible for traffic control during the course of each phase of the Work. Prior to beginning Work, Contractor shall submit a traffic control plan for each section of Work for the review and approval. It is the intent that this Work is to be accomplished with as little disturbance to traffic, private property, and the public as is reasonably possible, consistent with timely completion thereof. The traffic control plan shall reflect such requirements where applicable. Signs, signals, and detours shall conform to the local and state requirements for streets and highways. The Contractor shall have and maintain on site a sufficient supply of traffic cones and other traffic signaling devices, including trained and properly equipped flagmen, to safely control all traffic through the work zone(s). Road closures and / or detours will require advance scheduling and prior approval by the Engineer.

3.02 Daily Work Schedule

Insofar as is possible, Work shall be so scheduled that the lining of the pipe, curing of the tube, and the reinstatement of service connections can be accomplished in a single working day or shift. Prior approval must be obtained from the Engineer if work is to be performed at night or on weekends to minimize traffic disturbance. At the end of each working day, temporary tie connections shall be made between the relined section of pipe and the existing system and the plug in the upstream manhole removed, but not

before the section being lined has been properly cured in accordance with the manufacturer's instructions and all service connections are reinstated. In some instances, it may be necessary to bypass effluent from service connections.

3.03 By-Pass Pumping

- A. The installation methodology contemplated requires the temporary blocking and back-ups of sewers and sewage. Contractor shall be responsible to limit the extent and duration of such blockages and back-ups so that overflows and spillage onto public or private property and into storm sewers, waterways, and streets does not occur. In the event that such spillage or overflows do occur during the course of or as a result of the Work, the Contractor performing the Work shall immediately eliminate the spillage or overflow and, as necessary, remove the blockage and eliminate the back-up. On elimination of the spillage or overflow, the Contractor is to clean up and disinfect the area. Work to stop or contain such events is to be deemed emergency in nature and sufficient justification for total mobilization of resources, the use of overtime or double time, and any other reasonable measures to assure correction of the problem without delay. Damages arising from blockages, back-ups, spillage, or overflows of sewage during the course of the Work or because of the Work shall be the sole responsibility of the Contractor.
- B. Sewage flow shall be pumped around segments during the installation and testing of cured-in-place pipe, the televising of sewers and lateral service reinstatement.
- C. Pumping equipment shall have the capacity to convey 100% of peak flows around the construction area. The flow shall be intercepted at the upstream end of the construction area and shall be pumped through temporary piping of adequate size. The flow shall be discharged into a manhole on the downstream side of the construction area, thus by-passing the sewer segment(s) under construction. The Contractor shall be required to contact all residential and commercial customers whose service lines connect to the sewer main being bypassed and inform them that they will be temporarily out of service. The Contractor shall also advise those customers against water usage until the mainline is back in service. After completing the necessary work on the main line to allow its reuse, the Contractor shall advise those customers that the sewer main is back in service. The Contractor shall maintain a high degree of professionalism, both in workmanship and appearance, at all times. Should a condition arise that the Contractor cannot restore service within 12 hours of service interruption; the Contractor shall make provisions for pumping all flows within the service interruption area at no cost to the Owner.
- D. Open channels or trenches shall not be used to convey flow.
- E. A standby pump of the same capacity shall be required on site.
- F. The Contractor is responsible for paying all fines imposed for overflows or spills during construction.

3.04 Preliminary Installation Requirements

- A. Contractor shall notify the Engineer prior to beginning cleaning activities and pre-

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construction closed-circuit televising (CCTV) inspection. Contractor shall plan cleaning and pre-construction CCTV inspection activities far enough in advance of CIPP lining activities to allow Engineer time to review any critical damage reports that may develop from the CCTV inspection results.

- B. Prior to CIPP installation, the pipe shall be cleaned to the satisfaction of the Engineer in accordance with Section 33 01 30.14 of these Specifications.
- C. Debris Disposal: All debris cleaned from the pipe shall be removed and disposed of at the Owner's Wastewater Treatment Plant. Debris shall not be allowed to wash into any other pipe segment either upstream or downstream from the pipe segment being cleaned. All waste disposal at the Owner's Wastewater Treatment Plant shall meet the requirements set forth by the Owner including dewatering of waste prior to disposal.
- D. Pre-Installation CCTV Video Inspection: The section of sewer designated for CIPP shall to be televised its full length using a remote television camera in accordance with Section 33 01 30.16 of these Specifications and shall be submitted to the Engineer for review.

