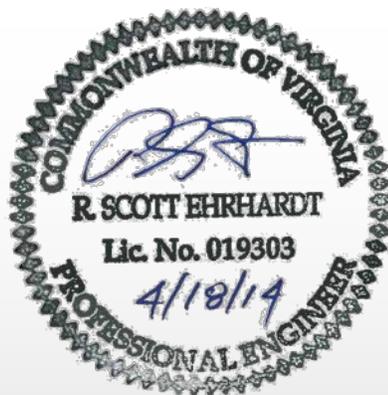


Smith River Interceptor CCTV Inspection City of Martinsville

Specifications

April 2014



Prepared by:
Dewberry
551 Piney Forest Road
Danville, Virginia 24540
434-797-4497



**CITY OF MARTINSVILLE UTILITIES
INVITATION FOR BID
April 16, 2014**

INSTRUCTIONS TO BIDDERS

This is a City of Martinsville Utilities Department (MUD) Invitation for Bid solicitation for competitive pricing for the requested goods/services. THIS IS NOT AN ORDER.

Submittal of Responses: Sealed written responses must be received by UPS, FedEx or hand delivered (Postal Mail is not accepted at this address) by the City of Martinsville until **May 23, 2014 by 2:00 p. m** at:

City of Martinsville
Karen Mays, Purchasing Manager
Central Warehouse
300 Fishel Street
Martinsville, VA 24112-3248

Or by postal mail sent to:

City of Martinsville
Karen Mays, Purchasing Manager
P.O. Box 1112
Martinsville, VA 24114-1112

Inquiries: Please direct all questions concerning this solicitation to Josh Powell, Dewberry (434) 549-8502

Copies of the Contract Documents may be obtained at Dewberry, 551 Piney Forest Road, Danville, VA 24540, upon payment of \$150 for each set. Partial sets will not be issued. Bidders returning plans and specs within 15 days of bid date in good condition will receive 100% deposit on first set and 50% deposit on remaining sets. Non-Bidders, Suppliers and Subcontractors will receive 50% on all sets returned within 15 days of bid date in good conditions.

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Specification:

- Section 100 Television Inspection of Gravity Mains
- Section 200 Sewer Cleaning
- Section 300 Manhole Inspection

I. PURPOSE:

The purpose of this Invitation for Bid is to solicit sealed bids to establish a contract through competitive bidding from qualified firms interested in providing gravity main and manhole inspection to MUD's sewer system along the Smith River Interceptor. The purpose of the sanitary sewer system inspection is to assess the overall condition of the pipe system and to identify and document deficiencies.

II. SCOPE OF WORK/DESCRIPTION OF ITEMS:

This assessment will provide the information by which MUD will evaluate and/or potentially rehabilitate the Smith River Interceptor. See the attached vicinity map found in the attachments of this document. MUD's Smith River Interceptor is composed of 36" and 42" gravity lines. Different gravity main material includes Corrugated Metal Pipes (CMP) and Reinforced Concrete Pipes (RCP). Segments of the line have slopes from 0.05 to 3.49%. Work will also include inspection of a portion of the mountain tunnel section of the line which includes approximately 1,850 ft of 42" RCP at a 0.08% slope.

The successful Contractor shall furnish all labor, equipment, and materials required to inspect up to six (6) miles of gravity main using CCTV under NASCCO PACP standards and approximately 95 manhole inspections under MACP inspection standards. These quantities could be adjusted at the Owner's discretion after initial inspection or based on actual field conditions. Inspection will be performed in a way to representatively assess the condition of the bottom of the gravity line. Cleaning followed by CCTV inspection will predominantly be used to assess pipe condition. However, as offered by the Contractor, sonar or laser inspection may also be requested by the Owner to assess pipe condition. Contractor shall be able to effectively execute the different inspection technologies.

III. PRE-BID CONFERENCE/INSPECTION OF JOB SITE:

A pre-bid conference/inspection of job site is not a requirement for this Invitation for Bid.

IV. GENERAL TERMS AND CONDITIONS:

- A. Anti-Discrimination: By submitting their bids/proposals, Bidders/Offerors certify to MUD that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and the Virginia Public Procurement Act. If the award is made to a faith-based organization, the organization shall not discriminate against any recipient of goods, services, or disbursements made pursuant to the contract on the basis of the recipient's religion, religious belief, refusal to participate in a religious practice, or on the basis of race, age, color, gender or national origin and shall be subject to the same rules as other organizations that contract with MUD to account for the use of the funds provided; however, if the faith-based organization segregates MUD funds into separate accounts, only the accounts and programs funded with MUD funds shall be subject to audit by MUD, (Code of Virginia).

In every contract over \$10,000 the provisions in 1 and 2 below apply:

1. During the performance of this contract, the Contractor agrees as follows:
 - a. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause.
 - b. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal opportunity employer.
 - c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.
 2. The Contractor will include the provisions of 1, above, in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each Subcontractor or Contractor.
- B. Anti-Trust: By entering into a contract, the Contractor conveys, sells, assigns, and transfers to MUD all rights, title and interest in and to all causes of the action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by MUD under said contract.
- C. Applicable Law and Courts: This solicitation and any resulting contract shall be governed in all respects by the laws of the Commonwealth of Virginia and any litigation with respect thereto shall be brought in the courts of the Commonwealth. The Contractor shall comply with applicable federal, state and local laws and regulations.
- D. Assignment of Contract: A contract shall not be assignable by the Contractor in whole or in part without the written consent of MUD.
- E. Authorized Distributors/Service Representatives: When submitting bids/proposals for proprietary items/services, all Bidders/Offerors shall certify in writing, upon request, that their company is an authorized manufacturer's representative.
- F. Changes: By written notice to the Contractor, MUD may from time to time make changes, within the general scope of the contract, in the goods or services to be provided by the Contractor, the method of shipment or packing, or the place of delivery or the place of performance. The Contractor shall promptly comply with the notice and shall make all subsequent shipments of goods and performance of services in conformity to the notice. If any such change causes an increase or decrease in the

Contractor's cost of performance or the time required for performance, an equitable adjustment in the contract price and/or the time allowed for performance of the contract shall be negotiated and the contract modified accordingly by written supplemental agreement. Any claim by the Contractor for adjustment under this clause must be asserted by written notice to the purchasing agent within (30) days from the date of receipt by the Contractor of the change notice. If the parties fail to agree to an adjustment, the question of an increase or decrease in the contract price or time allowed for performance shall be resolved in accordance with the procedures for resolving disputes provided by the disputes clause of the contract or, if there is none, in accordance with the disputes provisions of MUD procurement proceedings. Neither the existence of a claim, a dispute, submission of the dispute to MUD resolution process, litigation or any portion of this provision or changes shall excuse the Contractor from promptly proceeding with performance of the contract as changed by the notice.

- G. Clarification of Terms: If any prospective Bidder/Offeror has questions related to the specifications or solicitation document, the prospective Bidder/Offeror should contact the Procurement Official whose name appears on the face of the solicitation no later than (5) five business days before the due date. Any revisions to the solicitation will be made only by written amendment issued by the Procurement Office.
- H. Confined Space: Work involved at MUD may include entry into confined spaces. Any work involving entry into or work within a confined space is governed by the Virginia Confined Space Standard (1910.146) for general industry dated March 23, 1987. It is the responsibility of outside contractors performing work activities on HRSD property to comply with all facets of OSHA's Confined Space Entry Standard and to ensure the safety and health of their employees. MUD assumes no liability for the actions of non-MUD employees performing work at our facilities.
- I. Debarment Status: By submitting their bids/proposals, Bidders/Offerors certify that they are not currently debarred by MUD or the Commonwealth of Virginia from submitting bids or proposals on contracts for the type of goods and/or services covered by this solicitation, nor are they an agent of any person or entity that is currently so debarred.
- J. Default: In case of failure to deliver goods or services in accordance with the contract terms and conditions, MUD, after due oral and written notice, may procure them from other sources and hold the Contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies, which MUD may have.
- K. Delivery, Transportation and Packaging: Note delivery required, and in quoting, insures you indicate an accurate delivery date. All prices are to be FOB destination, as indicated. Additions for packing or inside delivery must be shown on this quotation unless otherwise agreed upon. By submitting their bids/proposals, Bidders/Offerors certify and warrant that the price bid/proposed for FOB destination includes only the actual freight rate costs at the lowest and best rate and is based upon the actual weight of the goods to be shipped. Except as otherwise specified herein, standard commercial packaging, packing and shipping containers shall be used. All shipping containers shall

be legibly marked or labeled on the outside with purchase order number, commodity description, and quantity.

- L. Drug-Free Workplace: During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or contractor.
- M. Ethics in Public Contracting: By submitting their bids/proposals, all Bidders/Offerors certify that their bids/proposals are made without collusion or fraud and that they have not offered or received any kickbacks or inducement from any other Bidder/Offeror, supplier, manufacturer or subcontractor in connection with their bid/proposal, and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised unless consideration of substantially equal or greater value was exchanged.
- N. Hazardous Chemical Communication Program: MUD is required in accordance with 29 CFR 1910.119 to inform MUD and Contractor personnel that work centers within MUD have hazardous chemicals on site. MUD and Contractor personnel may be exposed to these hazardous chemicals while working at MUD. A written Hazard Communication Program has been developed to inform personnel of the specific hazardous chemicals at the work center and the related safety information including protective measures, special precautions and emergency procedures to be observed. The Hazard Communication Program, including a complete file of Material Safety Data Sheets for each hazardous chemical, is available at each work center and may be obtained upon request. The Contractor is responsible for communicating the information contained in the Material Safety Data Sheets to their personnel working at MUD work centers.
- O. City of Martinsville Procurement Proceedings: This solicitation is subject to the provisions of MUD's Procurement Proceedings, and any revisions thereto, which are hereby incorporated into this contract in their entirety.
- P. Immigration Reform and Control Act of 1986: By submitting their bids/proposals, Bidders/Offerors certify that they do not and will not during the performance of this contract employ illegal alien workers or otherwise violate the provisions of the federal Immigration Reform and Control Act of 1986.
- Q. Invoices: Invoices for items ordered, delivered and accepted shall be submitted by the Contractor directly to the payment address shown on the purchase order/contract. All invoices shall show the purchase order number and/or contract number.

- R. Mandatory Use of MUD Form and Terms and Conditions: Failure to submit a bid/proposal on the official MUD form provided for that purpose may be a cause for rejection of the bid/proposal. Return of the complete document is required. Modification of or additions to any portion of the solicitation may be cause for rejection of the bid/proposal; however, MUD reserves the right to decide on a case by case basis, in its sole discretion, whether or not to reject a bid/proposal as non-responsive.
- S. Material Safety Data Sheets: Material Safety Data Sheets and descriptive literature shall be provided with the bid/proposal for each chemical and/or compound offered. Failure on the part of the Bidder/Offeror to submit such data sheets may be cause for declaring the bid/proposal as nonresponsive.
- T. Ownership Rights: MUD shall retain all ownership rights to all printing materials, photographs, video and audio recordings, special maps, etc. All artwork, camera-ready copy, negatives, dies, photos, and similar materials used to produce such jobs shall become the property of MUD upon completion of job. All such items and materials shall be provided, at no charge, to MUD upon request.
- U. Payment:
1. To Prime Contractor:
 - a. Invoices for items ordered, delivered and accepted shall be submitted by the Contractor directly to the payment address shown on the purchase order/contract. All invoices shall show the MUD contract number and or purchase order number; social security number (for individual contractors) or the federal employer identification number (for proprietorships, partnerships, and corporations).
 - b. Any payment terms requiring payment in less than 30 days will be regarded as requiring payment 30 days after invoice or delivery, whichever occurs last. This shall not affect bids/proposals of discounts for payment in less than 30 days. The City will make partial payment for work done before June 30, 2014 not to exceed half of contract price. Final invoicing and payment to be made after July 1, 2014
 - c. All goods or services provided under this contract shall be billed by the Contractor at the contract price.
 - d. The following shall be deemed to be the date of payment: the date of postmark in all cases where payment is made by mail.
 2. To Subcontractors:
 - a. A Contractor awarded a contract under this solicitation is hereby obligated:
 - (1) To pay the subcontractor(s) within seven (7) days of the

Contractor's receipt of payment from MUD for the proportionate share of the payment received for work performed by the subcontractor(s) under the contract; or

- (2) To notify the MUD Procurement Office and the subcontractor(s), in writing, of the Contractor's intention to withhold payment and the reason.
- b. The Contractor is obligated to pay the subcontractor(s) interest at the rate of one percent per month (unless otherwise provided under the terms of the contract) on all amounts owed by the Contractor that remain unpaid seven (7) days following receipt of payment from MUD, except for amounts withheld as stated in section (2) above. The date of mailing of any payment by U.S. Mail is deemed to be payment to the addressee. These provisions apply to each sub-tier Contractor performing under the primary contract. A Contractor's obligation to pay an interest charge to a subcontractor may not be construed to be an obligation of MUD.
- V. Precedence of Terms: Paragraphs A-C, G, I, L-M, O-P, R and U of these General Terms and Conditions shall apply in all instances. In the event there is a conflict between any of the other General Terms and Conditions and any Special Terms and Conditions in this solicitation, the Special Terms and Conditions shall apply.
- W. Qualifications of Bidders/Offerors: MUD may make such reasonable investigations as deemed proper and necessary to determine the ability of the Bidder/Offeror to perform the services/furnish the goods and the Bidder/Offeror shall furnish to MUD all such information and data for this purpose as may be requested. MUD reserves the right to inspect Bidder's/Offeror's physical facilities prior to award to satisfy questions regarding the Bidder's/Offeror's capabilities. MUD further reserves the right to reject any bid/proposal if the evidence submitted by, or investigations of such Bidder/Offeror fails to satisfy MUD that such Bidder/Offeror is properly qualified to carry out the obligations of the contract and to provide the services and/or furnish the goods contemplated therein.
- X. Submission of Bids/Proposals: Please submit one **(1) original and one (1) copy** of bid/proposal response to the City of Martinsville (MUD) via UPS, Fedex or hand delivered to – "City of Martinsville, Karen Mays, Purchasing Manager, Central Warehouse, 300 Fishel Street, Martinsville, VA 2411-3248" or by postal mail at "City of Martinsville, Karen Mays, Purchasing Manager, P. O. Box 1112, Martinsville, VA 24114-1112." Please return bids/proposals in the special envelope provided. If a special envelope is not provided, or if return in the special envelope is not possible, the signed bid/proposal shall be returned in a separate envelope or package, sealed and identified with the following information: Name of Bidder/Offeror with complete address, IFB title, due date and time. MUD shall not be responsible for late, lost or opened bids/proposals due to improper identification by Bidder/Offeror.

- Y. Taxes: Sales to MUD are normally exempt from state sales tax. State sales and use tax certificates of exemption, Form ST-12, will be issued upon request. Deliveries against this contract shall be free of federal excise and transportation taxes. MUD's excise tax exemption registration number is 10-546001415F-001.
- Z. Testing/Inspection: MUD reserves the right to conduct any test/inspection it may deem advisable to assure goods and services conform to the specifications.
- AA. Use of Brand Names: Unless otherwise provided in this solicitation, the name of a certain brand, make or manufacturer does not restrict Bidders/Offerors to the specific brand, make or manufacturer named, but conveys the general style, type, character, and quality of the article desired. Any article which MUD, in its sole discretion, determines to be the equal of that specified, considering quality, workmanship, economy of operation, and suitability for the purpose intended shall be accepted. The Bidder/Offeror is responsible to clearly and specifically identify the product being bid/offered and to provide sufficient descriptive literature, catalog cuts and technical details to enable MUD to determine if the product bid/offered meets the requirements of the solicitation. This is required even if bidding/offering the exact brand, make or manufacturer specified. Normally in competitive sealed bidding only the information furnished with the bid will be considered in the evaluation. Failure to furnish adequate data for evaluation purposes may result in declaring a bid non-responsive. Unless the Bidder/Offeror clearly indicates in its bid/proposal that the product bid/offered is an "equal" product, such bid/proposal will be considered to bid/offer the brand name referenced in the solicitation.
- BB. Use of MUD Facilities: Contractor shall be responsible for providing rest room and other facilities for their employees. The Contractor's employees shall not be permitted to use MUD work center facilities, (this clause shall not apply to consultant-type contracts).
- CC. Waiver: MUD reserves the right to waive informalities, award bids/proposals received on the basis of individual items, or groups of items, or on the entire list of items, to reject any or all bids/proposals received, or any part thereof, which is in the best interests of MUD. The Chief of Procurement's decision shall be final.

V. SPECIAL TERMS AND CONDITIONS:

Announcement of Award: This is a Sealed Bid with a public opening. A bid tab will be sent to all parties. The City will send all bids to Dewberry Engineers, Inc (the project Engineer) for recommendation of awards. A purchase order and/or contract will be issued to the successful Contractor.

Award of Contract: Awards are made to the lowest responsive and responsible Bidder. Evaluation will be based on net prices. Unit prices, extensions and grand total must be shown. In case of arithmetic errors, the unit price will govern. If cash discount for prompt payment is offered, it must be clearly shown in the space provided. MUD reserves the right to reject any and all bids in whole or in part, to waive informality, and to delete items prior to making an award.

Bid Acceptance Period: Any bid in response to this solicitation shall be valid for (60) sixty days. At the end of the (60) sixty-day period the bid may be withdrawn at the written request of the Bidder. If the bid is not withdrawn at that time it remains in effect until an award is made or the solicitation is canceled.

Bid Documents: It shall be the responsibility of the Bidders to examine the entire contents of this IFB carefully. Questions concerning this solicitation must be directed to the Procurement Official and must be received at least (5) five business days prior to the bid opening date. Any changes resulting from inquiries shall be issued by a written amendment from the Procurement Office.

Bid Prices: Bid shall be in the form of a firm unit price for each item during the contract period. All pricing shall include all delivery charges and shipping terms shall be FOB Destination, freight prepaid, (Bidder pays and bears all freight charges and owns goods in transit).

Contract Documents: The Contract entered into by the parties shall consist of the Invitation for Bids, the signed bid submitted by the Contractor, MUD's Purchase Order, the Bid, General and Special Conditions, the Specifications with drawings, if any, including all modifications thereof, all of which shall be referred to collectively as the Contract Documents.

Bidders are advised that MUD does not sign standard contract forms which may be used by the Bidder. The bid form in this IFB contains a signature line for the Bidder which must be signed when submitting a bid. The signature certifies the Bidder is an agent or officer authorized to bind the company to the terms and conditions of this solicitation.

Contractor Experience: Bids must include a complete, but concise, Statement of Qualifications. Bidders shall include the following information with their bid submittal:

A. Related Project Experience

Bidders shall describe the experience of the firm with similar projects and other relevant experience. Bids shall include a minimum of five (5) projects with similar size and scope; location and information about the client(s). MUD expects participants to have a minimum of five years of relevant experience with manhole inspection and gravity sewer mains. The work performed in this project will be conducted using NASSCO's Pipeline Assessment Certification Program (PACP) and Manhole Assessment Certification Program (MACP) condition rating system and relevant project experience will include the use of PACP and MACP compliant documentation. See Attachment A for additional experience requirements due to be submitted with the proposal.

B. Personnel Assigned to Project (Project Team)

Provide the name of the project manager to be assigned to this work along with a description of their experience and expertise. This person will direct and coordinate all phases of the project. Include resumes of personnel that will deliver the various components of the work. Name the Field Crew Lead and other key members of the team that will be performing the work for the scope described herein. Describe their qualifications and experience with similar projects. Give the percentage of the key

members' time that would be committed to this project. NASSCO training documentation should be included for field crew staff.

Provide with name of significant subconsultant(s), and their proposed role in the project. Subconsultant(s) must be approved by the client prior to contract's award. The same documentation on experience and personnel as listed in Part A and B of this section must be provided if the subconsultant is providing field inspection services.

If selected, the naming of personnel as listed above will be considered by the Owner to be the gravity main inspection team and will be expected to be assigned to the project for its duration. Change in personnel is subject to review and approval by the Owner.

Contractor Registration: If a contract for construction, removal, repair or improvement of a building or other real property is for seventy thousand dollars (\$70,000) or more, or if the total value of all such contracts undertaken by Bidder within any twelve-month period is five hundred thousand dollars (\$500,000) or more, the Bidder is required under the Code of Virginia to be licensed by the State Board of Contractors as a "CLASS A CONTRACTOR". If such contract is for seventy five hundred dollars (\$7,500) or more (one thousand dollars (\$1,000) for electrical, plumbing and HVAC work) but less than seventy thousand dollars (\$70,000), the Bidder is required to be licensed as a "CLASS B CONTRACTOR". If such contract is for one thousand dollars (\$1,000) or more but less than seventy five hundred dollars (\$7,500) and is not for electrical, plumbing and HVAC work, the Bidder is required to be licensed as a "CLASS C CONTRACTOR".

The Bidder shall include their applicable Contractor License Number and Type on the attached Contractor Data Sheet with their bid submittal. If the Bidder shall fail to provide this information with their bid submittal and shall fail to provide said Contractor license number to MUD in writing when requested to do so after the opening of Bids, the Bidder shall be deemed to be in violation of the Code of Virginia, and their bid will not be considered. If the Bidder shall fail to obtain the required license prior to submission of his bid, the bid shall not be considered.

Contractor's Title to Materials: No materials or supplies for the work shall be purchased by the Contractor or by any subcontractor subject to any chattel mortgage or under a conditional sales or other agreement by which an interest is retained by the seller. The Contractor warrants that he has clear title to all materials and supplies for which he invoices for payment.

Definitions: The term "MUD" as used herein, shall mean the Martinsville Utilities Department/City of Martinsville.

The term "Contractor" means the person, firm or corporation named as such in the contract and includes the plural number and the feminine gender when such are named in the contract as the Contractor. The term "Subcontractor" means only those having a direct contract with the Contractor and it includes one who furnishes material work to a special design but does not include one who merely furnishes material not so worked.

The following references have been used in this document:

- Owner shall refer to MUD
- Contractors shall refer to the entity and all sub contractors submitting a bid on the work to be performed in this specification or otherwise directed
- Engineer shall refer to MUD's designated engineering representative (Dewberry Engineers)

Delivery: Contractor is required to complete all work within 60 days of the of the notice to proceed date indicated on MUD issued purchased order.

Delivery and Storage: It shall be the responsibility of the Contractor to make all arrangements for delivery, unloading, receiving and storing materials in the building(s) during installation. MUD will not assume any responsibility for receiving these shipments. Contractor shall check with MUD and make necessary arrangements for security and storage space in the building(s) during installation.