3.05 Resin Impregnation of the CIPP Tube (Wet-Out)

The Contractor shall designate a location where the tube shall be impregnated or "wet out" with resin, using distribution rollers and a vacuum impregnation system to thoroughly saturate the tube's felt fiber prior to installation in the field. The impregnated tube shall be free of pinholes, resin voids and other defects. If the cured-in-place pipe is impregnated at the manufacturing plant, it shall be delivered to the job site in a refrigerated truck, and remain refrigerated (below 45° Fahrenheit or as specified by the resin manufacturer) prior to installation to prevent premature curing. The flexible tube shall be vacuum impregnated with resin under controlled conditions or by such other means provided such means can assure thorough resin impregnation to the full satisfaction of the Engineer. The volume of resin used shall be sufficient to fill all voids in the tube material at normal or required thickness and diameter. The volume of resin shall be adjusted by adding seven to ten percent excess resin for the change in resin volume due to polymerization and allow for any migration of resin into the cracks and joints in the original pipe.

3.06 Inversion of CIPP

- A. The preferred method of installation and cure for CIPP shall be inversion using hydrostatic head (water column) pressure and curing with heated, circulated water. The use of pressurized air inversion/steam cure will be considered on a case-by-case basis only. The Contractor shall submit a written request for the use of pressurized air/steam in sewer segments where the Contractor feels that the utilization of pressurized air/steam will be beneficial to the Owner. The Contractor shall not assume in any case that the use of pressurized air/steam is acceptable to the Owner without prior written authorization from the Owner. The impregnated tube shall be inverted through an existing manhole or other approved access point utilizing a hydrostatic water column until it has fully traversed the designated line length and the inversion face breaches the destination manhole or termination point.

Contractor must have written approval from the Engineer prior to using pressurized air for inversion. The fluid column shall have been adjusted and maintained to be sufficient to cause the impregnated tube to hold tight against the existing pipe wall, produce dimples at side connections, and flared ends at the manholes. Lubricant during inversion shall be used as necessary in accordance with the CIPP manufacturer's recommendations. The lubricant used should be a nontoxic, oil-based product that has no detrimental effects on the tube, heating source and pump system, will not support the growth of bacteria, and will not adversely affect the fluid to be transported. Lubricant shall be used in processes with permeable coatings. Thermocouples shall be placed at the top and bottom interface of termination manhole which is furthest from the heat source for monitoring temperature during the cure cycle. Care should be taken during tube installation not to over-stress the fabric fiber and to minimize longitudinal stretch, resin loss and thinning of the liner wall.

- B. Before the inversion begins, the tube manufacturer shall submit to the Contractor, and the Contractor to the Engineer, the minimum pressure required to hold the tube tight against the host pipe and the maximum allowable pressure so as not to damage the tube.
- C. When using pressurized air, particular attention should be given to the maintenance of the minimum required "finished and installed" thickness of the CIPP.
- D. Once the inversion has started, pressure shall be maintained between the minimum and maximum pressures until the inversion has been accomplished.

3.07 Curing

A. Using Circulated Water

- 1. A suitable source of heat and water recirculation equipment is required to circulate heated water throughout the pipe. The equipment shall be capable of delivering hot water throughout the inverted tube to uniformly raise the temperature required to affect a cure of the resin.
- 2. Initial cure will occur during temperature heat-up and is completed when exposed portions of the new pipe appear to be hard and sound and the thermocouples indicate that the temperature is of a magnitude to realize an exotherm or cure in the resin. After initial cure is reached, the temperature should be raised to the post-cure temperature recommended by the resin manufacturer. Post-cure temperature should be held for a period as recommended by the resin manufacturer, during which time the recirculation of the water and cycling of the heat source to maintain the temperature continues.
- 3. Prior to any inversion, the Contractor shall provide a Post-Cure Hold Time and Temperature Table. This table shall indicate the minimum time and temperature the inverted tube will be held at in order to achieve desired physical properties. The resin manufacturer shall certify both the time and temperatures presented in the table.

4. Curing must take into account the existing pipe material, the resin system, and the ground conditions (temperature, moisture level, and thermal conductivity of the soil).

3.09 Cool-Down

Cool-down of the cured pipe liner shall be in accordance with the manufacturer's recommendations. Care should be taken during the cool-down process so as to minimize shrinkage of the CIPP.

3.10 Termination and Sealing at Manhole Outlets

- A. Termination of the cured-in-place pipe at the manhole shall be completed by trimming the inverted pipe end back in accordance with the CIPP manufacturer's recommendations and to the satisfaction of the Engineer
- B. No annular space shall be visible between the CIPP and manhole wall. If, in the judgment of the Engineer the CIPP does not fit tightly against the sewer main at its termination point(s), the void between the host pipe and the CIPP shall be sealed by filling it with a resin/epoxy mixture compatible with the CIPP approved by the Engineer or by utilizing manhole end seals or hydro-tite gaskets, all at no additional cost to the Owner.

3.11 Testing of CIPP

- A. The Contractor shall prepare CIPP Acceptance Tests for each CIPP line segment during the duration of this Contract. The samples shall be for laboratory determination of flexural strength, flexural modulus and wall thickness for each test sample. These three individual analyses shall comprise one completed test. All samples shall be collected per the sampling protocols set forth in ASTM F1216.
- B. For each line segment, from the point most distant from the heat source, the Contractor shall remove one restrained sample of the installed liner at least 12 inches in length for testing. For sewers 15 inches and larger, plate samples may be taken and cured in the same water as the installed CIPP. For each sample taken, the Contractor shall cut and deliver a 12 inch in length representative sample (taken at least 2 inches from the end of the specimen) to the Engineer. The sample delivered to the Engineer shall be clearly labeled with the date of installation and sewer segment and removed from any restraining mold. The samples shall be taken in the presence of the Engineer. The Engineer may return such samples to the Contractor for disposal.
- C. The tests shall be used to verify that the installed CIPP meets these Specifications. CIPP thickness shall be measured in accordance with ASTM D5813. Flexural properties shall be determined per ASTM D790. The Contractor shall label and date all samples and deliver the samples directly to the Engineer. All testing shall be performed by an independent, ASTM-certified testing laboratory of Engineer's

designation. Payment to the Contractor shall be withheld pending the Engineer's acceptance of the CIPP test results. The Laboratory costs will be paid in accordance with the terms and conditions of Cash Allowances specified elsewhere.

- D. Any liner that does not meet the specified strength and/or thickness requirements, regardless of the amount below the specified requirements, shall be corrected by the Contractor in a manner approved by the Engineer at no additional cost to the Owner. The Engineer's decision on how to correct deficient CIPP installations shall be final. Options for correcting deficient liners that may be considered by the Engineer include removing the liner and re-lining the sewer, excavating and replacing the sewer from manhole to manhole, or providing the Owner with a credit. The primary option that will be considered will be to re-line the sewer. Credits will only be authorized for CIPP that does not meet required thickness. If a credit is acceptable to the Owner, the credit shall be calculated by multiplying the bid price by the percent that the liner thickness is below the required installed thickness as follows:

$$\text{Credit} = (1 - \text{Installed CIPP thickness/required CIPP thickness}) \times \text{bid price}$$

- E. The Contractor shall not assume a credit will be acceptable to the Owner in any case.

3.12 Lateral Service Reconnection - Internal

- A. After the CIPP has been cured, the existing service connections and laterals shall be reinstated. In general, reinstatement of service connections and laterals shall be accomplished internally, without surface excavation, using a remote control cutting device equipped with a television monitor. Reopened services shall be wire brushed to the satisfaction of the Engineer. In some cases, remote reinstatement may not be possible. In these instances, reconnection by excavation as specified below is acceptable. All connections must be reinstated by at least 95-percent of the original opening. Holes cut outside the lateral opening or oversized cutting (more than 100%) must be repaired at the Contractor's expense. Particular attention shall be given to the lower quadrant of the opening to ensure that no accumulation of solids or debris will occur at the service tie-in.
- B. All capped or factory plugged service connections shall not be opened unless otherwise directed by the Engineer.