Discounts: Payment discounts shall be considered at time of payment but will not be an award factor.

Final Inspection: At the conclusion of the work, the Contractor shall demonstrate to the authorized MUD representative that the work is fully operational and in compliance with contract specifications and codes. Any deficiencies shall be promptly and permanently corrected by the Contractor at the Contractor's expense prior to final acceptance of the work.

Indemnification: Contractor agrees to indemnify, defend and hold harmless MUD, its officers, agents, and employees from any claims, damages and actions of any kind or nature, whether at law or in equity, arising from or caused by the use of any materials, goods, or equipment of any kind or nature furnished by the Contractor/any services of any kind or nature furnished by the Contractor, provided that such liability is not attributable to the sole negligence of the using agency or to failure of the using agency to use the materials, goods, or equipment in the manner already and permanently described by the Contractor on the materials, goods, or equipment delivered.

Insurance: By signing and submitting a bid under this solicitation, the Bidder certifies that if awarded the contract it will have the following insurance coverages at the time the contract is awarded. For construction contracts, if subcontractors are involved, the subcontractors will have workers' compensation insurance in accordance with the Code of Virginia. **A current copy of Bidder's Certificate of Insurance must be included with bid submittal.**

The Bidder further certifies that the Contractor and any subcontractors will maintain these insurance coverages during the entire term of the contract and that all insurance coverages will be provided by insurance companies authorized to sell insurance in Virginia by the Virginia State Corporation Commission.

Insurance Coverage and Limits:

Worker's Compensation - Statutory requirements and benefits.

Employer's Liability- \$100,000.

General Liability - \$500,000 combined single limit. MUD is to be named as an additional insured with respect to the services being procured. This coverage is to include Premises/Operations Liability, Products and Completed Operations Coverage, Independent Contractor's Liability, Owner's and Contractor's Protective Liability and Personal Injury Liability. Automobile Liability- \$500,000

Laws and Regulations: The Contractor shall give all notices and comply with all laws, ordinances, regulations and lawful orders of any public authority bearing on the performance of the work.

This contract and all other contracts and subcontracts are subject to the provisions of the Code of Virginia relating to labor unions and the "right to work," and all Contractors and Subcontractors, whether residents or nonresidents of the Commonwealth, who perform any work related to the project shall comply with all of the said provisions.

The provisions of all regulations governing safety as adopted by the Safety Codes Commission of the Commonwealth of Virginia, issued by the Department of Labor and Industry under the Code of Virginia, shall apply to all work under this contract.

Negotiation with the Lowest Bidder: Unless all bids are canceled or rejected, MUD reserves the right granted by the Code of Virginia to negotiate with the lowest responsive, responsible Bidder to obtain a contract price within the funds available to MUD whenever such low bid exceeds MUD's available funds. For the purpose of determining when such negotiations may take place, the term "available funds" shall mean those funds which were budgeted by MUD for this contract prior to the issuance of the written Invitation for Bid. Negotiations with the low Bidder may include both modifications of the bid price and the Scope of Work/Specification to be performed. MUD shall initiate such negotiations by written notice to the lowest responsive, responsible Bidder that its bid exceeds the available funds and MUD wishes to negotiate a lower contract price. The times, places, and manner of negotiation shall be agreed to by MUD and the lowest responsive, responsible Bidder.

Performance Bonds: The successful Bidder shall deliver to the procurement office an executed performance bond, in the sum of the contract amount, with the City of Martinsville as obligee. The surety shall be a surety company or companies approved by the State Corporation Commission to transact business in the Commonwealth of Virginia. Standard bond forms, if required, will be provided by the procurement office upon request. The successful Bidder will be required to deliver the payment bonds within (5) business days of notice of bid award. Please submit the total cost for payment bonds **separate** from the bid price.

Preparation and Submission of Bids: Bids must give the full business address of the Bidder and be signed by an authorized representative. Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name by one of the members of the partnership or any authorized representative, followed by the designation of the person signing. Bids by corporations must be signed with the

legal name of the corporation followed by the name of the State in which it is incorporated and by the signature and designation of the president, secretary or other person authorized to bind it in the matter. The name of each person signing shall also be typed or printed below the signature. A bid by a person who affixes to the signature the word "President", "Secretary", "Agent" or other designation without disclosing the principal, may be held to be the bid of the individual signing. When requested by the MUD, satisfactory evidence of the authority of the officer signing in behalf of the corporation shall be furnished.

All bidders are encouraged to submit responses to this solicitation on recycled and recyclable paper, duplexed on both sides where practicable.

Prime Contractor Responsibilities: The Contractor shall be responsible for completely supervising and directing the work under this contract and all subcontractors that he may utilize, using his best skill and attention. Subcontractors who perform work under this contract shall be responsible to the prime Contractor. The Contractor agrees that he is fully responsible for the acts and omissions of his subcontractors and of persons employed by them as he is for the acts and omissions of his own employees.

Protection of Persons and Property: The Contractor expressly undertakes, both directly and through its Subcontractors, to take every precaution at all times for the protection of persons and property, including MUD's employees and property and its own.

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work.

The Contractor shall continuously maintain adequate protection of all work from damage and shall protect MUD's property from injury or loss arising in connection with this contract. The Contractor shall make good any such damage, injury or loss, except such as may be directly due to errors in the Contract Documents or caused by agents or employees of MUD. The Contractor shall adequately protect adjacent property as provided by law and the Contract Documents, and shall provide and maintain all passageways, guard fences, lights and facilities for protection required by public authority, local conditions, or any of the Contract Documents.

Receipt and Opening of Bids: It is the responsibility of the Bidder to assure that the bid is submitted to the place designated for receipt of bids prior to the time set for receipt of bids. No bid received after the time designated for receipt of bids shall be considered. All times listed in the MUD Solicitation are Eastern Standard Time.

Bids received in response to an Invitation for Bid will be opened at the time and place stated in the solicitation and Bidders' names and prices made public for the information of Bidders and others interested who may be present either in person or by representative. The official or agent of MUD, whose duty it is to open them, will decide when the specified time has arrived. No responsibility will be attached to any official or agent for the premature opening of a bid not properly addressed and

identified. No decisions relating to an award of a contract shall be made at the bid opening.

References: Bidder must submit **(5) five** references with their bid. References furnished must be for similar type of goods/services requested in this solicitation.

Silence of Specification: The apparent silence of these specifications and any supplemental specifications as to any detail or the omission from the specifications of a detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail and correct type, size and design are to be used. All interpretations of these specifications shall be made on the basis of this statement.

Subcontracts: No portion of the work shall be subcontracted without prior written consent of the Procurement Office. In the event that the Contractor desires to subcontract some part of the work specified herein, the Contractor shall furnish the Procurement Office the names, qualifications and experience of their proposed subcontractors. The Contractor shall, however, remain fully liable and responsible for the work to be done by its subcontractors(s) and shall assure compliance with all requirements of the contract.

Superintendence by Contractor: The Contractor shall be responsible for all means, methods, techniques, sequences and procedures and for coordinating all portions of the work under the Contract except where otherwise specified in the Contract Documents.

The Contractor shall, at all times, enforce strict discipline and good order among the workers on the project, and shall not employ on the work any unfit person or anyone not skilled in the work assigned to him/her.

Understanding of the Project: Provide a brief statement as to your understanding of the project. Discuss the proposed planning, organization and management tools to be used to control schedule, costs, and quality of work.

The submission of additional pertinent information beyond the requirements of this bid is acceptable, but shall be limited to information that is to be specifically used in the performance of this project.

This would include the identification of any work not covered in the Attachment A-Scope of Services that you believe is important or necessary to meet the project's objectives.

Use of Contract By Other Political Jurisdictions: Extension of Contract - Bidders are advised that all resultant contracts will be extended, **with the authorization of the Bidder**, to City of Martinsville local government jurisdictions and school divisions to permit their ordering of equipment, supplies and services at the prices and terms of the resulting contract. If any other jurisdiction decides to use the final contract, the Contractor(s) must deal directly with that jurisdiction or political subdivisions concerning the placement of orders, issuance of the purchase orders, contractual disputes,

invoicing and payment. MUD acts only as the "Contracting Agent" for these jurisdictions and political subdivisions. Failure to extend a contract to any jurisdiction will have no effect on consideration of your bid or offer.

It is the awarded vendor's responsibility to notify the jurisdictions and political subdivision of the availability of the contract(s).

Each participating jurisdiction and political subdivision has the option of executing a separate contract with the awardee. Contracts entered into with them may contain general terms and conditions unique to those jurisdictions and political subdivisions covering minority participation, non-discrimination, etc. If, when preparing such a contract, the general terms and conditions of a jurisdiction are unacceptable to the awardee, the awardee may withdraw its extension of the award to that jurisdiction.

MUD shall not be held liable for any costs or damages incurred by another jurisdiction as a result of any award extended to that jurisdiction or political subdivision by the awardee.

Use of Premises and Removal of Debris: The Contractor expressly undertakes, either directly or through its Subcontractor:

To perform this Contract in such a manner as not to interrupt or interfere with the operation of any existing activity on the premises or at the location of the work;

To store its apparatus, materials, supplies, and equipment in such an orderly fashion at the site of the work as will not unduly interfere with the progress of its work or the work of MUD or any other Contractor; and

To place upon work or any part thereof only such loads as are consistent with the safety of that portion of work.

To effect all cutting, filling or patching of its work required to make the same to conform to the plans and specifications, and except with the consent of MUD, not to cut or otherwise alter the work of any other Contractor. The Contractor shall not damage or endanger any portion of the work by cutting, patching or otherwise altering any work, or by workmanlike appearance.

To clean up frequently all refuse, rubbish, scrap materials and debris caused by its operation, to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance.

Warranty: The Contractor agrees that the goods or services furnished under any award resulting from this solicitation shall be covered by the most favorable commercial warranties the Contractor gives any customer for such goods or services and that the rights and remedies provided therein are in addition to and do not limit those available to MUD by any other clause of this solicitation. A copy of this warranty shall be furnished with the bid.

Withdrawal or Modification of Bids Prior to Due Date: Bids may be withdrawn or modified by written notice received from the Bidders prior to the time fixed for bid receipt.

Work Schedule: Prior to award, the Bidder may be required to submit a detailed work schedule listing the stages of work and completion times for work to be performed.

Work Site Damages: Any damage to existing utilities, finished surfaces, or equipment, including MUD, employee or other vehicles on site, resulting from the performance of this contract shall be repaired to MUD's satisfaction at the Contractor's expense when damages occur due to negligent conditions not associated with direct damages caused by normal cleaning and inspection.

VI. METHOD OF PAYMENT:

The Bidder should provide a Schedule of Values to MUD with their bid submittal. The Schedule of Values shall be reviewed by MUD and shall form the basis for payment to the Contractor, upon approval by MUD.

The Schedule of Values should provide for progress payments in installments based upon an estimated percentage of completion and that the Contractor shall be paid at least ninety-five percent of the earned sum when payment is due, with no more than five percent being retained to ensure faithful performance of the contract. All amounts withheld may be included in the final payment. Any subcontract for this project that provides for similar progress payments shall be subject to the provisions of this section.

Final payment shall be authorized by MUD upon satisfactory completion and acceptance of all work in accordance with MUD's Contract and receipt of required warranty paperwork. Progress payments shall not relieve the Contractor of performance obligations under this contract.

Payments will be made within 30 days after submission of invoice, delivery, or completion of service, whichever occurs last. Payment is made by invoices with reference to the purchase order and directed to the address shown on the purchase order contract.