3.13 Lateral Service Reconnection By Excavation

- A. General: Sewer lateral house connections accomplished by excavation shall be connected to the pipe by dual-strapped saddles. The Contractor shall connect existing sewer house lateral service pipe to the saddle using a flexible coupling. After connection to the saddle, the sewer house connection pipe shall have a slope toward the newly lined sewer equal to the pre-existing on the lateral pipe or a minimum of two percent.
- B. Execution

Cured-In-Place Pipe (CIPP)

1. The Contractor shall excavate the area of the lateral connection so that the host pipe and existing connection is exposed. The host pipe shall be broken back or removed in such a manner that the new CIPP liner is exposed without causing damage to the liner.
2. An appropriately sized hole acceptable to the Engineer shall be cut into the CIPP using a circular hole cutter. Hanging or loose cuttings shall be removed so that the newly opened hole is smoothed around its edges.
3. A sealant compatible with CIPP and acceptable to the Engineer shall be liberally applied around the newly cut hole to form a watertight seal between the CIPP liner and PVC pipe saddle used to make the connection.
4. A dual-strap PVC pipe saddle acceptable to the Engineer shall be secured to the CIPP in accordance with the manufacturer's recommendations.
5. Before the service lateral pipe is connected to the saddle, the Contractor shall hand wipe a hydrogen sulfide resistant composite epoxy resin mixture inside the saddle where the saddle and CIPP surfaces meet to ensure a watertight seal.
6. The Contractor shall connect the lateral service pipe to the saddle according to the manufacturer's recommendations and in a manner acceptable to the Engineer.

3.14 Final Acceptance

- A. Post-installation videos shall be conducted and submitted to the Engineer in accordance with Section 33 01 30.16 of these Specifications. The finished CIPP shall be continuous over the length of pipe between two manholes and shall be an impermeable, joint-less conduit, free from visual defects such as foreign inclusions, dry spots, pin holes, lifts, or delamination.
- B. Wrinkles in the CIPP (other than minor, longitudinal pressure wrinkles) will not be acceptable. The Engineer shall determine as to the acceptability of pressure wrinkling with that decision being final.
- C. After curing of the resin is completed, the hardened CIPP shall extend from manhole to manhole of the section designated providing a structurally sound, corrosion-resistant, watertight conduit that excludes exfiltration and infiltration, is tight-fitting within the existing pipe, and is free of voids or annular spaces between the CIPP and the existing pipe walls. K-Factor for tightness shall equal 7.0 or greater. All terminations into manhole walls shall be watertight at the time of final inspection. No annular space shall be visible between the CIPP and manhole wall.
- D. The finished pipe must be such that when the thermosetting resin cures, the total wall thickness will be a homogeneous, monolithic felt and resin composite matrix that will be chemically resistant to withstand internal exposure to domestic sewage. When cured, the CIPP must form a mechanical bond with the host pipe.

3.15 Customer Notifications

- A. The Contractor shall contact all residential and commercial customers whose service is to be interrupted by rehabilitation work or who may be affected by upstream or downstream rehabilitations. The customer shall be informed that they will be temporarily out of service. This notification shall be made a minimum of 24 hours prior to beginning rehabilitation work.
- B. For all residences the Contractor shall leave a door hanger detailing the service outage and providing contact information. Door hanger samples shall be submitted to the Engineer for review and approval. The Contractor shall also advise those customers against water usage until the mainline and lateral are back in service. After completing the necessary work on the main line and lateral to allow their reuse, the Contractor shall advise those customers that the sewer is back in service. Should a condition arise that the Contractor cannot restore service within 12 hours of service interruption; the Contractor shall make provisions for pumping all flows within the service interruption area at no cost to the Owner.
- C. All customer notification documentation and procedures shall meet the requirements of the Owner.

END OF SECTION

**HIGHLAND PARK SEWER REHABILITATION
CONTRACT NUMBER W-12-030-201**

CITY OF CHATTANOOGA, TENNESSEE

Sealed Bids for furnishing all materials, labor, tools, equipment and appurtenances necessary for the construction of the Highland Park Sewer Rehabilitation will be received at the City of Chattanooga at City Hall, Purchasing Department, Suite G13, 101 East 11th Street, Chattanooga, TN 37402, until 2:00 p.m., local time, on June 7, 2016, and then at said office publicly opened and read aloud.

The work to be bid on is as follows: Approximately 29,175 feet of cured in place pipe sewer rehabilitation, of which approximately 2,925 feet is 10-inch and 26,250 feet is 8-inch; rehabilitation of approximately 710 vertical feet of manholes utilizing cementitious lining; reinstatement of service laterals with approximately 418 by robotic means; furnishing and installing approximately 36 chimney seal manhole inserts, and approximately 18 point repairs, ranging in size from 24-inch to 8-inch diameter pipe. Approximately 145 feet of 8-inch diameter gravity sewer will be replaced in same trench via open cut.

The allotted time for construction is 221 calendar days.

A Pre-Bid Conference is scheduled for May 12, 2016 at 10:00 A.M. local time, in the Training Facility, Moccasin Bend Wastewater Treatment Plant, 455 Moccasin Bend Road, Chattanooga, TN 37405. Bidder attendance is encouraged but not mandatory.

The Instructions to Bidders, Bid Form, Contract Agreement, Drawings, Specifications and forms of Bid Bond, Performance Bond, Payment Bond and other Contract Documents may be examined at the following:

City of Chattanooga
Purchasing Department
101 E. 11th Street, Suite G13
Chattanooga, Tennessee 37402
Phone: 423-643-7230
Fax: 423-643-7244
bidinfo@chattanooga.gov

Volkert, Inc.
1428 Chestnut Street STE 110
Chattanooga, TN 37
Phone Number 423-842-3335

Builder's Exchange of Tennessee:

Nashville Office
2322 Winford Ave
Nashville, TN 37211

Knoxville Office
300 Clark Street
Knoxville, TN 37921

Copies of Contract Documents may be purchased from 8:00 am to 4:30 pm, Monday through Friday, at the office of the City of Chattanooga Purchasing Department, 101 East 11th Street, Suite G13, Chattanooga, TN 37402, phone (423)643-7230, Fax (423) 643-7244, bidinfo@chattanooga.gov. Cost of Contract Documents is \$100.00 per set. No part of the purchase price will be refunded.

Each Bid must be accompanied by a Bid Bond, prepared on the form of Bid Bond attached to the Contract Documents or a Surety Company's Standard Bid Bond, duly executed by the Bidder as principal and having as surety thereon a surety company licensed to do business in the State of Tennessee and listed as a certified company in the latest issue of U.S. Treasury Circular 570, in the amount of five percent of the Bid.

No bid may be withdrawn within 120 calendar days after the scheduled time for receipt of bids.

DAVIS- BACON ACT and AMERICAN IRON AND STEEL REQUIREMENTS

This project is being funded by a State Revolving Fund loan on or after 2010 EPA Fiscal Year. The loan recipient must be in compliance with all applicable Davis-Bacon Act and American Iron and Steel requirements.

DISADVANTAGED BUSINESS ENTERPRISES (DBE) REQUIREMENTS

Any contract or contracts awarded by the Owner through this advertisement for bids will be funded by a State Revolving Fund (SRF) loan from the State of Tennessee. State and Federal funds will be involved in this Project and, as a result, Bidders must comply with the SRF Loan Program's Disadvantaged Business Enterprises (DBE) requirements, including contacting a minimum of 10 qualified DBE sub-contractors, professional service providers, vendors, and/or suppliers by certified mail to solicit bids. The apparent successful Bidder must submit to the Owner copies of the certified letters and return receipts prior to Contract award. Neither the State of Tennessee nor any of its departments, agencies, or employees is or will be a party to this Invitation for Bids or any resulting contract(s) awarded by the Owner.