VII. PRICING:

Bid shall be in the form of a firm unit price for each item during the contract period. All pricing shall include all delivery charges and shipping terms shall be FOB Destination freight prepaid, (Bidder pays and bears all freight charges and owns goods in transit). All pricing must be submitted on MUD's Solicitation Form.

VIII. ATTACHMENTS:

- A. Statement of No Bid

- B. Bidder's Data Sheet
- C. Bid Pricing Page
- D. Scope of Services
- E. Location Map

IX. BIDDER SUBMITTAL REQUIREMENTS:

Please submit the checked items below with bid submittal:

- Signed original MUD Solicitation Form, including copies required in Section IV, Submission of Bids/Proposals
- Signed original MUD Bid Amendments, if applicable
- Bidder's Data Sheet Complete with References
- Schedule of Values
- Subcontractor's List, if Applicable, including References
- Work Schedule
- Sample copy of your Certificate of Insurance
- Warranty Statement
- Statement as to your Understanding of the Project

STATEMENT OF NO BID OR OFFER

Bidders/Offerors not submitting a bid or an offer for the commodity or service requested must fax this form to the Purchasing Office at (276) 403-5356 prior to the solicitation due date. Questions concerning specifications must be brought to the attention of the Procurement Official responsible for this solicitation at least (5) five business days prior to the solicitation due date.

Solicitation #: _____

Commodity or Service: Gravity sewer pipeline and Manhole Inspections

Decline to bid on the IFB or RFP for the following reasons:

- Unable to meet scope of work/statement of needs
- Specifications are unclear or restrictive (explain in remarks)
- Unable to meet required delivery or performance date
- Unable to meet insurance requirements
- Unable to meet bonding requirements
- Insufficient time to respond to the solicitation
- Do not offer requested commodity or service, please remove our name from MUD's bidder's list for this commodity or service only.
- Other (explain in remarks)

Remarks:

Failure to return completed form may result in the removal from MUD's bidder's list for the commodity or service requested above.

Company Name: _____

Authorized Representative: _____
(please print)

Signature: _____

Telephone: _____

Date: _____

BIDDER'S DATA SHEET

BIDDER'S INFORMATION:

BIDDER'S NAME: _____
 MAILING ADDRESS: _____

 COMPANY OFFICERS: _____
 TELEPHONE: _____ FAX: _____
 FEDERAL ID NUMBER: _____ EMAIL: _____
 WEBSITE ADDRESS: _____

GENERAL INFORMATION:

Number of years business has been in operation? _____ Number of employees? _____
 Number of years experience providing/servicing same or similar goods/services? _____
 Number of employees of this business who are certified for servicing the equipment referenced in this solicitation? _____
 Number of service locations for this business? _____
 Addresses of these service locations? (Please attach detailed address list.)

LICENSE REQUIREMENTS:

By my signature on this solicitation, I certify that this firm/individual and applicable subcontractor/s is properly licensed for providing the goods/services specified. (List license type and Virginia Contractor Number below as required in HRSD's Special Terms and Conditions section entitled, "Contractor Registration"):

Contractor Name: _____ **Subcontractor Name:** _____
 (As an attachment, submit subcontractor address, phone, contact and license information.)

For Construction Services:
 Licensed Class Type (A, B, C): _____ Virginia Contractor Number: _____ Specialty: _____

Other than Construction Services:
 License#: _____ License Type (business, permit, etc.): _____

TYPE OF ORGANIZATION (Please check appropriate category below):

- Individual Partnership Government Entity
- Sole Proprietor Non-Profit Organization
- Corporation, Incorporated Under State Laws of: _____

BIDDER'S DATA SHEET (CONTINUED)

TYPE OF BUSINESS (Please check appropriate categories below):

- Manufacturer Wholesale Dealer Retail Dealer
- Manufacturer Representative/Distributor Service Establishment, Define: _____
- Construction, Define Below:
 - General Contractor Limited Contractor Other: _____

REFERENCES (Submit the minimum number of references as required in the Special Terms & Conditions. References provided must be for similar goods/services requested in this solicitation.):

1) Name of Firm: _____
 Address: _____

 Contact Name: _____ Title: _____
 Contact Data: Ph: _____ Fax: _____ Email: _____
 Goods/Services Provided: _____

 Start and Completion Dates: _____

2) Name of Firm: _____
 Address: _____

 Contact Name: _____ Title: _____
 Contact Data: Ph: _____ Fax: _____ Email: _____
 Goods/Services Provided: _____

 Start and Completion Dates: _____

3) Name of Firm: _____
 Address: _____

 Contact Name: _____ Title: _____
 Contact Data: Ph: _____ Fax: _____ Email: _____
 Goods/Services Provided: _____

 Start and Completion Dates: _____

4) Name of Firm: _____
 Address: _____

 Contact Name: _____ Title: _____
 Contact Data: Ph: _____ Fax: _____ Email: _____
 Goods/Services Provided: _____

Start and Completion Dates: _____

5) Name of Firm: _____
Address: _____

Contact Name: _____ Title: _____
Contact Data: Ph: _____ Fax: _____ Email: _____
Goods/Services Provided: _____

Start and Completion Dates: _____

Company Name

Printed Name/Title

Date

Authorized Signature

BID PRICING PAGE

NOTE: THIS IS A UNIT COST CONTRACT. PRICES ARE FIXED FOR THE COMPLETE DURATION OF THE PROJECT. ANY COSTS NOT SPECIFICALLY IDENTIFIED IN A BID ITEM SHALL BE INCLUDED IN LISTED ITEMS. NO GUARANTEE IS MADE THAT THE QUANTITY LISTED WILL BE REQUIRED AND PAID AS PART OF THIS CONTRACT. A TABLE IDENTIFYING THE GENERAL SCOPE, LOCATION, SIZE, AND MATERIAL IS INCLUDED IN ATTACHMENT A.

Item Description	Unit Price (\$ per Unit)	Unit Quantity	Total Price
A. CCTV Inspection, gravity main 36" diameter w/o bypass pumping		*11,193 LF	
B. CCTV Inspection, gravity main 36" diameter w/ bypass pumping		*1,244 LF	
C. CCTV Inspection, gravity main 42" diameter w/o bypass pumping		*10,456 LF	
D. CCTV Inspection, gravity main 42" diameter w/ bypass pumping		*1,162 LF	
E. CCTV Inspection, RCP gravity main 42" diameter, w/ bypass pumping (mountain segment)		*1,850 LF	
F. Normal Pipeline Cleaning, 2 passes		*26,600 LF	
G. Manhole Inspection (0-5 ft)		*9 Manholes	
H. Manhole Inspection (5-10 ft)		*57 Manholes	
I. Manhole Inspection (10-15 ft)		*22 Manholes	
J. Manhole Inspection (15-20 ft)		*2 Manholes	
K. Manhole Inspection (20-25 ft)		*3 Manholes	
L. Manhole Inspection (25+ ft)		*2 Manholes	
		Total Base Bid (Sum Items A-L)	_____

* Quantities represent total quantities and are for bid evaluation purposes only. The owner reserves the right to reduce quantities down to 40% of quantities shown at no change in unit prices offered.

Additive Bid Items**	Description	Unit Price (\$ per Unit)	Unit Quantity	Total Price
A-1	Ultrasonic (Sonar) Inspection of 36" and 42" gravity Main		*2,000 LF	
A-2	Laser inspection of 36" & 42" gravity main		*2,000 LF	

* Quantities represent total quantities and are for bid evaluation purposes only. The owner reserves the right to reduce quantities down to 40% of quantities shown at no change in unit prices offered.

** Owner reserves the right to consider Additive Bid items in making a final decision of award. If the Total Base Bids noted above are comparable and additional value is deemed provided by acceptance of the Alternate bid items, the Owner may make award accordingly in the best interest of the project. Bidders who meet all other bid qualifications yet do not offer Alternate bid items shall however, not be excluded from consideration of award.

Bidder Information:

Name/Title (Printed): _____

Signature: _____

Company: _____

Date: _____

Telephone Number: _____

Attachment A-Scope of Services
Gravity Main Condition Assessment
CCTV and Manhole Inspection

PART 1 - GENERAL

1.1. PROJECT OVERVIEW

A. General

Approximately 4.9 miles of gravity main is anticipated to be inspected using CCTV under NASCCO PACP standards and of approximately 95 manhole inspections under MACP inspection standards. These quantities could be adjusted at the Owner's discretion or based on actual field conditions. Contractor shall be able to effectively execute the different inspection technologies (e.g. CCTV, Sonar and Laser inspection).

This work is being conducted as part of a study to assess the condition of the Smith River Interceptor, the main artery of the City's sanitary sewer system. The scope of this work includes a gravity pipeline with diameters of 36" and 42" made of corrugated metal pipe (CMP) flowing approximately 1/3 full during baseflows. The project includes inspection of a segment of 42" reinforced concrete pipe (RCP) cored through a site of high elevation and rocky terrain. As part of this project, it is imperative that representative segments of the gravity sewer be inspected under dry conditions. The Contractor shall perform bypass pumping for this purpose.

B. Project Management

The CONTRACTOR shall be responsible for the effective administration and management of the entire project, and for quality of data. All issues from the CONTRACTOR related to payment, requests for information, inspection, or other items in the administration of the contract shall be directed to the Owner's ENGINEER. The CONTRACTOR shall meet and coordinate with Owner's ENGINEER regarding findings of field investigations. A pre-start up meeting shall be held within 30 days of contract award to review the scope of work and schedule of the project. Follow-up weekly meetings shall be held to review inspection progress, issues, and data delivery. Weekly meetings shall be conducted via conference call or on site, as required.

C. Traffic Control and Safety

The CONTRACTOR shall be solely responsible for taking all necessary safety precautions in the performance of the services. This project involves known hazards of working with active sewers and in exposed environments subject to traffic, weather hazards, and other field conditions that may prove hazardous to the CONTRACTOR. The CONTRACTOR shall provide the OWNER and ENGINEER a copy of a Health and Safety Plan that will be followed during the course of the project. This Plan should be updated at least annually but also when changes occur that would influence implementation of the Plan. In addition, the CONTRACTOR shall schedule a safety briefing with the

OWNER's Safety Division to be held at least one week prior to initiation of field activities.

The CONTRACTOR shall provide traffic control conforming to local and State requirements for traffic control while working within or affecting any city or State right of ways (refer to the Virginia Department of Transportation Work Area Protection Manual). The Contractor shall submit any traffic control plans and pay for any traffic control permits required to perform the work.

D. Utility Location

The CONTRACTOR shall comply with all Miss Utility of Virginia (Dial 811 in VA, or 1-800-552-7001) requirements if any excavation or digging is required.

E. Field Inspection

Owner's ENGINEER will provide system mapping digitally for the CONTRACTOR to utilize in the inspection process. The mapping was generated utilizing the original record drawings provided by the OWNER for the line and are for representation only and may reflect different conditions than what exists. CONTRACTOR will verify field conditions.

The CONTRACTOR shall be solely responsible for providing access for labor, equipment, and supplies to manholes for performing manhole and pipeline inspections. Some portions of the system may require special equipment to access and inspect (e.g., along lowland areas, easements, waterways and cored sections).

Engineer will be performing periodic inspection of work performed by the Contractor. Contractor shall be responsible for assisting in these inspections and for notifying the Engineer of unusual conditions for which further evaluation and/or field observation is warranted.