SPECIAL NOTICE TO DISADVANTAGED BUSINESS ENTERPRISES (DBE) FIRMS

All qualified Disadvantaged Business Enterprises (DBE) firms desiring to bid as a General Contractor, sub-contractor, professional service provider, supplier, or equipment vendor are encouraged to contact Volkert, Inc., 1428 S. Chestnut Street Suite 110, Chattanooga, TN, 37402, (423)842-3335, to review bidding/contract documents. Qualified Disadvantaged Business Enterprises (DBE) firms may also contact City of Chattanooga Purchasing Department at the address above, in order to obtain a list of prospective bidding General Contractors or to obtain copies of bidding/contract documents.

All bidders must be licensed and shall comply with all requirements of the State of Tennessee Contractor's Licensing Act. Visit City website at: www.chattanooga.gov/general-services/purchasing/bidssolicitations for specific contract information.

The City of Chattanooga is an Equal Opportunity Employer.

Any contract or contracts awarded under this Advertisement for Bids are expected to be funded with local funds in addition to funds indicated elsewhere.

The Owner will in no way be liable for any costs incurred by any bidder in the preparation of its Bid in response to this Invitation to Bid.

The successful Bidder for this Contract will be required to furnish a satisfactory Performance Bond and Payment Bond each in the amount of 100 percent of the Bid.

The Owner reserves the right to reject any or all Bids, to waive informalities and to readvertise.

CITY OF CHATTANOOGA, TENNESSEE

RECOMMENDED FOR APPROVAL:

APPROVED:

William C. Payne, P.E.
City Engineer
Department of Public Works

Justin C. Holland
Deputy Administrator
Department of Public Works

END OF SECTION

THIS AGREEMENT is by and between City of Chattanooga, Tennessee ("Owner") and _____

("Contractor")

Owner and Contractor agree as follows:

ARTICLE 1 – WORK

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

Highland Park Sewer Rehabilitation
Contract # W-12-030-201

ARTICLE 2 – THE PROJECT

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

Highland Park Sewer Rehabilitation

ARTICLE 3 – ENGINEER

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

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

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

4.02 *Days to Achieve Substantial Completion and Final Payment*

- A. The Work will be substantially completed within 200 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 221 days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding

the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner \$500.00 for each day that expires after the time specified in Paragraph 4.02 above for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner \$500.00 for each day that expires after the time specified in Paragraph 4.02 above for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 5 – CONTRACT PRICE

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

A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

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

6.02 *Progress Payments; Retainage*

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 25th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions.

a. 95 percent of Work completed (with the balance being retainage); and

b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

6.03 *Final Payment*

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

ARTICLE 7 – INTEREST

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

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

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

- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to __, inclusive).
 - 2. Performance bond (pages ____ to ____, inclusive).
 - 3. Payment bond (pages ____ to ____, inclusive).
 - 4. General Conditions (pages ____ to ____, inclusive).
 - 5. Supplementary Conditions (pages ____ to ____, inclusive).
 - 6. Specifications as listed in the table of contents of the Project Manual.
 - 7. Drawings as listed on the Drawing Index, with each sheet bearing the following general title: Highland Park Sewer Rehabilitation.
 - 8. Addenda (numbers ____ to ____, inclusive), incorporated herein.
 - 9. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages ____ to ____, inclusive).
 - 10. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.

- D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

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

10.02 Assignment of Contract

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

10.03 Successors and Assigns

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

10.04 Severability

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

10.05 Contractor's Certifications

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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

This Agreement will be effective on ____ day of _____, 20 ____, (which is the Effective Date of the Agreement).

OWNER:

CONTRACTOR

City of Chattanooga, Tennessee

By: _____

By: _____

Title: Public Works Administrator

Title: _____

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

Attest: _____

Attest: _____

Title: City Finance Officer

Title: _____

Address for giving notices:

Address for giving notices:

City Hall

101 East 11th Street

Chattanooga, Tennessee 37402

CITY FINANCE OFFICER'S CERTIFICATE

I do hereby certify that the funds required to be paid by the City under this contract have been appropriated or a loan authorized and have been encumbered and will be available as needed for payment.

This _____ day of _____, 20 ____.

City Finance Officer

CITY ATTORNEY'S APPROVAL

This contract approved as to form and legality this the ____ day of _____, 20 ____.