1.2 ADDITIONAL ENGINEERING SERVICES

- A. In the event that the ENGINEER is required to provide additional engineering services as a result of CONTRACTOR error or omissions; if the ENGINEER is required to examine and evaluate any changes proposed by the CONTRACTOR for the convenience of the CONTRACTOR; or if the ENGINEER is required to make more than one (1) Substantial Completion Inspection or more than one (1) Final Completion Inspection, then the ENGINEER'S charges in connection with such additional services shall be reimbursed to the OWNER by the CONTRACTOR.

1.3 AGREEMENT

- A. WORK will be performed by the CONTRACTOR under a single, all inclusive AGREEMENT.

1.4 LINES, GRADES, AND REFERENCE POINTS

- A. Project Stakeout: Lines, grades, and construction staking necessary for the proper prosecution of all the WORK specified here in will be established by CONTRACTOR at his expense by a surveyor licensed in the Commonwealth of Virginia where necessary.
- B. Field Verification: Where called for on the Drawings and Specifications or, required for accuracy and fit with existing WORK, CONTRACTOR will make its own field measurements to verify any dimensions shown on the Drawings. Consequently, OWNER and ENGINEER present this information only as an approximation and not a guideline. CONTRACTOR shall be responsible for verification prior to submittal.

1.5 RESPONSIBILITY REGARDING EXISTING UTILITIES AND STRUCTURES

- A. Existing Structures: The existence and location of underground utilities indicated on the Drawings are not guaranteed and shall be investigated and verified in the field by CONTRACTOR before WORK is begun. Excavation in the vicinity of existing structures and utilities shall be carefully performed by hand if deemed appropriate by CONTRACTOR. CONTRACTOR shall dig test pits at all tie-ins to existing utility lines to verify size and location.
- B. Responsibility: CONTRACTOR shall be held responsible for any damages to, and for maintenance and protection of, existing utilities and structures; and, repair such to the complete satisfaction of the respective owner(s).
- C. Pre-Existing Conditions: For the protection of both itself and OWNER, CONTRACTOR shall make a survey of adjacent properties before commencing operations where necessary. Such a survey shall locate all existing cracks and damage to the existing structures by means of drawings and photographs. "Tell tales" shall be placed as directed by ENGINEER.
- D. Documentation: A copy of this report shall be filed with ENGINEER. Any refusal of owner(s) of adjacent property to permit entry for purposes of inspection shall be noted in the report.
- E. Protection of the Work: CONTRACTOR shall continuously maintain adequate protection of all its WORK and materials from damage or theft and shall protect OWNER'S property and all adjacent property from injury or loss arising in connection with activities provided for this Project. CONTRACTOR shall be liable for any such damage, injury, or loss.
- F. Protection of Adjacent Facilities: CONTRACTOR shall take, use, provide, and maintain all necessary precautions, safeguards, and protection to prevent accidents, or injury to persons or property on, about, or adjacent to the site of the WORK. CONTRACTOR shall post danger signs warning against any hazards created by the WORK being done under this CONTRACT. CONTRACTOR shall designate a responsible member of its organization to be responsible for the prevention of accidents on the Project. The name of this person so designated shall be reported in writing to ENGINEER. In an emergency

affecting the safety of life, or of the WORK or adjoining property, CONTRACTOR, without special instructions or authorization from ENGINEER or OWNER, is hereby permitted to act, at its discretion, to prevent such threatened loss or injury. It must take such action if so instructed or authorized by ENGINEER or OWNER.

- G. Requirements of Law: CONTRACTOR shall also protect adjacent property as required by law.

1.6 APPLICABLE CODES

- A. Specified Codes: Whenever reference is made to the furnishing of materials or testing thereof to conform to the standards of any technical organization or body, it shall be construed to mean the latest standard, code, specification, or tentative specification adopted and published at the date of Advertisement for Bids, even though reference has been made to an earlier standard; and such standards are made a part thereof to the extent which is indicated or intended.
- B. Non-Specified Codes: When no reference is made to a code, standard, or specification, the standard Specifications of the ASTM, the ASA, the AIEE, or the NEMA or others, as applicable, shall govern.
- C. Permits: CONTRACTOR shall be responsible for compliance with all state and local codes and ordinances.

1.7 COORDINATION

- A. CONTRACTOR shall coordinate all work with the OWNER and individual property owners and business owners. At least 48 hours Notice will be given for any WORK involving any existing facilities.

PART 2 – PRODUCTS

Not Applicable.

PART 3 – EXECUTION

3.1. CONSTRUCTION SCHEDULE AND SEQUENCE

- A. It shall be the CONTRACTOR'S responsibility to propose a construction schedule to complete all work in the Contract completion time noted in the Information for Bidders and as supplemented herein.
- B. The OWNER shall have the right to the use of completed facilities as they become available, this shall not relieve contractor of this responsibility to complete work on any such facility.
- C. The CONTRACTOR shall ensure that all service connections are maintained throughout the duration of the project.

3.2. MEASUREMENT AND PAYMENT

A. Section Includes

Measurement and payment criteria applicable to the work by the CONTRACTOR. This is a unit price contract. Each bid item unit price shall be complete compensation for the provision of all material, equipment, labor, services, and any other necessary items. Unit prices will be taken from those submitted on the "Bid Pricing Page" submitted by the CONTRACTOR at the time of Bidding.

B. Authority

The ENGINEER will be responsible to verify measurement for payment as submitted by the CONTRACTOR with the request for payment. Any discrepancies between the quantity submitted by the CONTRACTOR and the quantity measured by the ENGINEER will be decided by the OWNER.

C. Payment

1. Payment for the Work completed in accordance with the Contract Documents will be measured and paid as described below or in the Contract Documents, only if the bid item appears on the bid form.
2. If, in the completion of the Work, the quantities for measured items vary from those on the bid form, the CONTRACTOR shall report the discrepancy to the ENGINEER before the work is covered. In such case, the payment to the CONTRACTOR shall be adjusted based on the unit prices submitted on the bid form.
3. The CONTRACTOR Price for any item shall be full compensation for completion of the item, including any materials, equipment, tools, services, and labor necessary to complete the item in accordance with the Contract Documents.
4. If no bid item appears on the bid form, related work shall be considered incidental to a bid item and no additional payment will be made for the requirements.

D. Measurement and Payment Descriptions

1. **ITEMS A - E:** CCTV Inspection: This item shall be paid on a per horizontal linear foot basis to include mobilization of equipment and staff to the project site, traffic control and permitting, inspection field work, data quality control, delivery of PACP compliant documentation, reporting, and progress meetings. No payment will be made for unacceptable television inspection footage. **Table 1** in this section provides an approximate listing of the pipelines to be inspected as part of this contract. Quantities can be adjusted to 40% of the total at the discretion of MUD.
2. **Item F:** Pipeline Cleaning: This item shall be paid on a per horizontal linear foot basis to include mobilization of equipment and staff to the project site, traffic control and permitting, cleaning of two passes either with hydraulic equipment, collection of debris, transport and disposal of the debris at an OWNER approved

location. No payment will be made until disposal tickets for debris removed are submitted. Quantities can be adjusted to 40% of the total at the discretion of MUD.

3. Item G - L: Manhole Inspection: This item shall be paid on a per manhole basis to include mobilization of equipment and staff to the project site, traffic control and permitting, inspection field work, data quality control, delivery of MACP compliant documentation, and reporting. Table 2 in this section provides an approximate listing of the manholes to be inspected as part of this contract. These estimates were made using the record drawings and will need to be confirmed by the contractor. Quantities can be adjusted to 40% of the total at the discretion of MUD.

Table 1*. Shown are segments of the Smith River Interceptor defining length, material, diameter, slope, and operating parameters (flow [Q], depth of flow [y], velocity [v], and % full) at 8 am (low flow) and 10 am (daily peak flow). Values are only estimates and stations correspond with values from the record construction drawings.

Station							Parameters at 8 am				Parameters at 10 am				
Start (ft)	Stop (ft)	Stop Length (ft)	Segment Length (ft)	Pipe	D (in)	S (ft/ft)	Q (MGD)	y (in)	v (ft/s)	% full	Q (MGD)	y (in)	v (ft/s)	% full	
269 + 75	255 + 16	25516	1459	CMP	36	0.001	1.55	11.2	1.28	31.1	2.2	13.5	1.41	37.5	
255 + 16	242 + 71	24271	1245	CMP	36	0.0012	1.55	10.68	1.37	29.7	2.2	12.83	1.51	35.6	
242 + 71	227 + 90	22790	1481	CMP	36	0.0006	1.55	12.8	1.06	35.6	2.2	15.5	1.17	43.1	
227 + 90	222 + 57	22257	533	CMP	36	0.00175	1.55	9.7	1.56	26.9	2.2	11.61	1.73	32.3	
222 + 57	206 + 00	20600	1657	CMP	36	0.0005	1.55	13.4	1	37.2	2.2	16.3	1.09	45.3	
206 + 00	187 + 50	18750	1850	RCP	42	0.0008	2.25	9.92	2.01	23.6	2.9	11.3	2.16	26.9	Tunnel Segment
187 + 50	168 + 29.67	16829.67	1920.33	CMP	36	0.0005	2.25	16.5	1.1	45.8	2.9	19.2	1.17	53.3	
168 + 29.67	161 + 71	16171	658.67	CMP	42	0.0005	2.25	15.4	1.09	36.7	2.9	17.6	1.17	41.9	
161 + 71	150 + 01.75	15001.75	169.25	CMP	42	0.0014	2.25	11.74	1.58	28.0	2.9	13.4	1.7	31.9	
150 + 01.75	146 + 10	14610	391.75	CMP	42	0.0013	2.25	11.97	1.54	28.5	2.9	13.65	1.66	32.5	
146 + 10	142 + 30	14230	380	CMP	42	0.0012	2.25	12.2	1.5	29.0	2.9	13.94	1.61	33.2	
142 + 30	139 + 51.23	13951.23	278.77	CMP	42	0.001	2.25	12.81	1.4	30.5	2.9	14.6	1.51	34.8	
139 + 51.23	137 + 44.40	13744.4	206.83	CMP	42	0.0013	2.25	11.97	1.54	28.5	2.9	13.65	1.66	32.5	
137 + 44.40	133 + 06.12	13306.12	438.28	CMP	42	0.001	2.25	12.8	1.4	30.5	2.9	14.6	1.51	34.8	
133 + 06.12	131 + 30.05	13130.05	176.07	CMP	36	0.0349	2.25	5.56	5.02	15.4	2.9	6.29	5.42	17.5	
131 + 30.05	128 + 43	12843	287.05	CMP	36	0.025	2.25	6.03	4.47	16.8	2.9	6.82	4.81	18.9	
128 + 43	122 + 34	12234	609	CMP	36	0.0044	2.25	9.27	2.42	25.8	2.9	10.55	2.6	29.3	
122 + 34	91 + 64.64	9164.64	3069.36	CMP	36	0.0024	2.25	10.83	1.95	30.1	2.9	12.36	2.09	34.3	
91 + 64.64	0 + 66.81	66.81	9094.83	CMP	42	0.001	2.25	12.8	1.4	30.5	2.9	14.6	1.51	34.8	
			25905.19												
		Length =	4.91		miles										

***Table 1** is not intended to be a complete listing of all segments and details but only an approximation of the project scope. Site drawings are available for review to approximate project and inspection and must be site confirmed by the CONTRACTOR.

Table 2. Shown is a summary of the manhole system along the interceptor to be part of the inspection listed in Section 3.2, Paragraph D, Item G-L. These values are an estimate obtained from the original record drawings and will need to be verified by the contractor.

Manhole Depth (ft)	# of Manholes
0-5	9
5-10	57
10-15	22
15-20	2
20-25	3
25+	2
Total =	95

3.3 SPECIFICATIONS

The following specifications are included in this section:

Section 100 Television Inspection of Gravity Mains
Section 200 Sewer Cleaning
Section 300 Inspection of Existing Manholes

End of Section

SECTION 100
TELEVISION INSPECTION OF GRAVITY MAINS

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope

The CONTRACTOR shall perform internal inspections of the project gravity mains and record any defects discovered. The gravity mains will be in service during the duration of the work. The CONTRACTOR shall use Closed Circuit Television (CCTV) of the project pipelines above the flow line. No CCTV survey of gravity mains with the flow level exceeding 40 percent of the full diameter will be accepted.

It is essential that the condition of the bottom of the gravity main be observed for a representative sample of the gravity main (interceptor). Contractor shall perform bypass pumping to insure these “dry” observations are periodically made. It is required these dry observations be made for one (1) of every ten (10) segments (segment = manhole to manhole) unless approved otherwise by the ENGINEER.

B. Requirements

1. CCTV Inspection. The CONTRACTOR shall inspect the pipeline interior above the flow line using a color closed circuit television camera (CCTV) and document the inspection on a digital recorder.
2. Conveyance. The Contractor may mount the CCTV camera on either a wheeled or tracked crawler or on a specially designed floatation device. The crawler may be either tethered or free roving.
3. Data Management. All inspection video shall be submitted in MPEG file format (.mpg) and saved on CDs, DVDs, or external hard drives for submittal. Each inspected pipeline segment should have an associated MPEG file. Electronic PDF (.pdf) files of each inspection log and digital photographs (.jpg) files shall accompany the video inspections for each pipeline segment inspected. The nature of the inspections shall be to verify condition of the pipelines and to provide a permanent record of the existing pipeline condition as it relates to pipe dimensions, materials, obstructions, structural defects, connections, and deterioration.

1.2 QUALITY ASSURANCE

Contractor's Qualifications: The CONTRACTOR shall have a minimum of three years of experience in such work necessary to successfully meet this specification and provide references for five sewer inspection projects involving remote CCTV pan and tilt inspection of pipelines.

The CONTRACTOR shall have all CCTV operators who are responsible for logging defects into the data collection software successfully trained and certified through National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP).

The CONTRACTOR shall use CCTV defect logging software that is PACP-certified, which assures that the software can be used to export a database of all inspection and defect details that conform to the NASSCO PACP database standard. The CONTRACTOR shall add OWNER specific defect codes to the database as required to insure uniform defect identification and naming.

1.3 SUBMITTALS

The following submittals shall be provided in the proposal documentation:

1. Submit a list of five similar projects within the past three years that required remote pan and tilt inspection. The reference projects shall contain a minimum of 20,000 LF of CCTV pan and tilt inspection.
2. Submit resumes and project references for the field personnel who will be employed for this project, including the NASSCO PACP Certification number for each operator.
3. Submit an example of previous work for approval. The example shall consist of one CD or DVD of previous pipeline inspection work complete with audio commentary and inspection log(s). The submitted example shall be the work of the field supervisor or foreman to be used on this project. CONTRACTOR shall be responsible for modifications to equipment and/or inspection procedures to achieve report material of acceptable quality.
4. Manufacturer's product literature for all video equipment including but not limited to cabling, camera, monitor, footage counter, video titling device, and recorder.

PART 2 – PRODUCTS

2.1 TELEVISION CAMERA AND MONITOR

The camera(s) shall be operative in 100 percent humidity/submerged conditions. The CCTV camera equipment shall provide a view of the pipe ahead of the equipment and of features to the side and rear of the equipment through turning and rotation of the lens. The camera shall be capable of tilting at right angles along the axis of the pipe while panning the camera lens through a full circle about the circumference of the pipe. The lights on the camera shall also be capable of panning 90-degrees to the axis of the pipe. If the equipment proves to be unsatisfactory, it shall be replaced with adequate equipment. The camera unit shall have sufficient quantities of line and video cable to inspect sewers with access as far apart as 2,000 feet.

The television camera, electronic systems and monitor shall provide an image that meets the following specifications:

- A. The gray scale shall show equal changes in brightness, ranging from black to white with a minimum of five stages.

- B. With the monitor control correctly adjusted, the six colors- Yellow, Cyan, Green, Magenta, Red, and Blue, plus Black and White, shall be clearly resolved with the primary colors in order of decreasing luminance. The gray scale shall appear in contrasting shades of gray with no color tint.
- C. The picture shall show no convergence or divergence over the whole of the picture. The monitor shall be at least 13 inches diagonally across the picture tube.
- D. The live picture on the CCTV monitor shall be capable of registering a minimum of 500 lines horizontal resolution and be a clear, stable image with no interference.

Lighting intensity shall be remote controlled and shall be adjusted to minimize reflective glare. Lighting and camera quality shall provide a clear, in-focus picture of the entire inside periphery of the sewers and laterals for all conditions except submergence. Under ideal conditions (no fog in the pipeline) the camera lighting shall allow a clear picture up to five pipe diameter lengths away for the entire periphery of the sewer. The lighting shall provide uniform light free from shadows or hot spots.

Camera focal distance shall be remotely adjustable through a range of 6 inches to infinity.

The monitor and software shall also be able to capture and save screen images of typical pipeline details and all defects. Screen image files shall be named using pipeline segment number and footage and submitted on CDs, DVDs, or external hard drives following paragraph 3.08, this section.

2.2 VIDEO RECORDINGS

The video and audio recordings of the gravity main inspections shall be made using digital video equipment. The digital recording equipment shall capture pipeline inspection on CD, DVD, or external hard drive, with each segment inspection recorded as an individual movie file (.mpeg, .mpg). The files shall be named according to segment numbering system provided by the ENGINEER.

The audio portion of the composite CCTV video shall be sufficiently free from electrical interference and background noise to provide complete intelligibility of the oral report. Audio shall be recorded by the operating technician on the inspection video as the pipeline is inspected and shall include the pipeline segment identification number, location (address or cross streets) of starting point, inspection direction, length of inspection, flow information, complete descriptions of the gravity main conditions as they are encountered, and other relevant commentary to the inspections. In addition, the audio reports shall include the distance traveled on the specific run, a description of abnormal conditions in the pipeline as they are encountered, explanations for pausing, backing up, or stopping the survey, and the final measured distance. Audio dubbing after the inspection is prohibited.

The segments shall be inspected from upstream to downstream, wherever possible. The images recorded on the CCTV video shall be the same images that are required to be displayed on the CCTV monitor. The footage counter shall be zeroed at the beginning of each inspection and at

each intermediate access point along the inspection run. The video recorder shall be paused if the camera progress is stopped for a period longer than 30 seconds due to breakdown of the equipment, or any purpose other than analyzing conditions of the pipeline. The OPERATOR shall document the delay on the recording when progress resumes.

The equipment used for the inspection must provide for simultaneous monitoring of the in-pipeline inspection by the ENGINEER or OWNER.

Typed labels shall be attached to the face of each CD, DVD or external hard drive. The typed index labels shall include the following information:

- A. Content
- B. Contractor and Inspector name
- C. Type of survey
- D. Interceptor name and ID number
- E. Reaches included (Segment number, stationing)
- F. Date and Times of survey
- G. Work order number (if applicable)

The inspection video shall be delivered on a medium that is not re-recordable. CONTRACTOR shall maintain a copy of all inspection documentation (CDs/DVDs, databases, and logs) for the duration of the work and warranty period.

2.3 PRODUCT DATA

The CONTRACTOR shall provide the following information:

1. The inspection reports as specified in paragraph 3.08 shall be submitted each week covering the previous week's work.

PART 3 – EXECUTION

3.1 GENERAL

A. CCTV

The CCTV camera shall be positioned as close to the spring line as possible while maintaining the required equipment stability.

The speed that the camera or survey unit is conveyed through the pipeline while performing general inspections shall be uniform and shall be limited to a maximum of 30-feet per minute. During CCTV inspection, the survey unit shall be slowed, stopped, or backed-up to perform detailed inspections of significant features. The camera shall be stopped at all defects, changes in material, water level, size, side connections, junctions, or other unusual areas. When stopped at the defect or feature, the OPERATOR shall pan the camera to the area and along the circumference of the pipe. The OPERATOR shall also record audio of the type of defect or feature, clock position, footage, extent or other pertinent data. Still photographs or screen captures shall be

taken at all defects and general line condition photographs should be taken at least every 200 feet

During period of camera advancement along the reach, the OPERATOR should pan to view the flow line conditions along both sides of the pipe and the crown at regular intervals. This may be done while the camera is moving forward as long as the recorded picture quality is not adversely affected. When viewing the flow line area, the camera should be returned to the forward position providing a full view of the pipe before panning to view the opposite side of the pipeline or the crown conditions.

At the CONTRACTOR'S discretion or direction of the ENGINEER, the camera shall be stopped or backed up (when conditions allow) to view and analyze conditions that appear to be unusual or uncommon for a sound pipeline. The lens and lighting shall be readjusted, if need be, in order to ensure a clear, distinct, and properly lighted feature. The video recorder shall be paused if the camera progress is stopped for a period longer than 30 seconds due to breakdown of the equipment, or any purpose other than analyzing conditions of the sewer. The OPERATOR shall document the delay on the recording when progress resumes.

The CONTRACTOR shall be solely responsible for all safety and traffic control measures required.

3.2 LINEAR MEASUREMENT

The CONTRACTOR shall measure the camera progress along the full length of each segment. The length counter shall be zeroed at the beginning of each inspection, and at any intermediate access points. In the case of resuming an inspection at an intermediate point along the pipeline, the length counter shall start at the last point recorded. The CONTRACTOR shall ensure that the counter starts to register immediately when camera progress starts. Markings on the cable are not acceptable.

Prior to commencing inspections, the CONTRACTOR shall demonstrate compliance with the linear measurement tolerance specified below:

- A. The equipment shall measure the location of the survey unit in 1-foot increments from the beginning of each continuous section. This footage location must be displayed on the CCTV monitor and recorded.
- B. The accuracy of the measured location shall be within +/- 0.5% of the actual length of the pipeline segment being surveyed, or 1 foot, whichever is greater.

3.3 CCTV MONITOR DISPLAY

The images displayed on the CCTV monitors shall be a view of the pipe above the water surface as seen by the CCTV camera as the unit is conveyed through the pipeline.

The camera lighting shall be fixed in intensity prior to commencing the survey and the white balance set to the color temperature emitted. In order to ensure color constancy, ideally no variation in illumination shall take place during the survey.

3.4 DATA DISPLAYS

The CCTV images shall include an initial data display that identifies the sewer reach being surveyed and a survey status display that provides continuously updated information on the location of the survey unit as the survey is being performed. These data displays shall be in alphanumeric form. The size and position of the data shall not interfere with the main subject of the monitor picture.

The on-screen text display should be white during inspections where the background behind the display is dark and, conversely, black where the background is light.

At the beginning of each pipeline segment being inspected, the following information shall be electronically generated and displayed on the CCTV monitors as well as included in the audio track:

- A. Date of survey
- B. Interceptor name/identification number
- C. Segment identification number or stationing
- D. Direction of survey (upstream or downstream)
- E. Time of start of survey.

During inspections, the following information shall be electronically generated, automatically updated, and displayed on the CCTV monitors:

- A. Survey unit location in the pipeline in feet and tenths of feet from adjusted zero
- B. Pipeline diameter and corresponding manhole numbers as assigned by MUD.

3.5 PHOTOGRAPHS

- A. CCTV Inspection:

During CCTV inspections, screen captures shall be taken from the monitor images and saved electronically of typical conditions every 200 feet and at all defects. The screen capture shall have the interceptor name, segment identification number, survey direction, footage, and date when photograph was taken. The annotation shall be clearly visible and in contrast to its background, shall have a figure size no greater than 1/4-inch, and shall be type-printed. The annotation shall be positioned on the front of the photograph so as to not interfere with the subject of the photograph. Files shall be named using the segment identification numbers.

The image of the pipeline interior shall fill the photographic image. Photographs must clearly and accurately show what is displayed on the monitor, which shall be in proper adjustment. Where significant features exist within 6-feet of each other, one photograph shall be made to record these features. Where there is a continuous

feature, photographs shall not be taken at intervals of less than 6-feet unless absolutely necessary to show a change in the feature.

The images shall be kept electronically, copied to a CD, DVD, or external hard drive, and submitted with the inspection videos and logs per paragraph 3.08.

3.6 PIPELINE IDENTIFICATION, INSPECTION FORMS AND DEFECT CODES

The CONTRACTOR shall use the OWNER'S pipeline identification numbering system and the segment identification system when performing the inspections for this project, as provided by the ENGINEER. CCTV inspection defect codes shall conform to those specified in the NASSCO PACP specification.

3.7 PRE-CLEANING INSPECTIONS

If the survey unit cannot pass the entire pipeline segment from its starting direction, the reach shall be inspected as much as possible and the CONTRACTOR shall notify the ENGINEER immediately of the failure to complete and why inspection could not be completed. Prior authorization is required by the ENGINEER for cleaning outside of the specifications below before the CCTV inspection is completed.

If any CONTRACTOR equipment becomes stuck in the pipeline, the CONTRACTOR shall be responsible for all costs associated with extracting the equipment from the main, bypassing flow, repairs associated with extracting the equipment, and site restoration.

Any damages to public or private property resulting from CONTRACTOR activities shall be repaired by the CONTRACTOR at no cost to the OWNER, unless directly resulting from deteriorated pipe conditions under normal inspection conditions specified within these specifications.

If the CONTRACTOR finds a gravity main to be surcharged, the CONTRACTOR shall immediately notify the OWNER and the Owner's ENGINEER. At the direction of the ENGINEER, the CONTRACTOR may perform additional cleaning prior to CCTV inspection to clear the surcharge.

3.8 REPORT

Five copies of the inspection videos for each pipeline segment saved in mpeg format on CDs, DVDs, or external hard drives; electronic version (.jpg) of still photographs saved on CDs, DVDs, or external hard drives; a digital Microsoft Access database conforming to the NASSCO PACP database standard populated with all inspection and defect information; and hard copies and electronic PDF files of the inspection logs shall be submitted to the ENGINEER for review and approval. DVDs or sections thereof that do not conform to the specifications shall be re-recorded in the field at the CONTRACTOR'S expense. Original DVDs and re-recorded runs shall be edited to provide a record with all inspections in sequential order from upstream to downstream. DVDs not in sequential order are unacceptable.

The inspection report shall include video recordings, pictures and any OWNER required inspection forms and defect codes. Contractor shall provide equal documentation on both the videos and forms. CONTRACTOR shall maintain a copy of all report material. The CONTRACTOR

shall provide comments as necessary to fully describe the existing condition of the pipeline, both through the voice over on the videos and on the inspection forms. Photographs shall further document both typical pipeline features, and defects.

Payment will not be made for any work until the ENGINEER has received, reviewed and approved up to date copies of all report documentation items specified in this paragraph. The CONTRACTOR shall submit these report documentation items a minimum of 10 days in advance of any payment request to provide the ENGINEER ample time to review the files.

****END OF SECTION****

SECTION 200
SEWER CLEANING

PART1 – GENERAL

1.1 DESCRIPTION

A. Scope

This section specifies the requirements for cleaning of gravity sewers.

B. Requirements

The CONTRACTOR shall light clean identified gravity sewers of debris and grease accumulations prior to CCTV inspection. All materials dislodged during cleaning shall be removed from the sewer and disposed of by the CONTRACTOR. Sewer cleaning methods shall be approved high pressure hydraulic cleaning methods limited to 1,200 psi utilizing one to two passes of the line unless mechanical methods are approved by the ENGINEER for specific sewer sections. This should be performed in a manner to allow increased accessibility for inspection equipment.

Additional cleaning operations will only be conducted on gravity sewer sections identified by CCTV as requiring cleaning through additional negotiation with the OWNER and ENGINEER. The review of the gravity main inspections will determine whether the section requires additional heavy cleaning to be approved by the ENGINEER. Identification and removal of major blockages will be addressed through approval of the OWNER and the ENGINEER and will be addressed separately as the time arises.

1.2 HEAVY CLEANING

Heavy cleaning shall be defined as any cleaning requiring more than two passes of the cleaning equipment. Sections requiring heavy cleaning will be bypassed unless approved by the ENGINEER for heavy cleaning. All other cleaning, and additional cleaning not approved by the ENGINEER will be considered light cleaning for payment purposes.

After heavy cleaning is complete, the CONTRACTOR shall conduct a post-cleaning CCTV inspection to confirm that cleaning is complete. The CONTRACTOR shall provide the post-cleaning CCTV inspection video to the ENGINEER at the end of each week of work. Payment for heavy cleaning shall be the same as for light cleaning and be paid based on a minimum 2 pass hydraulic cleaning.

1.3 MAJOR BLOCKAGE

A major blockage shall be defined as an obstruction within the sewer which cannot be removed by cleaning with commercially available hydraulic cleaning equipment. Once identified by the contractor, clearing of the blockage will be completed under a separate negotiated price.

PART 2 – MATERIALS

2.1 EQUIPMENT

A. General

All equipment specified in this section shall be in good working condition and manufactured or fabricated to withstand the severity of the work covered under this section.

B. Hydraulic Cleaning

Hydraulic cleaning equipment shall be either truck mounted or mounted on specially adapted vehicles for use in easements or marshy areas. Water jet cleaning equipment shall include a water tank, auxiliary engine, pumps, and hydraulically driven hose reel. The CONTRACTOR shall provide a minimum of 600 feet of high pressure hose and a selection of high velocity nozzles, each having a capacity of 60 gallons per minute at working pressures of 1000 to 1500 pounds per square inch. Pressure to the nozzle shall be regulated by a relief valve adjustable from 1 to 1500 psi. Nozzles shall be capable of producing a jet stream angle of 15 to 45 degrees from the horizontal. The CONTRACTOR shall also provide a high velocity gun with sufficient discharge and pressure to thoroughly clean manhole interiors.

C. Root and Grease Removal

Extensive root and grease removal is not covered in this contract and will need to be negotiated if extensive blockages are observed that are determined to have immediate impacts on the performance of the gravity line. Sections blocked by significant root intrusion or grease build up will be recorded and reported to the ENGINEER immediately upon discovery and the survey will be stopped at this location and resumed at the next scheduled location. Additional work outside of the scope of the project will have to be negotiated with the OWNER as a separate contract.

D. Debris Disposal

For the purpose of this contract, debris is defined as materials or objects that are equal to or greater than 3 inches in diameter or length. CONTRACTOR shall provide suitable equipment to remove all debris dislodged during cleaning operations from the nearest downstream manhole. Equipment or methods which require a member, or members of the CONTRACTOR'S crew, to physically excavate debris from within the manhole are prohibited. All debris shall be promptly removed from the sewer from the nearest manhole and shall be disposed of off-site in a lawful manner at an OWNER approved location. Hauling containers shall be watertight.

PART 3 – EXECUTION

3.1 GENERAL

The CONTRACTOR shall at all times conduct his work so as to prevent any blockage and minimize surcharging in the sewer manholes and connecting sewer pipelines. Damage to existing facilities as a result of the CONTRACTOR'S work shall be promptly repaired at the CONTRACTOR'S expense except when caused by normal operating inspection conditions defined in the specs provided and as a result of deteriorated pipe conditions. If the CONTRACTOR'S work causes a Sanitary Sewer Overflow (SSO), the cost of the fines and penalties shall be assessed to the CONTRACTOR and be deducted from subsequent payments to the CONTRACTOR.

3.2 CLEANING

A. Debris Removal

During cleaning operations, the CONTRACTOR shall provide a means of catching and removing all debris equal to or greater than 3" diameter or length. The method chosen shall not allow the transport of debris to downstream sewer reaches.

All debris removed from the sewer may be temporarily stored until the day's end whereupon the CONTRACTOR shall be responsible for its proper disposal off site. All debris shall be removed at the end of each working day.

B. Special Debris Cleaning In Dewatered "Dry" Sewer Segments

In reaches (manhole to manhole segment) of sewer where inspection is required to be performed under "dry" conditions, the Contractor shall first clean the sewer with 2 passes of hydraulic cleaning. Upon completion of this, the segment (manhole to manhole) shall be plugged and bypass pumping started. Standing water in this segment shall then be pumped out and inspection performed.

At alternating locations where dry inspection is required (i.e every 10 manholes) the Contractor shall perform special cleaning of the bottom of the sewer line utilizing hydraulic cleaning equipment. This will require that the liquid contents remaining in the isolated segment be pumped out. Once the segment is dewatered, the Contractor shall reinsert the hydraulic cleaning equipment and clean up to 75 feet of sewer with emphasis placed on removal of deposited debris on the bottom of the sewer pipe. As this dislodged debris flows back to the receiving manhole, the Owner shall be responsible for providing a vacuum truck for removal of debris and shall transporting the debris to the Owners WWTP for final disposal. The Contractor shall give the Owner at least 24 hour notice prior to the time in which vacuum truck services are needed. After this special cleaning has been implemented, inspection of the entire segment of sewer shall be performed.

Payment for this special cleaning event shall be at the same unit price for regular light cleaning.

C. Root and Grease Removal

Cleaning for ENGINEER approved root and grease removal shall remove all manner of roots and root balls, and fats, oils and grease accumulations from the sewer. Sewer cleaning methods for root and grease removal may include chemical or mechanical methods.

****END OF SECTION****

SECTION 300
INSPECTION OF EXISTING MANHOLES

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope

The CONTRACTOR shall perform visual inspections of the project manholes and record any defect discovered. The visual inspection shall include surface conditions, manhole cover and frame, chimney, walls, invert and all appurtenances. The inspections will not require man-entry.

B. Requirements

The CONTRACTOR shall inspect the manhole surroundings and the manhole interior using visual means and a pole mounted color closed circuit television camera (CCTV) and document the inspection on a digital recorder. All inspection video shall be submitted in MPEG file format (.mpg) and saved on CDs, DVDs, or external hard drives for submittal. Each inspected manhole should have an associated MPEG file. Electronic PDF (.pdf) files of each inspection log and digital photographs (.jpg) files) shall accompany the video inspections for each manhole inspected. The nature of the inspections shall be to verify the physical condition of the manhole and to provide a permanent record of the existing condition as it relates to dimensions, materials, obstructions, breakage, connections, and deterioration.

1.2 QUALITY ASSURANCE

CONTRACTOR'S Qualifications: The CONTRACTOR shall have a minimum of three (3) years of experience in such work necessary to successfully meet this specification and provide references for five (5) manhole inspection projects involving pole mounted CCTV inspection and MACP defect coding.

The CONTRACTOR shall have all OPERATORS who are responsible for logging defects into the data collection software successfully trained and certified through National Association of Sewer Service Companies (NASSCO) Manhole Assessment and Certification Program (MACP).

The CONTRACTOR shall use CCTV defect logging software that is PACP/MACP-certified, which assures that the software can be used to export a database of all inspection and defect details that conform to the NASSCO MACP database standard. The CONTRACTOR shall add OWNER specific defect codes to the database as required to insure uniform defect identification and naming.

1.3 SUBMITTALS

The following submittals shall be provided by the CONTRACTOR in the proposal package:

- A. Submit list of five (5) similar projects within the past three (3) years that required pole mounted camera inspection. The reference projects shall contain a minimum of 200 manholes of pole mounted CCTV and MACP defect coding.
- B. Submit resumes and project references for the field personnel who will be employed for this project, including the NASSCO MACP Certification number for each OPERATOR.
- C. Submit an example of previous work for approval. The example shall consist of one CD or DVD of previous sewer inspection work complete with audio commentary and the MACP inspection log(s). The submitted example shall be the work of the field supervisor or foreman to be used on this project. CONTRACTOR shall be responsible for modifications to equipment and/or inspection procedures to achieve report material of acceptable quality.
- D. Manufacturer's product literature for all video equipment including but not limited to cabling, camera, monitor, video titling device, and recorder.

PART 2 – PRODUCTS

2.1 TELEVISION CAMERA FOR POLE MOUNTED CCTV AND MONITOR

The camera(s) shall be operative in 100 percent humidity/submerged conditions. The CCTV camera equipment shall provide a view of the manhole walls and of features within the manhole. The camera shall be capable of rotating 360 degrees to record the entire manhole circumference. The camera optics shall be digitally balanced to filter out vibration and operator movements while lowering the camera and thereby provide a smooth recording of the interior of the manhole. If the equipment proves to be unsatisfactory, it shall be replaced with adequate equipment. The pole mounted camera unit shall have sufficient length of pole and video cable to inspect manholes up to 24 feet deep.

The television camera, electronic systems and monitor shall provide an image that meets the following specifications:

- A. The gray scale shall show equal changes in brightness ranging from black to white with a minimum of five stages.
- B. With the monitor control correctly adjusted, the six colors- Yellow, Cyan, Green, Magenta, Red, and Blue, plus Black and White, shall be clearly resolved with the primary colors in order of decreasing luminance. The gray scale shall appear in contrasting shades of gray with no color tint.
- C. The picture shall show no convergence or divergence over the whole of the picture. The monitor shall be at least 13 inches diagonally across the picture tube.
- D. The live picture on the CCTV monitor shall be capable of registering a minimum of 500 lines horizontal resolution and be a clear, stable image with no interference.

Lighting intensity shall be remote controlled and shall be adjusted to minimize reflective glare. Lighting and camera quality shall provide a clear, in-focus picture of the entire inside periphery of the sewers and laterals for all conditions except submergence. Under ideal conditions (no fog in the manhole) the camera lighting shall allow a clear picture of the walls for manholes up to 6 feet in diameter. The lighting shall provide uniform light free from shadows or hot spots.

Camera focal distance shall be remotely adjustable through a range of 6 inches to infinity.

The monitor and software shall also be able to capture and save screen images of typical manhole details and all defects. Screen image files shall be named using the manhole number and submitted on CDs, DVDs, or external hard drives following paragraph 3.06, this section.

2.2 VIDEO RECORDINGS

The video and audio recordings of the manhole inspections shall be made using digital video equipment. The digital recording equipment shall capture the manhole inspection on CD, DVD, or external hard drive, with each manhole inspection recorded as an individual movie file (.mpeg, .mpg). The files shall be named according to manhole numbers or per requirements established elsewhere in the Specifications.

The audio portion of the composite video shall be sufficiently free from electrical interference and background noise to provide complete intelligibility of the oral report. Audio shall be recorded by the operating technician on the inspection video as the manhole is inspected and shall include the manhole location, identification of the manhole including location (address or cross streets), flow information, complete descriptions of the manhole conditions as they are encountered, description of the surrounding surface conditions and other relevant commentary to the inspections. In addition, the audio reports shall include the diameter of the manhole, a description of abnormal conditions in the manhole as they are encountered, explanations for pausing, backing up, or stopping the survey, and the final measured depth of the manhole. Audio dubbing after the inspection is prohibited.

Typed labels shall be attached to the face of each CD or DVD. The typed index labels shall include the following information:

- A. Content (CCTV)
- B. Contractor and Inspector name
- C. Type of survey (CCTV)
- D. Manhole identification number
- E. Street address or easement name and interceptor name
- F. Date and Time of survey
- G. Work order number (if applicable)

The inspection video shall be delivered on a medium that is not re-recordable. CONTRACTOR shall maintain a copy of all inspection documentation (CDs/DVDs, databases, and logs) for the duration of the work and warranty period.

2.3 PRODUCT DATA

The CONTRACTOR shall provide the following information during implementation of the work:

- A. TV inspection reports as specified in paragraph 3.06 shall be submitted each week covering the previous week's work.

PART 3 – EXECUTION

3.1 GENERAL

The inspection crew shall mobilize to the site of the manhole survey and immediately establish traffic control measures as appropriate as well as any measures required to protect pedestrians. The crew shall then visually inspect the surrounding area. Site conditions shall be photographed and noted in the log and reporting form.

Upon opening the manhole cover, insert a hazardous atmosphere monitor and record the conditions within the manhole. Take a photograph of the manhole interior in plan view showing the general arrangement of the incoming and outgoing sewers, manhole rungs and other appurtenances, with flow running from the bottom to the top of the photograph.

The pole mounted CCTV camera shall be lowered into the manhole while maintaining the required equipment stability. The camera shall be constantly and smoothly rotated while being lowered into the manhole in order to capture images of the entire interior of the manhole. The speed that the camera is rotated and lowered through the manhole while performing general inspections shall be uniform and shall be limited to a maximum of two vertical feet per minute. The survey unit shall be slowed, stopped, or backed-up to perform detailed inspections of significant features. The camera shall be stopped at all defects, changes in material, or other unusual areas. When stopped at the defect or feature, the OPERATOR shall zoom to the area if required to provide a clear view of the defect or feature. The OPERATOR shall record audio of the type of defect or feature, clock position, depth, extent or other pertinent data. Still photographs or screen captures shall be taken at all defects and general condition photographs should be taken at least every four vertical feet. All defects shall be coded using MACP.

When the CCTV camera has reached the invert of the manhole, the OPERATOR shall record the depth from the manhole rim to the invert. The camera should then be pointed into the upstream sewer reach and the focus zoomed and lighting increased as much as possible to view general conditions within the sewer. Any obvious blockages or defects should be noted. The camera will then be rotated to view the downstream sewer reach and then to any branch sewers.

At the CONTRACTOR'S discretion or direction of the ENGINEER, the camera shall be stopped or raised up to view and analyze conditions that appear to be unusual or uncommon for a sound manhole. The lens and lighting shall be readjusted, if need be, in order to ensure a clear, distinct, and properly lighted feature. The video recorder shall be paused if the camera progress is stopped for a period longer than 30 seconds due to breakdown of the equipment, or any purpose other than analyzing conditions of the manhole. The OPERATOR shall document the delay on the recording when progress resumes.

The CONTRACTOR shall be solely responsible for all safety and traffic control measures required.

3.2 DATA DISPLAYS

The CCTV images shall include an initial data display that identifies the sewer reach being surveyed and a survey status display that provides continuously updated information on the location of the survey unit as the survey is being performed. These data displays shall be in alphanumeric form. The size and position of the data shall not interfere with the main subject of the monitor picture.

The on-screen display should be white during inspections where the background behind the display is dark and, conversely, black where the background is light.

At the beginning of each manhole being inspected, the following information shall be electronically generated and displayed on the CCTV monitors as well as included in the audio track:

- A. Date of survey
- B. Interceptor name/location
- C. Manhole identification number
- D. Street address or easement identification
- E. Time of start of survey

During inspections, the following information shall be electronically generated, automatically updated, and displayed on the CCTV monitors:

- A. Manhole identification number
- B. Date of survey

3.3 PHOTOGRAPHS

During the initial surface site inspection, photographs shall be taken of the manhole cover showing location within the roadway, shoulder or easement as appropriate. Photographs shall be taken of any indications of previous overflows such as water marks and paper or other debris typical of sewer overflows. Photographs shall be taken of any unusual conditions in the area of the manhole including potential obstructions to maintenance crews, damaged property or other unusual conditions.

During CCTV inspections, screen captures shall be taken from the monitor images and saved electronically of typical conditions and at all defects. The screen capture shall have the manhole identification number, street address or easement name, interceptor identification and date when photograph was taken. The annotation shall be clearly visible and in contrast to its background, shall have a figure size no greater than 1/4-inch, and shall be type-printed. The annotation shall be positioned on the front of the photograph so as to not interfere with the subject of the photograph. Files shall be named using manhole identification numbers.

Photographs must clearly and accurately show what is displayed on the monitor, which shall be in proper adjustment. Where significant features exist within 6-feet of each other, one

photograph shall be made to record these features. Where there is a continuous feature, photographs shall not be taken at intervals of less than 6-feet unless absolutely necessary to show a change in the feature.

The images shall be kept electronically, copied to a CD, DVD, or external hard drive, and submitted with the inspection videos and logs per paragraph 3.06.

3.4 MANHOLE NUMBERING, INSPECTION FORMS AND DEFECT CODES

The CONTRACTOR shall use the OWNER's manhole numbering system when performing the inspections for this project. Defect codes shall conform to those specified in the NASSCO MACP specification.

3.5 SITE RESTORATION

After inspecting manholes in an area, the WORK site shall be cleaned and restored to pre-WORK conditions. If a manhole had been previously sealed by the OWNER, the CONTRACTOR shall reapply an OWNER approved sealant to the manhole frame and cover.

3.6 REPORT

Five copies of the inspection videos in sequential order saved in mpeg format on CDs, DVDs, or external hard drives; electronic version (.jpg) of still photographs saved on CDs, DVDs, or external hard drives; a digital Microsoft Access database conforming to the NASSCO MACP database standard populated with all inspection and defect information; and hard copies and electronic PDF files of the inspection logs shall be submitted to the ENGINEER for review and approval. DVDs or sections thereof that do not conform to the specifications shall be re-recorded in the field at the CONTRACTOR'S expense. Original DVDs and re-recorded runs shall be edited to provide a record with all inspections in sequential order from upstream to downstream. DVDs not in sequential order are unacceptable.

The TV inspection report shall include video recordings, pictures and any OWNER required inspection forms and defect codes. CONTRACTOR shall provide equal documentation on both the videos and forms. CONTRACTOR shall maintain a copy of all report material. The CONTRACTOR shall provide comments as necessary to fully describe the existing condition of the manhole, both through the voice over on the videos and on the inspection forms. Photographs shall further document both typical site and manhole features, and defects. The photographs shall be copied to a CD, DVD, or external hard drive and submitted to the ENGINEER along with the videos and logs.

****END OF SECTION****