City Attorney

This document was prepared in part from material (EJCDC C-520 Suggested Form of Agreement Between Owner and Contractor for Construction Contract (Stipulated Price)) which is copyrighted as indicated below:

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1420 King Street, Alexandria, VA 22314-2794
(703) 684-2882
www.nspe.org

American Council of Engineering Companies
1015 15th Street N.W., Washington, DC 20005
(202) 347-7474
www.acec.org

American Society of Civil Engineers
1801 Alexander Bell Drive, Reston, VA 20191-4400
(800) 548-2723
www.asce.org

Associated General Contractors of America
2300 Wilson Boulevard, Suite 400, Arlington, VA 22201-3308
(703) 548-3118
www.agc.org

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Part 1 General

1.01 Description

- A. The work to be performed under this Contract shall consist of furnishing all labor, materials, tools, equipment and incidentals and performing all work required to construct complete in place and ready to operate:
1. Approximately 29,175 feet of cured in place pipe sewer rehabilitation, of which approximately 2,925 feet is 10-inch and 26,250 feet is 8-inch; rehabilitation of approximately 710 vertical feet of manholes utilizing cementitious lining; reinstatement of service laterals with approximately 418 by robotic means; furnishing and installing approximately 36 chimney seal manhole inserts, and approximately 18 point repairs, ranging in size from 24-inch to 8-inch diameter pipe. Approximately 145 feet of 8-inch diameter gravity sewer will be replaced in same trench via open cut.
- B. All work described above shall be performed as shown on the Drawings and as specified.

1.02 Project Location

The equipment and materials to be furnished will be installed at the locations shown on the Drawings.

1.03 Quantities

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

1.04 Partial Owner Occupancy

The existing facilities to which these improvements are being made will continue operation during the period of construction. There shall not be any interruption in service. The Contractor is responsible for fines assessed due to his activities.

END OF SECTION

General Decision Number: TN160146 05/06/2016 TN146

Superseded General Decision Number: TN20150146

State: Tennessee

Construction Type: Heavy
Including Water and Sewer Line Construction

Counties: Hamilton and Sequatchie Counties in Tennessee.

HEAVY CONSTRUCTION PROJECTS (including sewer/water construction).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016
1	05/06/2016

* ELEC0175-012 01/01/2016

Hamilton County

	Rates	Fringes
ELECTRICIAN.....	\$ 29.81	13%+7.70

ELEC0429-008 09/01/2015		

Sequatchie County

	Rates	Fringes
Electrician.....	\$ 24.84	11.90

ENGI0917-022 05/01/2015		

	Rates	Fringes
Operating Engineers:		
Bulldozer and Crane.....	\$ 26.72	9.90
Forklift.....	\$ 24.53	9.90

LABO0846-001 05/01/2013		

	Rates	Fringes
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LABORER: Common or General.....	\$ 13.85	4.90
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SUTN2009-144 12/02/2009

	Rates	Fringes
LABORER: Flagger.....	\$ 8.73	0.00
LABORER: Pipelayer.....	\$ 11.68	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 16.82	0.00
OPERATOR: Loader.....	\$ 13.50	0.00
TRUCK DRIVER: Dump Truck.....	\$ 10.76	0.00

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification
and wage rates that have been found to be prevailing for the
cited type(s) of construction in the area covered by the wage
determination. The classifications are listed in alphabetical
order of "identifiers" that indicate whether the particular
rate is a union rate (current union negotiated rate for local),
a survey rate (weighted average rate) or a union average rate
(weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed
in dotted lines beginning with characters other than "SU" or
"UAVG" denotes that the union classification and rate were
prevailing for that classification in the survey. Example:
PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of
the union which prevailed in the survey for this
classification, which in this example would be Plumbers. 0198
indicates the local union number or district council number
where applicable, i.e., Plumbers Local 0198. The next number,
005 in the example, is an internal number used in processing
the wage determination. 07/01/2014 is the effective date of the
most current negotiated rate, which in this example is July 1,
2014.

Union prevailing wage rates are updated to reflect all rate
changes in the collective bargaining agreement (CBA) governing

this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION