

INVITATION FOR BIDS
IFB NO. 2017-63
ON-CALL SEWER REHABILITATION CONSTRUCTION (OCSRC)
Capital Project No. S6232

OPENING: MAY 3, 2017 AT 11:00 A.M.
PRE-BID CONFERENCE: APRIL 18, 2017 AT 10:00 A.M.

BUYER: ROBERT BOWINS, SENIOR BUYER
PHONE: 410-313-6375 ▪ EMAIL: rbowins@howardcountymd.gov



HOWARD COUNTY, MARYLAND

OFFICE OF PURCHASING

6751 Columbia Gateway Drive, Suite 501, Columbia, MD 21046
www.howardcountymd.gov/departments/county-administration/purchasing



Formal IFBs and IFB Results are available on our website

KEY INFORMATION SUMMARY

IFB No.:	2017-63
IFB Name:	On-Call Sewer Rehabilitation Construction (OCSRC)
Issue Date:	April 3, 2017
Buyer:	Robert Bowins rbowins@howardcountymd.gov 410-313-6375
Pre-Bid Date:	April 18, 2017 at 10:00 A.M.
Pre-Bid Location	Engineering Conference Room, Dorsey Building 9250 Bendix Road Columbia, MD 21045
Questions Due and to Whom:	Questions due no later than 4:00 p.m. on April 21, 2017 Submit questions to: Robert Bowins at rbowins@howardcountymd.gov
Bid Due:	May 3, 2017 PRIOR TO 11:00 A.M.
Mail/Deliver Bids to the Issuing Office:	Office of Purchasing 6751 Columbia Gateway Dr., Ste. 501 Columbia, MD 21046 410-313-6370
Agreement Term:	Per specifications
Bid Deposit/ Performance Bond:	Yes, both are required. Refer to Section A, paragraph(s) 4 and 5
EBO Subcontracting Participation:	10% Refer to Section F, Bid Submittals

MINORITY BUSINESS ENTERPRISES are encouraged to respond to this solicitation. For more information, please contact Mahesh Sabnani, Equal Business Opportunity Coordinator, at 410-313-3694.

INFORMATION FOR CONTRACTORS

CONTENTS

<u>PARAGRAPH</u>	<u>TITLE</u>	<u>PAGE NO.</u>
1.	Submission of Bid Documents	A-1
2.	Pre-bid Meeting	A-2
3.	Project Manager	A-2
4.	Bid Deposit	A-2
5.	Performance / Payment Bond	A-2
6.	Bidder's Qualifications	A-3
7.	Method of Award	A-3
8.	Work Schedule	A-3
9.	Prohibitions Against Discrimination	A-4
10.	Cooperative Purchasing	A-4
11.	Protest	A-5
12.	Authority	A-5
13.	Maryland Registration	A-5
14.	Background Checks and Investigations (for Services Only)	A-5

INFORMATION FOR CONTRACTORS

1. SUBMISSION OF BID DOCUMENTS

- 1.1 This Invitation to Bid requires the return of all Bid Submittals, Section "F". Failure to return the required documents may be cause for rejection of bid.
- 1.2 The required bid documents shall be submitted, in Duplicate (an Original and 1 Copy), to the Howard County Office of Purchasing, Gateway Building, 6751 Columbia Gateway Drive, Suite 501, Columbia, MD 21046 no later than the date and time specified in the Notice of Letting. Unless otherwise specified, all formal bids submitted shall be irrevocable for 60 calendar days following the bid opening date.
- 1.3 Each bid must be submitted in a sealed envelope plainly marked to indicate its contents. The envelope shall be addressed to the Howard County, Maryland, Office of Purchasing at the address noted on the Notice of Letting and shall include the project name, capital project number (contract number if applicable), the bid opening date and the time of bid opening on the envelope. All bids shall be filed prior to the time and at the place specified in the Invitation for Bids, as amended by any applicable addenda. Bids received after the time of opening of bids will be returned to the Bidder unopened.
- 1.4 Proposals made on anything other than the attached documents will not be considered. Changes in phraseology of the proposal, additions, or limiting provisions, will render the proposal nonresponsive and may cause its rejection.
- 1.5 Each bid shall be accompanied by the Affidavit regarding price fixing, gratuities, bribery, and discriminatory employment practices in accordance with Section E.1.c. (3)(b) of the Howard County Purchasing Manual. When the Contractor is a corporation, a duly authorized representative of said corporation shall execute the Affidavit. The Affidavit is provided in the solicitation package.
- 1.6 The Foreign Services Disclosure Form must accompany bids for construction-related services, architectural services, engineering services and energy performance contract services of \$2 million or more. Section 12-111 of the Maryland State Finance and Procurement Article requires bidders to local governments to make certain disclosures regarding plans, at the time the bid is submitted, to perform any services under the contract outside the United States. When applicable, the Foreign Services Disclosure form is provided in the solicitation package.
- 1.7 All bidders must be familiar with the general conditions, terms, and regulations for the bid. In case of conflicts between the contract documents, the order of precedence shall be: (1) Addenda to Invitations for Bids; (2) Information for Contractors; (3) Special Provisions; (4) Plans (Drawings); (5) Technical Specifications; (6) Volume IV Design Manual, Standard Specifications and Details for Construction; (7) SHA Standard "Standard Specifications for Construction and Materials" (January, 2008).
- 1.8 If a discrepancy in or omission from the specifications is found, or if a Contractor is in doubt as to their meaning, or feels that the specifications are discriminatory, the

Contractor shall notify the Buyer in writing not later than ten (10) days prior to the scheduled opening of bids. Exceptions taken do not obligate the County to change the specifications. The Issuing Office will notify all Contractors of any changes, additions or deletions to the specifications by addenda.

- 1.9 The submission of a proposal on this work and service will be considered as a representation that the bidder has carefully investigated (1) all conditions which affect or may, at some future date, affect the performance of the work or services covered by the proposal, (2) the entire area to be serviced as described in the attached specifications and other contract documents and that the bidder is fully informed concerning the conditions to be encountered; and (3) the character, quality and quantity of work to be performed and equipment and materials to be furnished. Also, that the bidder is familiar with all Federal, State, and County laws, all codes and ordinances of the County which in any way affect the prosecution of the work or persons engaged or employed in the work or the materials and equipment used in the work.
- 1.10 Any quantities given under the various items of the proposal are approximate only and subject to increase or decrease, as provided in the contract, without changing the unit prices to be paid for the work.
- 1.11 Bidders must not change any item in the proposal for which the County has stipulated a price. Any such change will cause rejection of the proposal.
- 1.12 The right is hereby reserved to reject any or all proposals, and to waive informalities as the interest of the County may require.

2. **PRE-BID MEETING**

A pre-bid meeting will be held at the date and time specified in the Key Information Summary in the Engineering Conference Room of the Thomas Dorsey Building at 9250 Bendix Road, Columbia, Maryland 21045. Bidder attendance is not required but strongly encouraged.

3. **PROJECT MANAGER**

The Howard County Project Manager for this contract is Ms. Silver Chai, telephone number: (410) 313-6121.

4. **BID DEPOSIT**

A bid deposit, in the form of a certified check, cashier's check, or bid bond, shall accompany this proposal. The bid deposit shall be 2% of the total bid for Total Bids less than \$100,000, and 5% of the total bid for Total Bids of \$100,000 and greater, made payable to "Director of Finance, Howard County."

5. **PERFORMANCE/PAYMENT BOND**

A performance bond and payment bond for the full amount of the contract price shall be required of the successful bidder within 10 days after award notification. Said bond shall be issued by a surety company subject to approval of Howard County.

6. BIDDER'S QUALIFICATIONS

- 6.1 Bidders shall have at least five (5) years of experience in cured in place pipe (CIPP) gravity sewer lining, lateral lining and manhole rehabilitation and shall be primarily engaged in CIPP sewer lining field. In addition, prospective bidders shall have successfully completed at least twenty-five (25) similar projects involving the same material, equal size, and comparable length. A minimum of 150,000 linear feet of sewer mains between 6 inches to 24 inches and a minimum of 5,000 liner feet of sewer mains between 27 inches to 48 inches of installation is required, using the proposed CIPP rehabilitation process. The lead personnel including the superintendent, the foreman and the lead crew personnel for CCTV inspection, resin wet-out, the CIPP liner installation, liner curing and the robotic service reconnections each must have a minimum of three (3) years of total experience. Personnel replaced by the contractor shall have similar verifiable experience as the personnel originally submitted for the project. Bidders shall document this experience on the Qualifications Questionnaire (Section F), and provide a detailed list of recently completed projects meeting the specified experience requirements. The experience of owner(s) may be imputed to a newly formed company/contractor provided the owner(s) has/have at least five (5) years of demonstrated experience of reliability and meets the criteria set forth herein.
- 6.2 The Qualifications Questionnaire shall be completed by all Bidders. Only the information contained in the Qualifications Questionnaire will be considered in evaluating the Bidder's qualifications. Attachments (unless specifically requested), company brochures or submittals in any other format will not be considered in evaluating the qualifications of the Bidder. Bidders may reproduce sections of the Qualifications Questionnaire form as needed to provide the required information necessary to adequately demonstrate their experience.
- 6.3 The County reserves the right to check references furnished and consider the responses received in determining award of this bid. The County will not contact Bidders for clarifications of illegible information, wrong names, wrong phone numbers, or wrong addresses provided by Bidders on the Qualifications Questionnaire. Incomplete submittals or unverifiable information may not be considered in the evaluation.
- 6.4 The County reserves the right to inspect the Bidders' equipment, request resumes or past work histories of key personnel or to interview key personnel to be assigned to this contract.
- 6.5 Contracts shall be awarded to the lowest responsive and responsible bidders meeting all the specifications. In accordance with Howard County Code Sec. 4.117 (a) (4), the quality of performance of previous contracts or services shall be considered in determining the lowest responsive and responsible bidder. The County reserves the right to reject any bid deemed not responsible or non-responsive.

7. METHOD OF AWARD

Howard County intends to make multiple awards to the lowest responsive responsible bidders meeting all the specifications, having submitted all the required documents, and meeting all necessary experience and reference requirements for the Total Bid.

8. WORK SCHEDULE

8.1 The County observes a five-day workweek and the following holidays:

January 1	New Year's Day
January (3 rd Monday)	Martin Luther King Day
February (3 rd Monday)	President's Day
March/April	Good Friday
May (fourth Monday)	Memorial Day
July 4	Independence Day
September (1 st Monday)	Labor Day
October (2 nd Monday)	Columbus Day
November 11	Veterans Day
November (4 th Thursday)	Thanksgiving Day
November (4 th Friday)	Day after Thanksgiving
December 25	Christmas Day

8.2 If any holiday occurs on Sunday, the following Monday shall be considered a holiday. If the holiday occurs on Saturday, the Friday immediately preceding shall be considered a holiday.

8.3 The Contractor will not be permitted to work on the above-mentioned holidays or Saturdays unless requested 48 hours in advance by written notice. The Engineer will authorize this in writing and the Contractor will not be charged for the inspector's time. In the event that the Contractor fails to work its forces as indicated in its written request, it shall be charged a minimum of one-half (1/2) day for inspection time at the overtime rate.

8.4 The normal number of working hours per day on this contract will be limited to nine (9), unless otherwise authorized by the Engineer in writing.

8.5 In case of emergency, which may require that work be done on Saturdays, Sundays, Holidays, or longer than nine hours per day, the Contractor shall request permission of the Engineer to do so. If, in the opinion of the Engineer, the emergency is bona fide, he will grant permission to the Contractor to work such hours as may be necessary. Also, if in the opinion of the Engineer a bona fide emergency exists, he may direct the Contractor to work such hours as may be necessary whether the Contractor requests permission to do so or not.

9. PROHIBITIONS AGAINST DISCRIMINATION

The Contractor and all subcontractors shall not engage in any unlawful employment practice prohibited by law in connection with the work to be done under this contract. The Contractor shall not discriminate against any employee or applicant on the basis of race, creed, color or national origin. The Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to race, creed, color or national origin.

10. COOPERATIVE PURCHASING

10.1 The County reserves the right to extend all of the terms, conditions, specifications, and unit or other prices of any contract resulting from this bid to any and all public bodies, subdivisions, school districts, community colleges, colleges and universities including non-public schools. This is conditioned upon mutual agreement of all parties pursuant to special requirements which may be appended thereto. The supplier/Contractor agrees to notify the issuing body of those entities that wish to use any contract resulting from this bid and will also provide usage information, which may be requested.

10.2 The County assumes no authority, liability or obligation, on behalf of any other public or non-public entity that may use any contract resulting from this bid. All purchases and payment transactions will be made directly between the Contractor and the requesting entity. Any exceptions to this requirement must be specifically noted in the bid response.

11. PROTEST

Any protest concerning the award of an Agreement shall be decided by the County. Protests shall be made in writing to the Issuing Office and shall be filed within ten days of issuance of award notification. A protest is considered filed when received by the Issuing Office. The written protest shall include the name and address of the protestor, identification of the procurement, a statement of the specific reason for the protest and supporting exhibits. The Issuing Office will respond to the written protest within ten days. The County's decision is final.

12. AUTHORITY

Solicitations are issued pursuant and subject to the provisions of Article VIII, Howard County Charter; Sections 4.100 through 4.123, Howard County Code, 2003; and the rules and regulations as prescribed by the County.

13. MARYLAND REGISTRATION

Contractors must be registered to do business in, and must be in good standing in, the State of Maryland. Contractors not registered must obtain registration information from the Maryland Department of Assessments and Taxation website at: www.dat.state.md.us/ or by calling 410-767-1184 or Toll Free 888-246-5941.

14. BACKGROUND CHECKS AND INVESTIGATIONS

14.1 If a Contractor's employees are on-site in County buildings working without a County escort each employee of the Contractor shall agree to a background check or investigation consisting of national criminal database search covering misdemeanors and felonies and the release of that information to the County in the event that it is required.

14.2 The Contractor shall assume the cost to have background checks done for each employee assigned to each facility. The County may bill the Contractor \$100 for each standard background check. Public safety buildings require a higher level of security and an in-depth background checks referred to as "investigations". The County may bill the Contractor \$250 for each in-depth background investigation. This fee, when billed to the

Contractor, shall be payable to the County prior to the check or investigation being conducted.

- 14.3 The background checks or investigations shall include all employees, new employees, subcontractors and replacement employees to be done prior to assignment of a building. The checks or investigations will be conducted by the County. The Contractor shall submit the proper forms (provided by the County) to the appropriate County agency, which will be determined if background checks or investigations are necessary.
- 14.4 The Contractor shall not assign any individual convicted of the following offenses which shall include, but are not limited to: Abduction, Homicide, Rape, Aggravated Assault, Sex Offender, Assault with Intent to Murder, or Assault with Intent to Rob.
- 14.5 The Contractor shall not assign any individual convicted, or having incomplete probation for the following offenses which shall include, but are not limited to: Burglary, Breaking and Entering, Carrying or Wearing a Weapon, Destruction of Property, Possession of a Controlled Dangerous Substance with Intent to Distribute, Explosives, Kidnapping, Theft/Larceny, Maiming, Manslaughter, Sexual Assault, Hate Crimes, Robbery, and Distribution of a Controlled Substance.
- 14.6 The Contractor reserves the right to seek exception to the above guidelines governing acceptability for assignment to the facility by providing documented specifics pertaining to convictions of the employee in question. The County will, at its sole discretion, accept or reject the requested exception.

GENERAL CONDITIONS

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The Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction, approved and adopted on May 7, 2007 and all subsequent amendments are hereby made a part of this contract. Where reference is made herein or on the Contract Drawings to the Standard Specifications, or Details, it shall be interpreted to refer to the above Howard County Specifications.

Where reference is made to the General Conditions, it shall refer to the General Conditions contained in the above referenced Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction.

SPECIAL PROVISIONS

SPECIAL PROVISIONS

1. GENERAL

- A. The Special Provisions are hereby made a part of the contract. In the event of a conflict between this and any portions of the contract documents, refer to the Section titled Submission of Bid Documents of DOCUMENT A, INFORMATION FOR CONTRACTORS, and Section 4.02 of the General Conditions, Howard County Design Manual Volume IV Standard Specifications and Details for Construction.
- B. The Contractor shall maintain on the site at all times copies of the following documents: complete construction plans, complete construction specifications, all addenda issued during the bidding process, the latest edition of the Howard County Design Manual Volume IV Standard Specifications and Details for Construction with all amendments, State Highway Administration Standard Specifications for Construction and Materials latest edition and the current applicable Maryland Standards and Specifications for Soil Erosion and Sediment Control and latest supplements for the duration of construction of this contract.

2. SCOPE OF WORK

- A. The scope of work to be done under this contract consists of On-Call Sewer Rehabilitation valued at under \$500,000 per project. The projects may include but are not limited to sanitary sewer rehabilitation involving: furnishing of all television inspection, cleaning, design data, material, transportation, labor, equipment, tools and incidental items of work as specified, or as directed by the Engineer necessary for the rehabilitation of existing sanitary sewers and laterals ranging from 4-inch to 48-inch in diameter using the cured in place pipe method and rehabilitation of standard size manholes by monolithic spray-application of a high-build, solvent-free epoxy coating of varying depths. The contract will be a requirements contract and as such the work assignments may be urgent and on an as-needed basis. Work under the contract will be in various locations throughout the County. The Contractor must be able to proceed with the work within two (2) weeks' notice upon receipt of direction from the County.
- B. The plans and specifications are intended to cover a complete project including the testing of pipelines, equipment and appurtenances. It should be distinctly understood that failure to mention specifically any work that would naturally be required to complete the project shall not relieve the Contractor of his responsibility to perform such work.

3. TEST DRILLING PRIOR TO SUBMISSION OF BIDS

Any Contractor desiring to conduct test drilling prior to submitting bids shall contact the Bureau of Engineering, Construction Inspection Division prior to performing any test drilling. The Contractor shall be responsible for obtaining all required permits, rights of entry, permission statements and notification of proper authorities including Miss Utility prior to conducting any test drilling. For test drilling within the State Highway Administration (SHA) rights-of-way, it shall be the Contractor's responsibility to obtain permission from the SHA to perform test drilling

prior to submission of bids. For test drilling within Howard County road rights-of-way, it shall be the Contractor's responsibility to obtain required permit(s) from the Bureau of Engineering, Construction Inspection Division to perform test drilling prior to the submission of bids. The Contractor shall be solely responsible for all damages and repairs and restoration of surfaces disturbed during the test drilling operations.

4. **MONTHLY PAYMENTS**

Monthly payments will be made in accordance with Section GC-9.03, Progress Payments, of the General Conditions.

5. **ADDENDA**

- A. Should one or more addenda be issued during the bidding period of this contract, a certification of receipt shall accompany such addenda.
- B. All certifications of receipt of addenda must be signed by the bidder and accompany the proposal form which also shall indicate that the bid prices reflect all changes as a result of these addenda; otherwise, the proposal will not be accepted. See Section F - SUBMITTALS, Proposal, for certification of addenda.
- C. The bidder may verify the number of addenda issued by contacting the Howard County Department of Public Works, Bureau of Engineering, Utility Design Division, telephone (410) 313-2040.

6. **CONSTRUCTION STAKEOUT**

- A. Survey benchmarks and traverse point locations are noted on the plans along with the corresponding elevations and coordinate locations. A stakeout table is shown on the plans providing coordinate locations of the various components of the proposed facility. The Contractor shall protect the benchmarks and traverse points during construction of the facility.
- B. The Contractor shall perform construction stakeout using the services of a Professional Land Surveyor or Property Line Surveyor licensed in the State of Maryland (Licensed Surveyor). The Contractor shall provide all necessary lines, grades and elevations for the proposed construction and conform his work thereto. The Contractor shall furnish all necessary materials and labor for the setting of all stakes, grade-boards, lines, forms, etc., which may be required for the proper construction of the work.
- C. The Contractor shall provide a stakeout of the proposed facilities as indicated in the contract documents and prepare all necessary cut sheets. The stakeout and cut sheets shall be provided at a minimum spacing of 50-foot intervals. Stakeout and cut sheets along curved alignments shall be provided at a minimum spacing of 25 foot. Cut sheets shall be prepared based on the lines and grades shown on the contract drawings; any modifications required to comply with approved laying schedules shall be the responsibility of the Contractor. Two (2) copies of the cut sheets shall be provided to the Engineer a minimum of 2 days prior to their use.

- D. The Contractor shall preserve and maintain in proper position all stakes, grade-boards and lines until authorized to remove them. In case any are disturbed, the Contractor shall reset those so disturbed at his expense.
- E. Any work done without cut sheets, lines, levels and instructions having been given by a Licensed Surveyor, or without the supervision of the inspector, shall not be estimated or paid for except when such work is authorized by the Engineer. Work so done may be ordered removed and replaced at the Contractor's cost.
- F. Finished surfaces, in all cases, shall conform to the lines and grades as shown on the approved plans. Manhole frames, valves, boxes, etc. shall be set to conform with the finished grade of the street, or as shown on the drawings.
- G. The Contractor shall define the right-of-way, easement line or limits of disturbance (L.O.D.) of the project promptly upon request.

7. **FIXED PRICE CONTINGENT ITEMS**

Fixed price contingent items have been included as part of this contract as shown in the proposal. The County hereby reserves the right to unlimited increases or decreases to the quantities of the fixed price items without unit price increases for the duration of this contract. Reference is made to Section 130 - Fixed Price Contingent Items of the Standard Specifications.

8. **SUBSURFACE DATA**

Howard County has obtained data concerning subsurface materials or conditions through the use of soundings, test pits, test borings or other methods for its own use in designing the project. The County does not guarantee the accuracy or completeness of the data, which is available to others for information purposes. Boring and test pit data included in the Specifications as an Appendix are provided for information only. The Contractor shall release the County and Engineer from any responsibility or obligation as to its accuracy or completeness or for any additional compensation for work performed under this contract due to assumptions based on use of such furnished information. The Contractor shall assume all responsibility in excavating for this project and shall not rely on subsurface information obtained directly or indirectly from the Engineer or from the County. Bidders shall make their own investigations of existing subsurface conditions. Neither the County nor the Engineer will be responsible in any way for additional compensation for excavation work performed under the contract due to Contractor's assumptions based on subsurface or test pit data prepared solely for the Engineer's use.

9. **EXCAVATION**

- A. Excavation work under this contract is unclassified, and includes (without limitation thereto) excavation and removal of all soil, shale, rock, boulders, existing foundations, fill and every kind of subsurface condition encountered in the contract area. Excavation work under this contract also includes the removal of surface and groundwater.
- B. No extra or additional compensation for excavation will be paid under this contract for work included in the bid proposal at the time of bidding.

10. **CLASS 3 EXCAVATION**

For the purpose of this contract, Class 3 Excavation shall pertain only to excavation below subgrade as specified in Section 1000.03.05(e) of the Standard Specifications.

11. **BORROW EXCAVATION FOR TRENCH BACKFILL**

- A. For open cut installation of utilities within roadways, the Contractor's attention is directed to the trench compaction requirements during backfill. Soil moisture density tests have been obtained along the route of the pipeline. Excavated material that is above the optimal moisture level and otherwise suitable will not be considered as unsuitable material. Soil that is above the optimal moisture content shall be spread, dried and used for trench refill.
- B. If in the opinion of the Engineer, road site conditions do not allow adequate time for spreading and drying of excavated material that is above the optimum moisture content to achieve the required soil compaction, the Engineer may direct the Contractor to use the contingent borrow excavation for trench backfill under Section 130, Fixed Price Contingent items, of the Standard Specifications.
- C. Where soil moisture tests have indicated areas of concern, a bid item for trench backfill using borrow excavation has been included in the contract. The bid item, Borrow Excavation for Trench Backfill, if included in the contract, may only be used at the discretion and at the direction of the Engineer. The Contractor shall have no recourse should the Engineer determine that the use of the bid item, Borrow Excavation for Trench Backfill, is not appropriate.
- D. Method of Measurement: Backfill using the bid item Borrow Excavation for Trench Backfill will be measured in cubic yards, based on the allowable Trench Payment Widths for the size pipe installed.
- E. Basis of Payment: Borrow Excavation for Trench Backfill when measured as provided above will be paid for at the contract unit price per cubic yard, which price and payment will constitute full compensation for furnishing, excavating, hauling, depositing and compacting of the material and the disposal of unsuitable material, and clearing, grubbing, sloping, draining and reclamation of pits; the formation and compaction of embankments, backfills, subgrade, and all work and materials except as otherwise specified; the disposing of all unsuitable spoil material; and for all labor, equipment, tools and incidentals necessary to complete the item. No payment will be made for material required in excess of the allowable Trench Payment Width.

12. **USE OF EXPLOSIVES**

On a project where the use of explosives is allowed, the use of explosives shall be governed by the provisions of Section 7.21 of the General Conditions and Section 201.03.12, Use of Explosives, of Volume IV, Standard Specifications and Details for Construction.

13 **PERMITS**

- A. The Contractor's attention is directed to the fact that a permit may be required from the State of Maryland, Department of the Environment, Water Resources Administration, for construction within their jurisdictions. The contractor shall comply with all applicable laws, rules, regulations, or ordinances imposed by all applicable agencies.
- B. The County will be responsible for obtaining necessary local permits.
- C. Should the use of explosives be allowed and special permits are required, it shall be the Contractor's responsibility to secure such permits.
- D. No additional measurement and payment will be made for compliance with the permits set forth under this heading. All costs associated with permit requirements shall be included in the various prices bid or stipulated for the construction work proposed herein.

14. **UTILITY RELOCATIONS**

Not used

15. **MAINTENANCE OF TRAFFIC**

- A. The Contractor shall adhere to the requirements of Sections GC-7.08 and GC-7.09 of the General Conditions and all work necessary for the performance of maintenance of traffic shall be conducted in accordance with the requirements outlined therein. The Contractor's attention is also directed to the fact that the following maintenance of traffic requirements must be strictly followed.
 - 1. No more trench than one-half the roadway width shall be open at any time, across a given street, so that traffic is always maintained.
 - 2. Pedestrian access to all properties shall be maintained at all times.
 - 3. Vehicular access to all properties shall be maintained at all times or as determined during consultation with the Howard County Traffic Engineering Division during review of the project.
 - 4. Traffic shall be maintained using methods, signs, barricades, lights, and incidental materials as approved in the latest manual on Uniform Traffic Control Devices and the Howard County Standard Specifications and Details for Construction and subsequent revisions. The maintenance procedures shall include, but not be limited to:
 - a. Adequate warning signs
 - b. Placement of approved drum, Type I or Type II barricades every ten (10) feet between the traveled way and the construction area.
 - 5. One lane of traffic shall remain open at all times.

6. No more than twenty-five (25) feet of trenching and no trenches crossing a roadway shall remain open between the hours 5:00 p.m. and 8:00 a.m. Any trench left open at night shall be covered with steel plates. The size and thickness of the steel plates shall be determined by the Engineer and/or Inspector in the field.
7. The Contractor shall designate a Traffic Manager meeting all requirements of the Maryland Department of Transportation, State Highway Administration and notify the Construction Inspection Division prior to any work being done. The Traffic Manager shall be responsible for the proper implementation and maintenance of the Traffic Control Plan, daily inspections during hours of operation and maintaining regular surveillance over all aspects of traffic control for pedestrian and vehicular safety.

B. Method of Measurement and Basis of Payment: No measurement or payment will be made for this item; the cost will be included in the various unit prices bid for other appropriate contract pay items.

16. OBSTRUCTED AND CLOSED ROADS

In instances where access to residential areas must be obstructed or blocked by construction crews, the Contractor shall do the following:

- A. Call the Bureau of Environmental Services (410-313-6444) prior to scheduling work to ascertain the trash collection days for the area. Work shall be scheduled for non-collection days where possible.
- B. If construction must be done on trash days, and a temporary road closing is contemplated, the Contractor shall be responsible for bagging and relocating trash to an accessible location.
- C. Where the relocation of large amounts of trash is not practical, the Contractor shall inform the Bureau of Environmental Services at least 48 hours ahead of the proposed road closing. The Bureau of Environmental Services will make arrangements to have the trash contractor reschedule collection service to the affected area.
- D. When emergencies occur and roads are blocked, contact the Bureau of Environmental Services so arrangements can be made for backup trash collection. Such notification is to be made even when blocked roads have other outlets.
- E. No Measurement or payment will be made for this item; the cost shall be included in the unit prices bid for other appropriate contract pay items.

17. PATCHING EXISTING PAVING

- A. Patching of existing paving over water mains, water house connections, sewer mains and sewer house connections shall be measured and paid for in accordance with the Design Manual, Volume IV, Sections 1002 through 1005, 1009 and 1010.
- B. The existing paving shall be repaired with bituminous concrete surface in accordance

with standard detail G 4.01. The permanent paving section shall conform to the appropriate PAVING SECTION SPECIFICATION, i.e., P-2 on standard detail R 2.01.

- C. The Contractor shall use appropriate TEMPORARY PAVING REQUIREMENTS i.e., Cold Patch or Hot Mix Bituminous Concrete for temporary paving, and PROVIDE SKETCH OR DETAIL AS NECESSARY.

18. USE OF COUNTY FIRE HYDRANT

- A. The Contractor shall provide all tools, materials, and labor required for the work and any corrections required thereafter. Sufficient water to fill the cleaning truck tank may be obtained from existing water mains at no charge to the Contractor at locations approved by the Bureau of Utilities. All water obtained from County fire hydrants must be metered whether or not a fee is charged for the water. A fire hydrant meter must be obtained from the Bureau of Utilities for a deposit of \$1,250.00, the deposit will be refunded upon return of the meter.
- B. No additional measurement and payment will be made for utilizing water mains and appurtenances. Cost shall be included in the price bid.

19. TIE-IN TO EXISTING WATER MAINS

Not used.

20. WATER HOUSE CONNECTIONS

Not used

21. SANITARY SEWER MANHOLES

Manhole frames and covers shall be installed flush with applicable cross slopes in paved roadways. Unless otherwise noted on the plans, the tops of all manholes shall be set in the field.

22. SEWER HOUSE CONNECTIONS

- A. All sewer house connections shall be in strict accordance with Section 1009 of the Standard Specifications, and the applicable Standard Details.
- B. No extra measurement and payment shall be made for open cut excavation and backfill, or for jacking and boring house connections under paved surfaces. Cost shall be included in the linear foot bid price for sewer house connections.
- C. No extra measurement and payment will be made for patching of pavement. Cost shall be included in the linear foot bid price for sewer house connections.
- D. Measurement and payment for sewer house connections shall be specified in Section 1009.04 and 1009.05 of the Standard Specifications.

23. COST GROUPS

The County may estimate the cost of the contract and classify it as falling within one of a series of cost groups. If the County uses this procedure, the cost group shall be taken from the latest Maryland Department of Transportation, State Highway Administration's Standard Specifications for Construction and Materials. The letter designation will be published as part of the Invitation for Bids.

24. CONTRACT BID ITEMS

Part "A" Sewer Rehabilitation

Items A-1: Mobilization

Description

This item of work shall consist of all tasks necessary for the assembling and setting up of the project, including maintenance of traffic (MOT), the initial movement of Contractor's and Engineer's offices, security, shops, plants, storage areas, sanitary and other facilities required by the Specifications and Special Provisions of the Contract, as well by local or State laws and regulations; and all other work and prior operations which must be performed prior to beginning work on unit price and lump sum items of work at the project site. The cost of required insurance and bonds and/or any other initial expense required for the start of work shall be included in this item. The determination of adequacy of the Contractor's facilities, except as noted above, shall be made by the Contractor. The Contractor is responsible for securing whatever staging/storage areas and points of access not shown on the plans that are available and are, in the Contractor's opinion, needed for the project.

Method of Measurement

This item will be on a lump sum basis.

Basis of Payment

This item will be paid for at the bid price per each CIPP project. The payment of mobilization shall not be made more than once for each project, regardless of the fact that the Contractor may have, for any reason, shut down his work on the project or moved equipment away from the project then back again.

Items A-2 to A-4: Sewer Main CCTV Inspection, Sewers 6" to 48"

Description

These items of work shall consist of all tasks necessary to provide the County with televised videotaped inspection of any sewer as directed and specified herein. Upon review of the televised inspection results the County may or may not direct the Contractor to perform rehabilitation services. The County is not obligated to have any repairs performed under this contract, and reserves the right to authorize repairs under this contract in entirety, or in part, whichever, in their opinion best serves the interest of the County.

Method of Measurement

Measurement for payment for Item A-2 to Item A-4 shall be made on a linear foot (L.F.) basis for the actual length of pipe televised and cleaned. Pre-cleaning and post cleaning televising shall be paid for only once (e.g. for a sewer segment extending one hundred (100) feet between manholes A and B, if the Contractor is authorized to televise first on a cleaning/inspection run, and then televises again after cleaning and repairs, the Contractor shall be paid for one hundred (100) feet). Measurement shall be along the centerline of pipe from end to end at the inside face of wall at the manholes.

Basis of Payment

Payment for Item A-2 to Item A-4 shall be made at the unit price bid per linear foot in the proposal and shall include costs for materials, tools, equipment, labor, light pipe cleaning, disposal offsite of materials removed from sewers or drains, pre/post cleaning televising, recording, by-pass pumping (less than 1.0 MGD), and all incidental items necessary to complete the work. It shall be the responsibility of the Contractor to perform light cleaning of debris out of the sewer or drain line and by-pass pumping (less than 1.0 MGD), if required, to complete the inspection.

Items A-5 to A-7: Contingent HEAVY/SPECIALTY Sewer Cleaning, Sewers 6" to 48"

Description

These items shall consist of using specialty cleaning methods to clear sewer lines in preparation for CIPP lining beyond routine cleaning methods as directed by the Engineer. It is the intent of the contract that most of the cleaning shall be accomplished under other items. However, when the Engineer determines that television inspection cannot be accomplished through means described under other items and a particular section between manholes has been televised as far as possible in both directions, and the camera is impeded; then in that event, the Engineer may authorize the Contractor to proceed under Items A-5 to Item A-7.

Method of Measurement

Measurement for payment Item A-5 to Item A-7 shall be made on a linear foot (L.F.) basis for the actual length of pipe requiring heavy or specialty cleaning, rather than the entire length of sewer section.

Basis of Payment

Payment for Item A-5 to Item A-7 shall be made at the unit price bid per linear foot in the proposal; which price shall include materials, tools, equipment, labor, pipe cleaning, disposal of material offsite, and all incidentals necessary to complete the work.

Items A-8 to A-9: Contingent Bypass Pumping - 1.1 to 2.0 MGD and 2.1 to 5.0 MGD

Description

It is the intent of the contract that average daytime flow rates of one (1) MGD are incidental to other bid items within the contract. Item A-8 and A-9 shall be utilized when setting up bypass pumping systems, as specified herein, for the purpose of diverting sewage flows around work areas for the duration of television inspection and/or improvements to the existing sewer. Item A-8 is for flows ranging from 1.1 to 2.0 MGD and Item A-9 is for flows ranging from 2.1 to 5.0 MGD.

Method of Measurement

Measurement for payment Item A-8 and Item A-9 shall be on the basis of calendar day.

Basis of Payment

Payment for Item A-8 and Item A-9 shall be made at the unit price bid per each calendar day; which price shall include all labor, materials, equipment, appurtenances, and incidentals necessary for furnishing, placement, maintenance, and removal necessary to complete the work as specified herein. If bypass pumping is in operation, it needs to be manned continuously.

Items A-10 to A-15: Standard Felt Liner, Steam or Hot Water Cured CIPP Sewer Rehab - Sewer Sizes 6" To 48"

Description

These items consist of all work necessary to rehabilitate the specified length of gravity sanitary sewer line by standard means of Cured-In-Place Pipe (CIPP) process in accordance with the Contract Specifications.

Method of Measurement

Measurement for payment Item A-10 to Item A-15 shall be made on a linear foot (L.F.) basis and the quantity to be paid shall be for the linear feet of liner actually installed and accepted by the Engineer. Measurement shall be taken along the centerline of pipe from end to end at the inside face of wall at the manholes.

Basis of Payment

Payment for Item A-10 to Item A-15 shall be made at the unit price bid per linear foot; which price shall include all labor, materials, equipment, tools, transportation, televised videotaping and supplies necessary to rehabilitate the specified length of gravity flow sanitary sewer line.

Items A-16 to A-21: Fiberglass Felt, Ultraviolet Cured CIPP Sewer Rehab - Sewer Sizes 6" To 48"

Description

These items consist of all work necessary to rehabilitate the specified length of gravity sanitary sewer line by means of Fiberglass Felt, Ultraviolet Cured-In-Place Pipe (CIPP) process in accordance with the Contract Specifications.

Method of Measurement

Measurement for payment Item A-16 to Item A-21 shall be made on a linear foot (L.F.) basis and the quantity to be paid shall be for the linear feet of liner actually installed and accepted by the Engineer. Measurement shall be taken along the centerline of pipe from end to end at the inside face of wall at the manholes.

Basis of Payment

Payment for Item A-16 to Item A-21 shall be made at the unit price bid per linear foot; which price shall include all labor, materials, equipment, tools, transportation, televised videotaping and supplies necessary to rehabilitate the specified length of gravity flow sanitary sewer line.

Item A-22: Re-Establish Connection Laterals

Description

This item consists of all work necessary to re-establish sewer service to existing lateral connections.

Method of Measurement

Measurement for payment Item A-22 shall be made on a per-each basis and the quantity to be paid for will be the actual number of laterals cut and accepted by the Engineer.

Basis of Payment

Payment for Item A-22 shall be made on the basis of the unit price bid for each connection lateral re-established. Price shall include all labor, material, equipment, and incidentals required to satisfactorily complete the work item as specified.

Items A-23 to A-25: Contingent Trenchless Point Repair

Description

These items consist of all work necessary to spot repair a hole or a section of the broken sewer internally using trenchless method. The tube will be continuous in length exhibiting a uniform minimum wall thickness based upon design calculations found in ASTM F1216. The minimum length for each point repair will be determined by adding one foot on either side of the designated defective section. The number of point repair is determined in increments of every 4 feet point repair.

Method of Measurement

Measurement for payment Item A-23 to A-25 shall be made on a per-each basis and the quantity to be paid for will be the actual number of the trenchless point repairs made and accepted by the Engineer.

Basis of Payment

Payment for Item A-23 to A-25 shall be made on the basis of the unit price bid for each four (4) feet of trenchless point repair (e.g. for a sewer segment that has a longitudinal fracture extending five (5) feet, the minimum length of point repair will be adding one (1) foot on either side of the five (5) foot defective section, which is seven (7) feet. The payment of point repair will be two (2) times of the bid price for the repair). Price shall include all labor, material, equipment, and incidentals required to satisfactorily complete the work item as specified.

Part B Manhole Rehabilitation

Items B-1: Contingent Manhole Television Inspection

Description

This item of work shall consist of all tasks necessary to provide the County with a televised inspection of any manhole as directed, as specified herein. Upon review on the televised inspection results the County may or may not direct the Contractor to perform rehabilitation

services. The County is not obligated to have any repairs performed under this contract, and reserves the right to authorize repairs under this contract in entirety, or in part, whichever, in their opinion best serves the interest of the County.

Method of Measurement

Measurement for payment shall be made on a vertical foot (V.F.) basis for the actual vertical length of manhole televised and cleaned. Pre-cleaning and post cleaning televising shall be paid for only once (e.g. for a manhole extending fifteen (15) feet in depth, if the Contractor is authorized to televise first on a cleaning/inspection run, and then televises again after cleaning and repairs, the Contractor shall be paid for fifteen (15) vertical feet). Measurement shall be from the center of the manhole at grade to the center of the manhole at the lowest invert.

Basis of Payment

Payment for this item shall be made at the unit price bid per vertical foot (V.F.) in the proposal and shall include costs for materials, tools, equipment, labor, light cleaning, disposal offsite of materials removed from sewers or drains, pre/post televising, recording, by-pass pumping (less than 1.0 MGD), and all incidental items necessary to complete the work. It shall be the responsibility of the Contractor to perform light cleaning of debris out of the manhole and by-pass pumping, if required, to complete the inspection.

Items B-2: Manhole Rehabilitation

Description

These items consist of all work necessary to rehabilitate the existing standard sewer manhole by monolithic spray-application of a high-build, solvent-free epoxy coating to primarily provide corrosion protection.

Method of Measurement

Measurement for payment Item B-2 shall be made on a vertical foot (V.F.) basis and the quantity to be paid shall be for the vertical feet of epoxy coating actually applied and accepted by the Engineer. Measurement shall be from the center of the manhole and measured vertically from top to bottom points of application.

Basis of Payment

Payment for Item B-2 shall be made at the unit price bid per vertical foot; which price shall include costs for materials, tools, equipment, labor, light cleaning, disposal offsite of materials removed from manhole, pre/post televising, recording, by-pass pumping (less than 1.0 MGD), and all incidental items necessary to rehabilitate the specified manhole.

Items B-3: Replace Manhole Steps

Description

This item consist of all work necessary to cut, remove and dispose the existing steps from the sewer manholes, and to furnish and install new manhole steps as directed by the County Engineer. Manhole steps shall meet Howard County Design Manual Volume IV specification section 962 and comply with the Standard Details.

Method of Measurement

Measurement for payment Item B-3 shall be made on a per-each basis and the quantity to be paid shall be for the steps installed and accepted by the Engineer.

Basis of Payment

Payment for Item B-3 shall be made at the unit price bid per manhole step installed; which price shall include costs for materials, tools, equipment, labor, disposal offsite of materials removed from the manhole, and all incidental items necessary to rehabilitate the specified manhole step.

Part C Lateral Rehabilitation

Items C-1: Service connection and Seal 5' into lateral

Description

These items consist of all work necessary to rehabilitate a 4-inch or 6-inch service connection and seal five (5) feet into lateral providing all labor, materials, equipment, tools, transportation, and supplies necessary to rehabilitate the specified service connections of gravity flow sanitary sewer lines by means of the CIPP process.

Method of Measurement

Measurement for payment Item C-1 shall be made on a per each basis and the quantity to be paid for will be the actual number of laterals rehabilitated and accepted by the Engineer.

Basis of Payment

Payment for Item C-1 shall be made on the basis of the unit price bid for each service connection and seal rehabilitated. Price shall include all labor, material, equipment, and incidentals required to satisfactorily complete the work item as specified.

Items C-2: Service connection and Seal over 5' into lateral

Description

These items consist of all work necessary to rehabilitate the specified length sewer laterals exceeding five (5) feet into the connection by means of the Cured-In-Place Pipe (CIPP) process in accordance with the Contract Specifications.

Method of Measurement

Measurement for payment Item C-2 shall be made on a linear foot (L.F.) basis and the quantity to be paid shall be for the linear feet of liner, exceeding 5 feet into the connection, actually installed and accepted by the Engineer. Measurement shall be taken after the first 5 linear feet of the lateral liner installed from end to end.

Basis of Payment

Payment for Item C-2 Payment shall be made at the unit price bid per linear foot; which price shall include all labor, materials, equipment, tools, transportation, televised videotaping and supplies necessary to rehabilitate the service connection.

Items C-3: CCTV and Cleaning of lateral

Description

This item of work shall consist of all tasks necessary clean and to provide the County with televised videotaped inspection of any sewer house connection laterals directed and specified herein. Upon review of the televised inspection results the County may or may not direct the Contractor to perform rehabilitation services. The County is not obligated to have any repairs performed under this contract, and reserves the right to authorize repairs under this contract in entirety, or in part, whichever, in their opinion best serves the interest of the County.

Method of Measurement

Measurement for payment for item C-3 shall be made on a linear foot (L.F.) basis for the actual length of pipe televised and cleaned. Pre-cleaning and post cleaning televising shall be paid for only once. Measurement shall be along the centerline of pipe from the sewer main to the specified end of lateral.

Basis of Payment

Payment for Item C-3 shall be made on a linear foot (L.F.) basis for the actual length of pipe televised and cleaned. Pre-cleaning and post cleaning televising shall be paid for only once. Measurement shall be along the centerline of pipe from the sewer main to the specified end of lateral.

TECHNICAL
SPECIFICATIONS

TECHNICAL SPECIFICATION

SANITARY SEWER REHABILITATION WITH CURED -IN-PLACE PIPE

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes requirements for providing all labor, materials, equipment, tools, transportation, and supplies necessary to rehabilitate the specified lengths of gravity flow sanitary sewer lines by means of the Cured-In-Place Pipe (CIPP) process in accordance with the terms of this Contract.

B. The work to be performed shall consist of, but not be limited to, the following:

1. Cleaning, televising, and videotaping the existing sewer segments and identifying all service connections prior to reconstruction.
 - a. Contractor shall be responsible for confirming the inside diameter and condition of each manhole-to-manhole segment to be rehabilitated.
 - b. The cleaning process shall include the removal of all loose debris, solids and roots.
 - c. The television inspection shall be performed using a closed circuit television (CCTV) color camera recorded in digital format. A pivot head camera shall be used for all pipelines that are 6-inches in diameter or greater to allow detailed lateral inspection.
2. Bypass pumping shall be performed during those activities, which will otherwise restrict existing flows and/or services.

Contractor shall provide bypass pumping and/or diversion when required for acceptable completion of the liner installation.

Contractor shall provide the complete setup and maintenance of all bypass sewage facilities required to perform the work. Contractor shall fully man bypass pumping during its duration.

Bypass pumping shall be performed in such a manner as not to damage private or public property. The Contractor shall take all necessary precautions to insure that no private or public properties are subjected to a sewage backup or spill.

- a. Pumped sewage shall be in an enclosed hose or pipe that is adequately protected from damage.
- b. Diverted sewage shall be redirected into the sanitary sewer system. The dumping or free flow of sewage is strictly prohibited. The Contractor shall be liable for cleanup, damages, and resultant fines in the event of a spill.

3. The installed CIPP from manhole-to-manhole, of the specified existing sewers by the cured-in-place pipe rehabilitation method.
4. Reinstatement of all existing lateral and drop service connections without excavation.
5. Re-televising and videotaping of rehabilitated sewer line. Re-televising shall be completed in the same direction as prior to rehabilitation.
6. Performance of acceptance testing.
7. Provision of a 2-year warranty on all materials and workmanship.

1.2 REFERENCES

The following is a list of the Standards referenced in this Section. All references to any standard listed below shall be to the most recent version in effect at the time of contract award.

A. American Society for Testing and Materials (ASTM)

1. ASTM C581 Standard Practice for Determining Chemical Resistance of Thermosetting Resins Used in Glass-Fiber-Reinforced Structures Intended for Liquid Service
2. ASTM D543 Standard Practice for Evaluating the Resistance of Plastics to Chemical Reagents
3. ASTM D638 Standard Test Method for Tensile Properties of Plastics
4. ASTM D790 Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
5. ASTM D792 Standard Test Methods for Density and Specific Gravity of Plastics by Displacement
6. ASTM D2122-98(2004) Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings
7. ASTM D2990 Standard Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics
8. ASTM D3567-97(2002) Standard Practice for Determining Dimensions of Fiberglass (Glass-Fiber-Reinforced Thermosetting Resin) Pipe and Fittings
9. ASTM D3681 Standard Test Method for Chemical Resistance of Fiberglass (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe in a Deflected Condition
10. ASTM D5813 Standard Specification for Cured-in Place Thermosetting Resin Sewer Pipe
11. ASTM F1216 Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin Impregnated Tube
12. ASTM F1743 Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pull-in-Place and Inflate and Curing of A Resin-Impregnated Tube

13. ASTM F2019 Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Pulled-in-Place Installation of Glass Reinforced Plastic (GRP) Cured-in-Place Thermosetting Resin Pipe (CIPP)
14. ASTM F2561 Standard Practice for Rehabilitation of a Sewer Service Lateral and Its Connection to the Main Using a One Piece Main and Lateral Cured-in-Place Liner

B. Others

1. Howard County Standard Specifications and Details for Construction, Volume IV Design Manual
2. NASSCO CIPP Installation Performance Specification Guideline, June 2011

1.3 QUALITY ASSURANCE

- A. Bidders shall have at least five (5) years of experience in Cured in Place Pipe (CIPP) gravity sewer lining, lateral lining and manhole rehabilitation and shall be primarily engaged in CIPP sewer lining field. In addition, prospective bidders shall have successfully completed at least twenty-five (25) similar projects involving the same material, equal size, and comparable length. A minimum of 150,000 linear feet of sewer mains between 6 inches to 24 inches and a minimum of 5,000 liner feet of sewer mains between 27 inches to 48 inches of installation is required, using the proposed CIPP rehabilitation process. The lead personnel including the superintendent, the foreman and the lead crew personnel for CCTV inspection, resin wet-out, the CIPP liner installation, liner curing and the robotic service reconnections each must have a minimum of three (3) years of total experience. Personnel replaced by the contractor shall have similar verifiable experience as the personnel originally submitted for the project. Prospective bidders must demonstrate experience on projects of similar size and complexity. Bidders shall document this experience on the Qualifications Questionnaire (Section F), and provide a detailed list of completed projects meeting the specified experience requirements.
1. References must include the project title, location, total cost, pipe diameters, linear feet, and number of service connections.
 2. References must contain client contact information; include client name, address and telephone number(s).
 3. Personnel directly involved with the installation of the CIPP shall be trained by the manufacturer in the procedures for sewer rehabilitation using the specified CIPP method.
- B. Quality assurance for all CIPP lining materials furnished by the Contractor shall meet requirements of this specification. The manufacturer and Contractor shall be responsible for the provisions of all test requirements specified herein as applicable. In addition, all CIPP materials to be installed under this contract may be inspected at the plant for compliance with these specifications by an independent testing laboratory approved by the County. The Contractor shall require the manufacturer's cooperation in these inspections.
- C. Inspection of CIPP materials may also be made by the County after delivery. The CIPP liner shall be subject to rejection at any time on account of failure or unacceptable installation, even if any CIPP material may have been accepted as satisfactory at the place of

manufacture. CIPP materials rejected after delivery shall be marked for identification and shall be removed from the work site at once.

- D. Both the Contractor and liner manufacturer shall have ISO 9000 Certifications or approved equal for its quality control and assurance programs. Proof of certification shall be provided with bid package.
- E. Care shall be taken in shipping and handling to avoid damaging the CIPP materials. Extra care will be necessary during cold weather construction. Any CIPP materials damaged in shipment or during storage shall be replaced as directed by the County.
- F. Any CIPP liner showing a split or tear, or which has received a blow that may have caused damage, even though no such damage can be seen, shall be marked to indicate such split, tear, etc. The County, at its discretion, may reject the liner and order removal of damaged material at once from the work site at no additional cost to the County.
- G. While stored, CIPP materials shall be adequately supported and protected. CIPP materials shall be stored in a manner as recommended by the manufacturer.
- H. All CIPP lining placed shall be guaranteed by the Contractor and manufacturer for a period of two (2) years from the date of acceptance. During this period, defects discovered in the CIPP lining or workmanship, as determined by the County, shall be repaired or removed and replaced in a satisfactory manner at no cost to the County.
- I. On any work completed by the Contractor that is defective and/or has been repaired, the Contractor shall warrant the work for one (1) year above the warranty required by the Contract.

1.4 SUBMITTALS

- A. In addition to those submittals identified in the General Provisions, the following items shall be submitted by the Contractor:
 - 1. Submit to the County a copy of the weekly work schedule. With each weekly work schedule, submit design data and specifications data sheets listing all parameters used in the CIPP design and thickness calculations based on ASTM standards. Submit a completed Professional Engineer Certification form (included at end of SPECIFICATION A) for all CIPP design data. The CIPP shall be designed for a service life of 50 years or greater. The CIPP shall be designed as a fully structurally stand-alone pipe within a pipe, meet or exceed all contract specified physical properties, fitting tightly within the existing pipe all within the tolerances specified. The installed CIPP shall withstand all applicable surcharge loads (soil overburden, live loads, etc.) and external hydrostatic (groundwater) pressure, if present, for each specific installation location.
 - 2. Submit CIPP product information, the manufacturer, description of product components, including the fabric tube, flexible membrane material and raw resin data, as well as the manufacturer's recommended repair procedure if applicable. The submittal shall include the manufacturer's recommended cure method for each diameter and thickness of CIPP liner to be installed.

3. Submit the manufacturer's storage and handling instructions for the liner tube and resins.
4. Information on seals and grouts.
5. Product specifications for lubricant, if necessary.
6. MSDS sheets for all materials to be furnished for the project.
7. Submit an installation, heating, curing, and cool-down schedule plan for each manhole-to-manhole section. Copies of the "wet-out" and "cure" reports in an approved format shall be submitted to the County immediately after the certified curing schedule is completed. It shall be incumbent upon the Contractor to adhere to the resin manufacturer's data criteria, guidelines, and recommendations. A copy of the resin manufacturer's data shall be submitted to the County. Any variance in the guidelines or recommendations after the contract date shall require the County's written approval prior to implementing any such variances. *For Fiberglass/Ultraviolet (UV) Light CIPP, the Contractor will submit a documented record of time, rate of travel of the ultraviolet light assembly, and internal temperatures and pressures during the curing process.*
8. Notification of suspected inactive service connections.
9. A description of methods for avoiding liner stoppage during installation and plans for protecting downstream sewers that have previously been lined.
10. Submit bypass pumping and/or diversion plans for review by the County at least 10 working days prior to start of work. Plans shall identify the liner insertion and bypass pumping locations and methods with sufficient detail to assure that the work can be accomplished without sewage spill.

The bypass pumping plan must be specific and complete, including such items as schedules, locations, elevations, calculations, capacities of equipment, material, method of noise control for each pump and/or generator, methods and means for road crossings and all other incidental items necessary and/or required to insure proper protection of the facilities, including protection of the access and bypass pumping locations from damage due to the discharge flows, and in compliance with any requirements and permit conditions specified in these Contract Documents.

The bypass pumping plan shall include an emergency response plan to be followed in the event of a failure of the bypass pumping system. The Contractor shall notify the County 24 hours prior to commencing with the bypass pumping operation. The Contractor's plan for bypass pumping shall be satisfactory to the County before the Contractor shall be allowed to commence bypass pumping or line rehabilitation. **All temporary pumping operations shall be fully manned, 24 hours a day, 7 days a week, whenever the temporary bypass pumping is in operation.**

11. Records and CD/DVD documenting line cleaning and television inspection work.
12. Actual resin volume used, and test results of infrared spectrum analysis conducted on each type of resin used.
13. Submit certified test reports to demonstrate compliance of the proposed CIPP with the specified ASTM standards.

- a) Certified copies of all test reports on the properties of the selected resin, fiber tube, and later, on the liner coupons performed by, and/or for the Contractor, shall be submitted to the County. Examples are the manufacturer's resin data test results and the infrared spectrum analysis of the resin. Results of additional product testing(s), normally performed for "in-house quality control" and process improvement, shall also be provided to the County, at no cost to the County. The Contractor shall inform the County in writing, the name and designation of all in-house quality control test(s) and the sampling frequency of the tests on the resin and liner materials. The County shall also have the right to require the testing to be done at designated liner locations(s) within the scope of the Contract, by an accredited, independent laboratory.
- b) The County may request Contractor to test random samples, at no cost to the County. All samples shall be labeled before shipment for testing, and a duplicate piece shall be provided to the County, for inspection and/or testing by an independent laboratory, if required by the County.

14. Updated list of Punch List Items.

PART 2 PRODUCTS

2.1 CHEMICAL RESISTANCE

- A. The liner shall be fabricated from materials which, when cured, will be long term (50 year) chemically resistant to withstand internal exposure to sewage and sewage gases containing normal levels for domestic sewage of hydrogen sulfide, carbon monoxide, carbon dioxide, methane, traces of mercaptan, and external exposure to soil bacteria.
- B. The manufacturer shall submit results of chemical resistance testing performed on specimens of the cured in place pipe. The chemical corrosion resistance of the actual resin system (neat plus modifications) selected by the contractor shall be tested and submitted by the resin manufacturer in accordance with ASTM C-581. Exposure to the chemical solutions listed in the following table shall result in a loss of not more than twenty percent (20%) of the initial physical properties when tested in accordance with ASTM C-581, for a period of not less than one (1) year.

Chemical Solution	Concentration (%)
Tap Water (pH 6-9)	100
Nitric Acid	5
Phosphoric Acid	10
Sulfuric Acid	10
Gasoline	100
Vegetable Oil	100
Detergent	0.1
Soap	0.1

2.2 SAMPLES – INSPECTION AND TESTING

- A. The County may direct the Contractor to obtain cured samples and test them in accordance with the listed ASTM Standards for determining and meeting properties.
- B. At the time of resin impregnation, each lot shall be inspected for defects. The resin shall not contain fillers, except those required for viscosity control, fire retardant, or to extend the pot life. Thixotropic agents that will not interfere with visual inspection may be added for viscosity control. Also, the opaqueness of the plastic coating shall not interfere with visual inspection. Resins may contain pigments, dyes, or colors that do not interfere with visual inspection of the cured-in-place liner pipe or its required properties. Additives may be incorporated that enhance physical and chemical resistant features. For testing purposes, a lot shall consist of all the tube and resin on a full continuous length of impregnated liner.

2.3 LINER DESIGN

- A. The Contractor shall determine the recommended liner thickness for each manhole-to-manhole section. For 8" diameter pipe, the minimum acceptable liner thickness shall be 6mm for regular CIPP, or 4mm for UV cured CIPP. Liners shall be designed to withstand internal and/or external pressures in accordance with the applicable provision of ASTM standards. Liner thickness calculations shall be performed based on a fully deteriorated pipe condition. For the purpose of design, groundwater shall be assumed to be at the ground surface. The design life of the CIPP shall be 50 years. Thickness design calculations shall be prepared and certified by a Maryland registered Professional Engineer. The certification shall be provided using the form included in this Specification.
- B. The design thickness of the installed liner shall be accurately measured and certified by the Contractor. The actual thickness of the installed structural wall layer of the cured-in-place liner shall not be less than the design thickness. Overall thickness greater than design shall not be allowed if this results in reduction of hydraulic capacity of the sewer being rehabilitated.

- C. The tube shall be designed to a size that, when cured, will fit tightly against the internal circumference of the original conduit, so there are no wrinkles and no annular spaces between the host pipe and the cured-in-place pipe; this tight fit minimizes loss of original pipe size.
- D. The Contractor shall design the length of the tube to effectively carry out installation and sealant at the end points. All dimensions shall be field verified prior to fabrication and installation of the liner.

2.4 LINE FABRICATION

- A. The liner shall consist of one or more layers of flexible needled felt, or an equivalent woven or non-woven material, capable of carrying resin, withstanding installation pressures and curing temperatures, and compatible with the resin system utilized. The liner shall be continuous and of sufficient length to extend from manhole-to-manhole, fit irregular pipe sections, and of size to fit tightly against the existing pipe walls. Allowances for longitudinal and circumferential stretching of the liner during installation shall be made by the Contractor.
- B. The reinforcing material of the tubing shall be of required thickness. A suitable mechanical strengthener membrane or woven jacket may be used to control longitudinal stretching during installation as the inflation tube may be left on the internal surface of the liner after curing. The minimum thickness of a bonded polyurethane membrane and inner liner, if used, shall be 0.2 mm and shall not effect the structural dimension requirements of the cured liner. The liner fabric content shall be determined by the Contractor to ensure that the cured liner is of the required strength and thickness.
- C. If fiberglass reinforcement is used, the reinforcement shall be type "C" fiberglass for maximum corrosion resistance.

2.5 RESINS

- A. Resins used shall be compatible with the liner system employed. The resins shall not contain fillers, unless approved by the Engineer, except those required for viscosity control or fire retardation. The material supplied may be unsaturated polyester or epoxy thermoset resins able to cure to final properties per manufacturer's specifications. The resin shall contain the proper catalyst mix ration and shall be sufficiently mixed.
- B. The resin system to be used shall be manufactured by an approved company selected by the CIPP process manufacturer. Relevant information from the resin manufacturer shall include, but may not be limited to, the following: specifications, characteristics, and properties, ASTM C-581 test results, methods of application, and infrared spectrography analysis of the resin used for each lot. This data shall be submitted to the County for approval prior to rehabilitation of the sanitary sewer. The Contractor shall also submit a written certification, from the resin manufacturer, that the resin material to be used is compatible with the proposed application. Certification shall also address curing temperature and curing schedule (i.e., duration of the temperature at all stages of curing) The Contractor is hereby notified that field installation practices shall be checked against the aforementioned certification. No variance shall be allowed without prior written approval of the County.

2.6 MATERIAL PROPERTIES

A. The cured liner shall meet or exceed the following material properties:

Material Property	Test Method	Minimum Value
Initial Flexural Strength	ASTM D-790	4,500 psi
Long-term Flexural Strength	ASTM D-790	50% of initial
Initial Flexural Modulus of Elasticity	ASTM D-790	250,000 psi
Long-term Flexural Modulus of Elasticity	ASTM D-790	50% of initial

2.7 SEALS AND GROUTS

- A. The Contractor shall submit documentation that the seal material is compatible with the liner material.
- B. The Contractor shall submit the manufacturer's documentation for the grout design mixes and grout testing reports.

2.8 WORKMANSHIP

- A. The finished lining shall be continuous over the entire length of an installation segment (between two manholes) and free of foreign inclusions, wrinkles, dry spots, lifts, pinholes and delaminations. The lining shall be impervious and free of any leakage from the pipe to the surrounding ground or from the ground to the inside of the lined pipe. The inner surface shall have a smooth finish and be free of cracks and crazing. Some minor waviness that in the County's opinion will not appreciably decrease the flow cross-section or affect the flow characteristics shall be permissible. The layers of the finished CIPP shall be uniformly bonded. It shall not be possible to separate any two layers with a probe or point of a knife blade so that the layers separate cleanly or such that the knife blade moves freely between the layers. If separation of the layers occurs during testing of the field samples, new samples will be cut from the work. Any reoccurrence may be cause for rejection of the work.
- B. The CIPP Liner shall be sealed with an expandable water stop, such as Hydrotite or equivalent at all manholes where the liner has been cut. The Contractor shall repair or seal all leaks around the liner manholes.
- C. Any defects that, in the opinion of the County, will affect the integrity or strength of the lining or the hydraulic characteristics of the liner system shall be repaired or the liner replaced at no cost to the County.
- D. The Contractor shall repair any manhole benches and inverts that have been damaged during the liner installation.

PART 3 EXECUTION

3.1 GENERAL

- A. The Contractor shall visit all line segments proposed for rehabilitation and notify the County Project Manager in writing of any site conditions, such as access, which would prevent the accomplishment of the work. The contractor may, under the direction of the County, utilize any of the existing manholes in the project area as installation access points. If a street must be closed to traffic because of the location of the sewer, the Contractor shall furnish a detailed traffic control plan and all labor and equipment necessary. The plan shall be in conformance with the local, state, and federal standards and requirements over traffic control.
- B. The Contractor shall deliver the uncured resin impregnated liner to the site, provide all equipment required to install the liner into the conduit, expand the liner in accordance with the manufacturer's standard procedures, and cure it in place. The liner shall not be impregnated with resin more than a period of time greater than recommended by manufacturer before the proposed time of installation and shall be stored in accordance with the manufacturer's recommendations.
- C. The Contractor shall notify the County Project Manager a minimum of five (5) days in advance when wastewater and/or water service interruption will take place and the approximate duration. The Contractor shall be responsible for notifying each residence/business affected by water/sewer service interruption a minimum of 48 hours prior to the interruption. Notification shall be by a County approved door tag.
- D. The Contractor shall be on site with all necessary equipment in good working order no later than 7:30 a.m. The work hours for shall be 7:30 a.m. to 5:00 p.m. (or dark), Monday to Friday, excluding holidays. Curing of the liner and the cutting of services may extend the work hours beyond 5:00 p.m., however no sewer segments shall be relined after 5:00 p.m. Every effort shall be made by the Contractor to complete all work by 8:00 p.m. the same day. The Contractor shall notify each residence not in service by 5:00 p.m. of the estimated time the service connection will be completed. No work, unless required by an emergency and authorized by the County, will be performed on weekends and holidays.
- E. Work performed shall be in accordance with local, state, and federal standards and requirements. Safety and maintenance of traffic are the responsibility of the Contractor. Specific adherence to Confined Space Entry Regulations shall be followed by the Contractor.
- F. The County will provide the following:
 1. The Contractor shall notify the Bureau of Utilities at least five working days before starting work. The County personnel shall perform the turn off/turn on of water services to connected users affected by the work. The Contractor, with County assistance, shall locate all water service valves and sewer cleanouts at least five (5) days prior to the commencement of work; and any valves/cleanouts on affected services that cannot be located or require remediation will be repaired by the County.
 2. The Contractor shall be allowed use of water from a County-approved fire hydrant in the project vicinity. Use of an approved double check backflow assembly shall be

required. Contractor shall provide his own approved assembly. See Special Provisions #18 also.

3.2 MAINTENANCE OF SEWAGE FLOWS

- A. The Contractor shall be responsible for sewage bypassing around the pipe to be televised or lined. The Contractor's personnel shall be present at the jobsite whenever bypass pumping is being performed. Pump and bypass lines shall be of adequate capacity and size to handle flow without affecting the service connections upstream of the sewer line being lined. The Contractor shall be responsible for cleanup, repair, and property damage costs and claims resulting from sewage overflow or backup caused by inadequate pumping or any other reason related to the Contractor's lining work. Pumps and equipment shall be continuously monitored by a qualified mechanic capable of starting, stopping, refueling, and maintaining this equipment during the rehabilitation work.
- B. All pumps used shall be fully automatic self-priming units that do not require the use of foot valves or vacuum pumps in the priming system. The pumps may be gasoline, electric or diesel powered. All pumps shall be constructed to allow dry running for long periods of time to accommodate the cyclical nature of sewerage flows.
- C. The Contractor shall test and verify that the standby pump, piping and all associated equipment is operational before starting bypass operations. The standby pump shall be capable of pumping the entire flow at the required total dynamic head.
- D. The standby pumping facility shall include a generator to provide power to the pump and a standby pump of equal capacity, should the primary pump fail.
- E. The Contractor shall take appropriate steps to ensure that all pumps, piping, and hoses that carry raw sewage are protected from vehicular traffic and pedestrian traffic.
- F. In the event, during any form of "Maintenance of Sewage Flows" that raw sewage is spilled, discharged, leaked or otherwise deposited in the open environment, due to the Contractor's work, the Contractor is responsible for any cleanup of solids and disinfecting of the area affected. This work shall be performed at the Contractor's expense with no additional cost to the County. The Contractor shall be charged back for any fines, penalties, or other costs or damages imposed upon the County by any agency or private party as a result of a spill or improper discharge by the Contractor.

3.3 CLEANING OF SEWER

- A. Prior to any CIPP installation process, it shall be the responsibility of the Contractor to clean debris out of the sewer line in accordance with the "Sewer Line Cleaning" section of the most recent publication of NASSCO's Sewer Pipe Cleaning Specification Guidelines. In addition, prior to television inspection and video recording, the sewer shall be cleaned to such a condition that the video camera can adequately discern structural defects, misalignments, and points of infiltration. Prior to pipe rehabilitation, all sand, rocks, gravel, mud, grease, and other debris that could interfere with or otherwise adversely impact the success of the rehabilitation shall be removed. Protruding laterals shall be cut prior to rehabilitation.

- B. It is recognized that there are different levels of cleaning efforts: light cleaning and heavy/specialty cleaning. Under some conditions, such as broken pipe, large roots, rocks, bricks, concrete debris, and any major blockage that prevent light cleaning from being accomplished or where additional damage would result if light cleaning were attempted or continued, the Contractor shall notify the County and request to perform heavy/specialty cleaning under County's discretion.
- C. Solids and debris resulting from the cleaning operation shall be collected and removed from the downstream manhole and disposed of at a site selected by the Contractor and approved by the County. Under no circumstance shall sewage or solids be dumped onto the surface, street, or into waterways, ditches, inlets, or storm drains.

3.4 TELEVISION INSPECTION

- A. After the sewer section to be lined has been cleaned (pre-inspection), and after liner installation and reinstatement of lateral connections (post-inspection), the line shall be inspected with a television camera able to provide a total view, up and down and side to side by panning a minimum of 275 degrees and rotating 360 degrees. Lighting for the camera shall be directed, and of sufficient intensity to provide a clear picture of the entire periphery of the sewer. The Contractor shall supply the County with a clear, viewable, color video showing the line segment from the centerline of the starting manhole to the centerline of the end manhole, including all service connections, before and after the lining process. Videos shall be provided as high definition digital file in CD/DVD format and recorded at standard play speed. A copy of all CCTV logs and CD/DVD shall be submitted to the County no later than two (2) weeks after liner installation, and prior to request for payment. All CD/DVD should be clearly labeled with: (1) contractor name, (2) project name, (3) duration, (4) CCTV logs identified by upstream and downstream manhole IDs. Submitted CCTV logs and CD/DVD will become the property of the County. If both pre and post-rehabilitation CCTV logs and CD/DVD are not presented prior to a payment request for a work order, payment for the work will not be made and the request will be rejected.
- B. The camera shall be moved through the line in either direction at a uniform rate, stopping when necessary to permit proper documentation of the sewer's condition and features. In no case shall the camera be pulled at a speed greater than 30 feet per minute. The camera shall be panned, tilted, and rotated as is necessary to best view and evaluate all features and points of interest found. If, during the inspection operation, the television camera will not pass through the entire sewer segment, the Contractor shall set up the equipment so that inspection can be performed from the opposite manhole. Both of these inspections shall be displayed as a single report and digital file. A blower shall be used, as needed, to defog the sewer line and promote a clear picture.
- C. The televising and video recording after rehabilitation and reinstatement of lateral connections shall be conducted without wastewater in the sewer lines.
- D. The video recording shall include a view into each service connection before use and, if possible, in use after the lining process. If the connection cannot be shown in use, a thorough video inspection of the connection will be required before moving on through the line and the video shall indicate "resident not available, flush test not possible". At service connections, the Contractor shall slowly scan the entire edge of the service connection (360 degrees).

- E. Within manholes, both ends of the liner shall be televised and video recording to determine proper cutting and to detect any leaks between the liner and the host pipe.
- F. Each line segment will be identified by street name, upstream and downstream manhole IDs, date, length of line, and liner thickness. The manhole IDs should use the name convention as "Sewer Contract Number – Manhole Number"; i.e., manhole "1234-567". Each service connection shall be identified by house number and street name. This information shall be indicated on the video recording using audio and/or superimposed text.
- G. During televising and video recording, each line segment shall be measured to determine the exact length for billing purposes. Measurement for location of rehabilitation shall be by the footage meter on the cable (or a mutually agreed upon device), which shall appear continuously on the video recording. Footage meter shall be standardized to reflect the distance from the inside wall of the starting manhole to the inside wall of the end manhole. Accuracy of the distance meter shall be checked by use of a walking meter, roll-a-tape, or other suitable device. Logs and tapes shall indicate the location of all noted features, relative to the inside walls of the manholes.

3.5 SEWER PREPARATION PRIOR TO LINER INSTALLATION

- A. Any protruding pieces of concrete, "dropped" joints, or broken pipe shall be corrected by point repairs so that the host pipe is left in a clean, smooth condition ready for lining, unless otherwise jointly determined by the Contractor and the County that the defect will not compromise the integrity of the liner. Prior to liner installation, all active leaks of a magnitude to compromise the liner shall be stopped using chemical grout. If conditions, such as broken pipe and major blockages, are found that would prevent proper cleaning, or where additional damage could result if cleaning were attempted or continued, the Contractor shall notify the County. The County may or may not: (1) direct the Contractor to provide a cost proposal for point repair, (2) sub-contract the point repair to others, (3) perform the point repair. The County reserves the right to proceed in the manner which, in their opinion, best serves the interest of the County.

3.6 LINER INSTALLATION, CURING, AND COOL-DOWN

- A. The CIPP Liner shall install, cure and cool-down in the host pipe per the manufacturer's specifications as described and submitted at the beginning of the project.
- B. CIPP installation shall be in accordance with the applicable ASTM standards including the following requirements:
 - 1. The wet-out tube shall be positioned in the pipeline using the method specified by the manufacturer. Care should be exercised not to damage the tube as a result of installation. The tube should be pulled-in or inverted through an existing manhole or approved access point and fully extend to the next designated manhole or termination point.
 - 2. Prior to installation and as recommended by the manufacturer remote temperature gauges or sensors shall be placed inside the host pipe to monitor the temperatures during the cure cycle. Liner and/or host pipe interface temperature shall be monitored and logged during curing of the liner.

3. To monitor the temperature of the liner wall and to verify correct curing and where specified by the contract documents, temperature sensors may be placed between the host pipe and the liner in the bottom of the host pipe (invert) throughout its length to monitor the temperature on the outside of the liner during the curing process. The temperature sensors shall be placed at intervals recommended by the sensor manufacturer. Additional sensors may be placed where significant heat sinks are likely or anticipated. The sensors, if installed, shall be monitored by a computer using a tamper-proof data base that is capable of recording temperatures at the interface of the liner and the host pipe.
 4. Curing shall be accomplished by utilizing the appropriate medium in accordance with the manufacturer's recommended cure schedule. The curing source or in and output temperatures shall be monitored and logged during the cure cycles if applicable. The manufacturer's recommended cure method & schedule shall be used for each line segment installed, and the liner wall thickness and the existing ground conditions with regard to temperature, moisture level, and thermal conductivity of soil, per ASTM as applicable, shall be recorded by the Contractor.
 5. For heat cured liners, if any temperature sensor or multi sensor reading does not reach the temperature as specified by the manufacturer to achieve proper curing or cooling, the installer shall make necessary adjustments to comply with the manufacturer's recommendations. The system computer should have an output report that specifically identifies each installed sensor station in the length of pipe, indicates the maximum temperature achieved and the sustained temperature time. Each sensor should record both the maximum temperature and the minimum cool down temperature and comply with the manufacturers recommendations. *For UV Cured Liners, all light train sensor readings, recorded by the tamper-proof computer, shall provide output documenting the cure along the entire length of the installed liner. The cure procedure shall be in accordance with the manufacturer's recommendation as included in the submittals by the contractor.*
- C. For heat cured liners, the Contractor shall submit "Wet Out" and "Cure" Reports documenting the specific details of the liner's impregnation and saturation with resin and the installation of the CIPP liner. A copy of all "wet out" and "cure" records shall be made available to the County upon request and shall be turned over to the County's inspector daily, and prior to request for payment. Payment for a work order will not be made until the related "wet out" and "cure" reports are provided. Request for work order payment without "wet out" and "cure" reports will be rejected. At a minimum, reports shall include, in addition to Contractor and Contract identification:
1. Line segment identification and location.
 2. Wet out date.
 3. Sample identification (s) and technician.
 4. Installation (in sewer) date.
 5. Host sewer pipe inside diameter.
 6. Liner thickness.
 7. Liner length.
 8. Liner and resin batch numbers.
 9. Resin type.
 10. Wet out length.
 11. Quantity of resign and catalyst utilized.

12. Roller Spacing.
13. Wet out location.
14. Field cure log.
15. Vacuum setting.
16. Applicable remarks.
17. Boiler and liner heating fluid pressure and temperature versus time log during cure period.
18. Cool-down report.

D. For Fiberglass/Ultraviolet (UV) Light CIPP, the Contractor will submit a documented record of time, rate of travel of the ultraviolet light assembly, and internal temperatures and pressures during the curing process.

3.7 MANHOLE CONNECTIONS AND SERVICE CONNECTIONS:

- A. The re-connection of active service connections shall be completed, unless otherwise specified, without excavation, from the interior of the pipeline by means of a television camera directed cutting device. All re-cut service connections shall be neat and smooth and free of all burrs, frayed edges, or any restrictions preventing free flow. Service connections shall be trimmed and wire-brushed to 100% of the original opening. External reconnections are to be made with a tee fitting in accordance with manufacturer's recommendations. Saddle connections shall be seated and sealed to the new CIPP using grout or resin compatible with the CIPP. No coupons, debris, or shavings shall be left inside the service connections or the lined pipe.
- B. The County will provide the Contractor with the approximate location of house service connections. During the pre-rehabilitation television inspection of the line, the Contractor will confirm if service connections are active or inactive. Upon identifying a suspected inactive connection, the Contractor shall notify the County Project Manager who will investigate or direct the Contractor to perform dye test to determine whether or not the connection is live or abandoned. It is the intent of these specifications not to re-connect inactive connections. In the event the status of a service connection cannot be adequately defined, the County will make the final decision, prior to installation and curing of the liner, as to the status. However, there is a potential of connection misidentification or inadequate connection reopening resulting in sewage back-up in private homes. The Contractor shall be responsible for all damages to private properties due to defective work. Compensation shall be at the actual number of services re-connected using either internal or external means as contained in the Proposal.
- C. Reconnections of existing services shall be made after the CIPP has been installed, fully cured, and cooled down. The Contractor shall maintain and provide a minimum of two (2) complete working cutters plus spare key components on site prior to commencing inversion.
- D. The Contractor shall maintain a crew or a plumber capable of responding on short notice (one hour) to such emergencies that may occur as a result of the lining process. The Contractor shall provide a minimum of two 24-hour telephone numbers to be contacted in case of an emergency.

- E. The Contractor will be responsible for all costs incurred due to deficiencies related to the lining procedure. In the event a service connection is not properly reinstated, the Contractor shall rectify the defect without cost to the County or County.
- F. The Contractor shall stop all visible leaks, including those at service connections, to achieve an acceptable watertight seal.
- G. During televising, the camera shall slowly scan the entire edge of the service connections (360 degrees).

3.8 REPAIRS, INSPECTION AND TESTING:

- A. Each rehabilitated length of CIPP shall be inspected by the Contractor via television inspection. The CIPP shall conform to the standards of workmanship described herein. If any pinholes, thin spots, dry spots, delaminations, lifts, miss cut laterals, cuts where no lateral exist, or other defects or inferior workmanship are found, the liner shall be repaired by the Contractor to the satisfaction of the County at no additional cost.
- B. Repair/replacement procedures shall be as recommended by the manufacturer and shall be submitted as part of the submittal. Un-repairable defects that may occur to the CIPP shall be clearly identified by the Contractor and the line segment shall be removed & redone. Defects in the installed CIPP that will not affect the operation and long term life of the product shall likewise be identified and noted in the post-inspection log.
- C. The physical properties of the installed CIPP shall be verified through field sampling and laboratory testing. Contractor shall submit a method to the County, for approval, to obtain representative samples from the installed liners for testing to verify compliance with installed material specifications. All tests shall be in accordance with applicable ASTM test methods to confirm compliance with the requirements specified in this contract document.
 - 1. The Contractor shall provide samples for testing to the County from the actual installed CIPP liner. Samples shall be provided, at a minimum from one location per 1,000 linear feet of CIPP installed or otherwise required by the County.
 - 2. The restrained sample shall be cut from a section of cured CIPP that has been inverted or pulled through a like diameter pipe which has been held in place by a suitable heat sink, such as sandbags. All curing, cutting and identification of samples will be witnessed by the County and transmitted by the County to the testing laboratory. On pipelines greater than 18 inches in diameter the County may, at its discretion, require plate samples cured with the CIPP or designate a location in the newly installed CIPP where the Contractor shall take a sample. Note that man entry sampling cannot be safely performed in diameters less than 24" diameter. The opening produced from the sample shall be repaired in accordance with manufacturers recommended procedures. The laboratory results shall identify the test sample location as referenced to the nearest manhole and station.
 - 3. Chemical resistance - The CIPP system installed shall meet the chemical resistance requirements of ASTM D5813. CIPP samples tested shall be of fabric tube and the specific resin proposed for actual construction. It is required that CIPP samples without plastic coating meet these chemical testing requirements. A certification may

be submitted, by the contractor, from the manufacturer, verifying that the chemical resistance of the CIPP meets the contract requirements.

4. Hydraulic Capacity - Overall, the hydraulic capacity shall be maintained as large as possible. The installed CIPP shall at a minimum be equal to the full flow capacity of the original pipe before rehabilitation. In those cases where full capacity cannot be achieved after liner installation, the Contractor shall submit a request to waive this requirement, together with the reasons for the waiver request. Calculated capacities may be derived using a commonly accepted roughness coefficient for the existing pipe material taking into consideration its age and condition.
5. The installed CIPP thickness shall be measured for each line section installed. The thickness shall be measured accurately using properly calibrated micrometers. The liner thickness shall have tolerance of minus 5% plus 10%.
6. Specimens taken as part of section 3.8.C shall be subject to delamination tests by aggressively prying and separating into layers with a knife or sharp-edged instrument. No separation shall be possible. Results shall be included in the laboratory's report.
7. Where it is not feasible to obtain a restrained sample or the restrained sample fails the test, the samples shall be taken by core drilling 2-inch diameter test plugs at random locations selected by the County. As an alternative, the Contractor may use industry proven, non-destructive methods for confirming the thickness of the installed CIPP.
8. Testing shall be performed by an independent laboratory proposed by the Contractor and approved by the County. All costs, to the Contractor, associated with providing cured CIPP samples for testing shall be included in per linear price for CIPP. Payment for all testing by a laboratory will be paid for by the Contractor. Test reports should be submitted by the laboratory directly to the County. Liners that do not pass these inspections and materials test will not be accepted and shall be replaced by the Contractor at his own cost.
9. Where leakage is observed through the wall of the pipe, the contractor shall institute additional testing including but not limited to air testing, localized testing and any other testing that will verify that the leakage rate of the installed CIPP does not exceed acceptable tolerances specified in ASTM F1216.

3.9 CLEAN-UP:

- A. The Contractor shall keep the work area in a neat and orderly condition by frequent removal of debris. Upon completion of the lining process at each location, all debris and used material shall be promptly removed from the area. The area shall be left in a condition similar to, or better than, before the work was performed.

3.10 PROPERTY DAMAGE:

- A. Any damage to the County's infrastructure or to private or public property shall be immediately repaired or rehabilitated to the County's satisfaction at no additional expense to the County. The property owner and the County shall be notified of any problems and repairs, in writing, immediately.

3.11 PUNCH LIST ITEMS

- A. The Contractor shall correct any problems found within 60 days of discovery. If a problem is not corrected within 60 days, the Contractor and/or the Surety shall be liable for the liquidated damages as set forth in this contract. The contractor shall maintain an updated list of Punch List Items, and submit updates to the County once a week.

PART 4 FINAL ACCEPTANCE

- A. All CIPP sample testing and repairs to the installed CIPP as applicable shall be completed, before final acceptance, meeting the requirements of these specifications and documented in written form.
- B. All submittals listed in section 1.4 shall be made by the Contractor. If post inspection documentation is not submitted within two (2) weeks of the liner installation, the County may at its discretion suspend any further installation of CIPP until the post-installation documents are submitted. As a result of this suspension, no additional working days will be added to the contract, nor will any adjustment be made for increase in cost.

TECHNICAL SPECIFICATION B

**MANHOLE REHABILITATION (CONCRETE AND MASONRY) WITH A SOLVENT-FREE
EPOXY COATING**

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes requirements for providing all labor, materials, equipment, tools, transportation, and supplies necessary to rehabilitate existing sewer manholes by monolithic spray-application of a high-build, solvent-free epoxy coating to primarily provide corrosion protection. In addition, the lining shall also eliminate infiltration, repair voids and enhance structural integrity of the repair manhole.
- B. The work to be performed shall consist of, but not be limited to, the following:
1. Cleaning, televising, and videotaping the existing sewer manhole and service connections prior to reconstruction.
 - a. Contractor shall be responsible for confirming the inside diameter and condition of each sewer manhole to be rehabilitated.
 - b. The cleaning process shall include the removal of all solids, grease, oils, roots, etc. such that a strong bond is capable between the coating substrate.
 - c. The television inspection shall be performed using a closed circuit television (CCTV) color camera recorded in digital format. A pivot head camera shall be used to allow detailed inspection.
 2. Bypass pumping shall be performed during those activities, which will otherwise restrict existing flows and/or services.
 - a. Contractor shall provide bypass pumping and/or diversion when required for acceptable completion of sewer manhole rehabilitation.
 - b. Contractor shall provide the complete setup and maintenance of all bypass sewage facilities required to perform the work. Contractor shall fully man bypass pumping during its duration.
 - c. Bypass pumping shall be performed in such a manner as not to damage private or public property. The Contractor shall take all necessary precautions to insure that no private or public properties are subjected to a sewage backup or spill.
 - d. Pumped sewage shall be in an enclosed hose or pipe that is adequately protected from damage.

- e. Diverted sewage shall be redirected into the sanitary sewer system. The dumping or free flow of sewage is strictly prohibited. The Contractor shall be liable for cleanup, damages, and resultant fines in the event of a spill.
3. The complete reconstruction of the specified existing sewer manhole by the monolithic spray-application of a high-build, solvent-free epoxy coating.
4. Re-televising and videotaping of the rehabilitated sewer manhole. Re-televising shall be completed in the same direction as prior to rehabilitation.
5. Performance of acceptance testing.
6. Provision of a 2-year warranty on all materials and workmanship.

1.2 REFERENCES

The following is a list of the Standards referenced in this Section. All references to any standard listed below shall be to the most recent version in effect at the time of contract award.

A. American Society for Testing and Materials (ASTM)

1. ASTM: The published standards of the American Society of Testing and Materials, West Conshohocken, PA
2. ASTM C109: Standard Test Method for Compressive Strength of Hydraulic Cement Mortars
3. ASTM C579: Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing and Polymer Concretes
4. ASTM D543: Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents
5. ASTM D638: Standard Test Method for Tensile Properties of Plastics
6. ASTM D695: Standard Test Method for Compressive Properties of Rigid Plastics
7. ASTM D790: Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
8. ASTM D2240: Standard Test Method for Rubber Property - Durometer Hardness, Type D
9. ASTM D2584: Standard Test Method for Ignition Loss of Cured Reinforced Resins
10. ASTM D4541: Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers

B. Others

1. Howard County Standard Specifications and Details for Construction, Volume IV Design Manual
2. ACI 506.2-77: Specifications for Materials, Proportioning, and Application of Shotcrete

3. NACE: The published standards of National Association of Corrosion Engineers (NACE International), Houston, TX
4. SSPC: The published standards of the Society of Protective Coatings, Pittsburgh, PA

1.3 QUALITY ASSURANCE

- A. All prospective bidders shall be primarily engaged in the water and sewer construction/rehabilitation field and have been actively engaged in this field for at least five (5) years. In addition, prospective bidders shall have successfully completed at least 5 previous sewer manhole rehabilitation projects, of similar size and scope using a high-build solvent-free epoxy coating by plural component spray application. Prospective bidders must demonstrate experience on projects of similar size and complexity. Prospective bidders shall complete the "Bidder's Qualification Information Sheet," Attachment A to these specifications, providing all the pertinent information with regards to their work history.
1. References must include the project title, location, total cost, pipe diameters, vertical linear feet, and number of service connections.
 2. References must contain client contact information; include client name, address and telephone number(s).
 3. Personnel directly involved with the installation of the epoxy lining shall be trained and approved by the manufacturer in the procedures for handling, mixing and applying products to be used.
- B. Contractor shall initiate and enforce quality control procedures consistent with applicable ASTM, NACE and SSPC standards and the protective coatings manufacturer's recommendations.

1.4 SUBMITTALS

- A. In addition to those submittals identified in the General Provisions, the following items shall be submitted by the Contractor:
1. Submit to the County a copy of the weekly work schedule.
 2. Technical data sheet(s) on each product used, including ASTM test results indicating the product conforms to and is suitable for its intended use per these specifications.
 3. Provide manufacturer's certification that materials provided meet these specifications.
 4. Material Safety Data Sheets (MSDS) for each product used.
 5. Project specific guidelines and recommendations.
 6. Applicator Qualifications:
 - a) Manufacturer certification that Applicator has been trained and approved in the handling, mixing and application of the products to be used.
 - b) Certification that the equipment to be used for applying the products has been manufactured or approved by the protective coating manufacturer and

Applicator personnel have been trained and certified for proper use of the equipment.

- c) Proof of any necessary federal, state or local permits or licenses necessary for the project.
7. Submit the manufacturer's storage and handling instructions for products used.
 8. Design details for any additional ancillary systems and equipment to be used in site and surface preparation, application and testing.

PART 2 PRODUCTS

2.1 EXISTING PRODUCTS

- A. Standard Portland cement or new concrete (not quick setting high strength cement) must be well cured prior to application of the protective coating. Generally, 28 days is adequate cure time for standard Portland. If earlier application is desired, compressive or tensile strength of the concrete shall be tested to determine if acceptable cure has occurred.
- B. Cementitious patching and repair materials shall not be used unless their manufacturer provides information as to its suitability and procedures for topcoating with an epoxy coating. Project specific submittals shall be provided including application, cure time and surface preparation procedures which permit optimum bond strength with the epoxy coating.
- C. Remove existing coatings prior to application of the new protective coating. Applicator shall maintain strict adherence to applicable NACE and SSPC recommendations with regard to proper surface preparation and compatibility with existing coatings.

2.2 MANUFACTURER

- A. Raven Lining Systems, Inc., Tulsa, Oklahoma 800-324-2810 or 918-584-2810 or FAX 918-582-4311 or manufacturer of equivalent lining system.

2.3 REPAIR MATERIALS

- A. Repair materials shall be used to fill voids, structurally reinforce and/or rebuild surfaces, etc. as determined necessary by the engineer and protective coating applicator. Repair materials must be compatible with the specified epoxy coating and shall be applied in accordance with the manufacturer's recommendations.
- B. The following products may be accepted and approved as compatible repair basecoat materials for epoxy topcoating for use within the specifications:
 1. 100% solids, solvent-free epoxy grout specifically formulated for epoxy topcoating compatibility. The epoxy grout manufacturer shall provide instructions for trowel or spray application and for epoxy topcoating procedures.

2. Factory blended, rapid setting, high early strength, fiber reinforced, non-shrink repair mortar that can be trowelled or pneumatically spray applied may be approved if specifically formulated to be suitable for epoxy topcoating. Such repair mortars shall not be used unless their manufacturer provides information as to its suitability for topcoating with an epoxy coating. Project specific submittals shall be provided including application, cure time and surface preparation procedures which permit optimum bond strength with the epoxy coating.
3. Shotcrete shall conform to all requirements of ACI-506.2-77 as published by the American Concrete Institute, Detroit, MI except as modified by these specifications. Shotcrete shall be composed of Portland Cement, aggregate and water so proportioned as to produce a concrete suitable for pneumatic application. Shotcrete ingredients shall be selected and proportioned in such a manner as will produce concrete which will be compatible for epoxy topcoating. Shotcrete shall have a minimum surface tensile strength of 300 psi. No coatings shall be applied prior to a full 28 day cure unless test patches of coatings exhibit acceptable bonding characteristics and no outgassing as prescribed herein or the repair mortar manufacturer certifies acceptable topcoating parameters.

2.4 PROTECTIVE COATING MATERIAL

- A. Raven Lining Systems' Raven 405 epoxy coating system - a 100% solids, solvent-free two-component epoxy resin system thixotropic in nature and filled with select fillers to minimize permeability and provide sag resistance acceptable to these specifications (up to 200 mils in a single coat).

Product type	Amine cured epoxy
Color	White
Solids Content (vol %)	100
Mix Ratio	3:1 Resin to Hardener
Compressive Strength	18,000 psi
Tensile Strength, psi	7,600 psi
Tensile Elongation, %	1.5 %
Flexural Strength, psi	13,000 psi
Hardness, Type D	88
Bond Strength - Concrete	>Tensile Strength of Concrete
Chemical Resistance to:	
Sulfuric Acid, 10%	Immersion Service
Sodium Hydroxide, 20%	Immersion Service
MEK	Incidental Contact

2.5 PROTECTIVE COATING APPLICATION EQUIPMENT

- A. Manufacturer approved heated plural component spray equipment shall be used in the application of the specified protective coating.

2.6 REPAIR MORTAR SPRAY APPLICATION EQUIPMENT (if spray applied)

- A. Spray applied repair mortars shall be applied with manufacturer approved equipment.

PART 3 EXECUTION

3.1 GENERAL

- A. The Contractor shall visit all manholes proposed for rehabilitation and notify the County Project Manager in writing of any site conditions, such as access, which would prevent the accomplishment of the work.
- B. Repair mortar applicators shall be trained to properly apply the cementitious mortar according to manufacturer's recommendations.
- C. The Contractor shall notify the County Project Manager a minimum of four (4) days in advance when wastewater and/or water service interruption will take place and the approximate duration. The Contractor shall be responsible for notifying each residence/business affected by water/sewer service interruption a minimum of 48 hours prior to the interruption. Notification shall be by a County approved door tag.
- D. The Contractor shall notify the County Project Manager a minimum of four (4) days in advance when wastewater and/or water service interruption will take place and the approximate duration.
- E. The Contractor shall be on site with all necessary equipment in good working order no later than 7:30 a.m. The work hours shall be 7:30 a.m. to 5 p.m. (or dark), Monday to Friday, excluding holidays. Completion of rehabilitation activities may extend the work hours beyond 5 p.m., however no work new work shall begin after 5 p.m. Every effort shall be made by the Contractor to complete all work by 8 p.m. the same day. The Contractor shall notify each residence not in service by 5 p.m. of the estimated time the service connection will be completed. No work, unless required by an emergency and authorized by the County, will be performed on weekends and holidays.
- F. Work performed shall be in accordance with local, state, and federal standards and requirements. Safety and maintenance of traffic are the responsibility of the Contractor. Specific adherence to Confined Space Entry Regulations shall be followed by the Contractor.
- G. The County will provide the following:
 - 1. The Contractor under the direct oversight of County personnel shall perform the turn off/turn on of water services to connected users affected by the work. The Contractor, with County assistance, shall locate all water service valves and sewer cleanouts at least five (5) days prior to the commencement of work; and any valves/cleanouts on affected services that cannot be located or require remediation will be repaired by the County.

3.2 EXAMINATION

- A. Appropriate actions shall be taken to comply with local, state and federal regulatory and other applicable agencies with regard to environment, health and safety.
- B. Any active flows shall be dammed, plugged or diverted as required to ensure that the liquid flow is maintained below the surfaces to be coated. Flows shall be totally plugged and/or diverted when coating the invert. All extraneous flows into the manhole at or above the area coated shall be plugged and/or diverted until the epoxy has set hard to the touch. As an option, hot air may be added to the manhole to accelerate set time of the coating.
- C. Pipe joint seals shall be installed. No leaks may be present prior to commencing and during work.
- D. Installation of the protective coating shall not commence until the concrete substrate has properly cured in accordance with these specifications.
- E. Temperature of the surface to be coated should be maintained between 40 degree F and 120 degree F during application. Prior to and during application, care should be taken to avoid exposure of direct sunlight or other intense heat source to the structure being coated. Where varying surface temperatures do exist, care should be taken to apply the coating when the temperature is falling versus rising (i.e. late afternoon into evening vs. morning into afternoon).

3.3 SURFACE PREPARATION

- A. Applicator shall inspect all surfaces specified to receive a protective coating prior to surface preparation. Applicator shall notify Engineer of any noticeable disparity in the surfaces which may interfere with the proper preparation or application of the repair mortar and protective coating.
- B. All contaminants including: oils, grease, incompatible existing coatings, waxes, form release, curing compounds, efflorescence, sealers, salts, or other contaminants shall be removed.
- C. All concrete or mortar that is not sound or has been damaged by chemical exposure shall be removed to a sound concrete surface or replaced.
- D. Surface preparation method(s) shall be based upon the conditions of the substrate, service environment and the requirements of the epoxy protective coating to be applied.
- E. Surfaces to receive protective coating shall be cleaned and abraded to produce a sound surface with adequate profile and porosity to provide a strong bond between the protective coating and the substrate. Generally, this can be achieved with low pressure water cleaning using equipment capable of 5,000 psi at 4 gpm. Other methods such as high pressure water jetting (refer to NACE Standard No. 5/SSPC-SP12), abrasive blasting, shotblasting, grinding, scarifying or acid etching may also be used. Detergent water cleaning and hot water blasting may be necessary to remove oils, grease or other hydrocarbon residues from the concrete. Whichever method(s) are used, they shall be performed in a manner that provides a uniform, sound clean neutralized surface that is not excessively damaged.

- F. Infiltration shall be stopped by using a material which is compatible with the specified repair mortar and is suitable for topcoating with the specified epoxy protective coating.
- G. Test prepared surfaces after cleaning but prior to application of the epoxy coating to determine if a specific pH or moisture content of the concrete is required according to manufacturer's recommendations.
- H. The area between the manhole and the manhole ring and any other area that might exhibit movement or cracking due to expansion and contraction shall be grouted with a flexible or elastomeric grout or gel.
- I. Castings shall be abrasive blasted and coated to prevent corrosion.
- J. All surfaces shall be inspected by the County Inspector during and after preparation and before the repair material is applied.

3.4 APPLICATION OF REPAIR MATERIALS

- A. Areas where structural steel has been exposed or removed shall be repaired in accordance with the Engineer's recommendations.
- B. Repair materials shall meet the specifications herein. The materials shall be trowel or spray applied utilizing proper equipment onto specified surfaces. The material thickness shall be specified by the Engineer according to County requirements and manufacturer's recommendations.
- C. If using approved cementitious repair materials, such shall be troweled to provide a smooth surface with an average profile equivalent to coarse sandpaper to optimally receive the protective coating. No bug holes or honeycomb surfaces should remain after the final trowel procedure of the repair mortar.
- D. The repair materials shall be permitted to cure according to manufacturer recommendations. Curing compounds shall not be used unless approved for compatibility with the specified protective coating.
- E. Application of the repair materials, if not performed by the coating certified applicator, should be inspected by the protective coating certified applicator to ensure proper finishing for suitability to receive the specified coating.
- F. After abrasive blast and leak repair is performed, all surfaces shall be inspected for remaining laitance prior to protective coating application. Any evidence of remaining contamination or laitance shall be removed by additional abrasive blast, shotblast or other approved method. If repair materials are used, refer to these specifications for surface preparation. Areas to be coated must also be prepared in accordance with these specifications after receiving a cementitious repair mortar and prior to application of the epoxy coating.
- G. All surfaces shall be inspected during and after preparation and before the protective coating is applied.

3.5 APPLICATION OF PROTECTIVE COATING

- A. Application procedures shall conform to the recommendations of the protective coating manufacturer, including material handling, mixing, environmental controls during application, safety, and spray equipment.
- B. The spray equipment shall be specifically designed to accurately ratio and apply the specified protective coating materials and shall be regularly maintained and in proper working order.
- C. The protective coating material must be spray applied by a Certified Applicator of the protective coating manufacturer.
- D. Specified surfaces shall be coated by spray application of a moisture tolerant, solvent-free, 100% solids, epoxy protective coating as further described herein. Spray application shall be to a minimum wet film thickness of 80 mils and an average wet film thickness of 115 mils on the existing concrete manholes.
- E. Airless spray application equipment approved by the coating manufacturer shall be used to apply each coat of the protective coating. Air assisted spray application equipment may be acceptable, especially for thinner coats (<10 mils), only if the air source is filtered to completely remove all oil and water.
- F. If necessary, subsequent topcoating or additional coats of the protective coating should occur as soon as the basecoat becomes tack free, ideally within 12 hours but no later than the recoat window for the specified products. Additional surface preparation procedures will be required if this recoat window is exceeded.
- G. Fiberglass woven-roving fabric may be rolled into the resin or chopped glass spray applied with the resin for added tensile and flexural strength where desired. Sloped surfaces of the floor may be made non-skid by broadcasting aluminum oxide or silica sand into the surface prior to gelation.
- H. Depending on flow levels and how long flow can be stopped, inverts may be lined with an approved 100% solids, fast setting epoxy coating material.

3.6 TESTING AND INSPECTION

- A. During application a wet film thickness gage, such as those available through Paul N. Gardner Company, Inc. meeting ASTM D4414 - Standard Practice for Measurement of Wet Film Thickness of Organic Coatings by Notched Gages, shall be used to ensure a monolithic coating and uniform thickness during application.
- B. After the protective coating has set hard to the touch it shall be inspected with high-voltage holiday detection equipment. Surface shall first be dried, an induced holiday shall then be made on to the coated concrete surface and shall serve to determine the minimum/maximum voltage to be used to test the coating for holidays at that particular area. The spark tester shall be initially set at 100 volts per 1 mil (25 microns) of film thickness applied but may be adjusted as necessary to detect the induced holiday (refer to NACE RPO188-99). All detected holidays shall be marked and repaired by abrading the coating surface with grit disk paper or other hand tooling method. After abrading and cleaning, additional protective

coating material can be hand applied to the repair area. All touch-up/repair procedures shall follow the protective coating manufacturer's recommendations.

- C. Measurement of bond strength of the protective coating to the substrate shall be measured in accordance with ASTM D4541. Any areas detected to have inadequate bond strength shall be evaluated by the Engineer. Further bond tests may be required (at no additional cost to the County) in that area to determine the extent of potentially deficient bonded area and repairs shall be made by Applicator in strict accordance with manufacturer's recommendations.
- D. Manhole Testing - Type A: Manholes lined in their entirety may be vacuum tested. All pipes entering the manhole shall be plugged, taking care to securely place the plug from being drawn into the manhole. The test head shall be placed and the seal inflated in accordance with the manufacturer's recommendations. A vacuum pump of ten (10) inches of mercury shall be drawn and the vacuum pump shut off. With the valves closed, the time shall be measured for the vacuum to drop to nine (9) inches. Following are minimum allowable test times for manhole acceptance at the specified vacuum drop:

DEPTH (feet)	TIME (seconds)		
	48-inch diameter	60-inch diameter	72-inch diameter
4	10	13	16
8	20	26	33
12	30	39	49
16	40	52	67
20	50	65	81
24	59	78	97
Add for 2ft. more depth	5	6.66	8

Note: These number have been taken from ASTM C1244-93 (reapproved 2000)

If the manhole fails the initial test, repairs and adjustments necessary due to extenuating circumstances (i.e. pipe joint, liner, plug sealing) shall be made (at no cost to the County). Retesting shall proceed until a satisfactory test is obtained.

Manhole Testing - Type B: Manholes lined in their entirety (including invert) may be subjected to an exfiltration test. Incoming and outgoing sewer and service lines shall be plugged, the plugs restrained and the manhole filled with water to the top of the manhole frame. A soaking period of up to 1 hour will be allowed if bypassing of the sewage is not required or has been provided for. At the end of this optional soaking period, the manhole shall be refilled with water and the test begun. If the water loss exceeds that shown in the following table, the manhole will have failed the test. Repairs and adjustments necessary due to extenuating circumstances (i.e. pipe joint, liner, plug sealing) shall be made (at no cost to the County). Retesting shall proceed until a satisfactory test is obtained. Maximum Allowable Loss is determined assuming a standard 4 foot diameter manhole.

<u>Depth of Manhole</u>	<u>Maximum Allowable Loss</u>
Under 8 feet deep	1 inch in 5 minutes
Over 8 feet deep	1/8-inch per foot of depth in 5 minutes

- E. A final visual inspection shall be made by the Inspector and manufacturer's representative. Any deficiencies in the finished coating shall be marked and repaired according to the procedures set forth herein by Applicator (at no cost to the County).
- F. The municipal sewer system may be put back into non-severe operational service as soon as the final inspection has taken place. However, for severe corrosion duty such as high concentrations of acids, bases or solvents, 3 to 7 days and/or force cure by heat induction to the coated surfaces may be necessary prior to returning to service. Consult coating manufacturer for further details.

3.7 CLEAN-UP

- A. The Contractor shall keep the work area in a neat and orderly condition by frequent removal of debris. Upon completion of the coating process at each location, all debris and used material shall be promptly removed from the area. The area shall be left in a condition similar to, or better than, before the work was performed.

3.8 PROPERTY DAMAGE

- A. Any damage to the County's infrastructure or to private or public property shall be immediately repaired or rehabilitated to the County's satisfaction at no additional expense to the County. The property owner and the County shall be notified of any problems and repairs, in writing, immediately.

3.9 PUNCH LIST ITEMS

- A. The Contractor shall correct any problems found within 60 days of discovery. If a problem is not corrected within 60 days, the Contractor and/or the Surety shall be liable for the liquidated damages as set forth in section 8.09 of Howard County Design Manual Volume IV. The contractor shall maintain an updated list of Punch List Items, and submit it to the County once a week.

PART 4 FINAL ACCEPTANCE

- A. All CIPP sample testing and repairs to the installed CIPP as applicable shall be completed, before final acceptance, meeting the requirements of these specifications and documented in written form.
- B. All submittals listed in section 1.4 shall be made by the Contractor. If post inspection documentation is not submitted within two (2) weeks of the liner installation, the County may at its discretion suspend any further installation of CIPP until the post-installation

document is submitted. As a result of this suspension, no additional working days will be added to the contract, nor will any adjustment be made for increase in cost.

- C. Where leakage is observed through the wall of the manhole, the contractor shall institute additional testing including but not limited to air testing, localized testing and any other testing that will verify that the leakage rate of the installed CIPP does not exceed acceptable tolerances specified in the contract.

TECHNICAL SPECIFICATION C
SANITARY SEWER REHABILITATION OF SERVICE CONNECTIONS
WITH CURED-IN-PLACE PIPE

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes requirements for providing all labor, materials, equipment, tools, transportation, and supplies necessary to rehabilitate the specified service connections of gravity flow sanitary sewer lines by means of the Cured-In-Place Pipe (CIPP) process in accordance with the terms of this Contract.
- B. The work to be performed shall consist of, but not be limited to, the following:
1. Cleaning, televising, and videotaping the existing sewer service connections prior to reconstruction.
 - a. Contractor shall be responsible for confirming, to the best of his ability, the inside diameter and condition of each service connection to be rehabilitated.
 - b. The cleaning process shall include the removal of all loose debris, solids and roots via lateral launching cleaning equipment.
 - c. The television inspection shall be performed using a lateral launching type closed circuit television (CCTV) camera recorded in digital format.
 2. Bypass pumping shall be performed during those activities, which will otherwise restrict existing flows and/or services.
 - a. Contractor shall provide bypass pumping and/or diversion when required for acceptable completion of the liner installation.
 - b. Contractor shall provide the complete setup and maintenance of all bypass sewage facilities required to perform the work. Contractor shall fully man bypass pumping during its duration.
 - c. Bypass pumping shall be performed in such a manner as not to damage private or public property. The Contractor shall take all necessary precautions to insure that no private or public properties are subjected to a sewage backup or spill.
 - d. Pumped sewage shall be in an enclosed hose or pipe that is adequately protected from damage.
 - e. Diverted sewage shall be redirected into the sanitary sewer system. The dumping or free flow of sewage is strictly prohibited. The Contractor shall be liable for cleanup, damages, and resultant fines in the event of a spill.

3. The reconstruction of the specified existing sewer services by the cured-in-place pipe rehabilitation method. This CIPP liner will provide a full circumferential seal at the mainline as well as a fully structural liner within the lateral pipeline.
4. Re-televising and videotaping of rehabilitated service line. Re-televising shall be completed in the same direction as prior to rehabilitation.
5. Performance of acceptance testing.
6. Provision of a 2-year warranty on all materials and workmanship.

1.2 REFERENCES

The following is a list of the Standards referenced in this Section. All references to any standard listed below shall be to the most recent version in effect at the time of contract award.

A. American Society for Testing and Materials (ASTM)

1. ASTM D790: Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
2. ASTM F1216: Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin Impregnated Tube

B. Others

1. Howard County Standard Specifications and Details for Construction, Volume IV Design Manual

1.3 QUALITY ASSURANCE

- A. All prospective bidders shall be primarily engaged in the sewer service connection rehabilitation field and have been actively engaged in this field for at least five (5) years. In addition, prospective bidders shall have successfully completed at least 20 previous sewer service connection rehabilitation projects, of similar size and scope, using the proposed CIPP reconstruction process. Prospective bidders must demonstrate experience on projects of similar size and complexity. Prospective bidders shall complete the Contractor Qualification Questionnaire, Document F to these specifications, providing all the pertinent information with regards to their work history.
 1. References must include the project title, location, total cost, linear feet (if applicable), and number of service connections.
 2. References must contain client contact information; include client name, address and telephone number(s).
 3. Personnel directly involved with the installation of the service connection CIPP shall be trained by the manufacturer in the procedures for sewer service connection rehabilitation using the CIPP method.
- B. Quality assurance for all CIPP lining materials furnished by the Contractor shall meet requirements of this specification. The manufacturer and Contractor shall be responsible for the provisions of all test requirements specified herein as applicable. In addition, all CIPP

materials to be installed under this contract may be inspected at the plant for compliance with these specifications by an independent testing laboratory approved by the County. The Contractor shall require the manufacturer's cooperation in these inspections.

- C. Inspection of CIPP materials may also be made by the County after delivery. The CIPP liner shall be subject to rejection at any time on account of failure or unacceptable installation, even if any CIPP material may have been accepted as satisfactory at the place of manufacture. CIPP materials rejected after delivery shall be marked for identification and shall be removed from the work site at once.
- D. Care shall be taken in shipping and handling to avoid damaging the CIPP materials. Extra care will be necessary during cold weather construction. Any CIPP materials damaged in shipment or during storage shall be replaced as directed by the County.
- E. Any CIPP liner showing a split or tear, or which has received a blow that may have caused damage, even though no such damage can be seen, shall be marked to indicate such split, tear, etc. The County, at its discretion, may reject the liner and order removal of damaged material at once from the work site at no additional cost to the County.
- F. While stored, CIPP materials shall be adequately supported and protected. CIPP materials shall be stored in a manner as recommended by the manufacturer.
- G. All service connection CIPP lining placed shall be guaranteed by the Contractor and manufacturer for a period of two (2) years from the date of acceptance. During this period, defects discovered in the CIPP lining or workmanship, as determined by the County, shall be repaired or removed and replaced in a satisfactory manner at no cost to the County.

1.4 SUBMITTALS

- A. In addition to those submittals identified in the General Provisions, the following items shall be submitted by the Contractor:
 - 1. Submit to the County a copy of the weekly work schedule. With each weekly work schedule, submit design data and specifications data sheets listing all parameters used in the CIPP design and thickness calculations based on Appendix X1 of ASTM F-1216. Submit a completed Professional Engineer Certification form (included at end of Sanitary Sewer Rehabilitation of Service Connections with Cured-In-Place Pipe specification) for all lateral pipe CIPP design data.
 - 2. Submit certified test reports to demonstrate compliance of the proposed CIPP with the specified ASTM standards.
 - a) Certified copies of all test reports on the properties of the selected resin, fiber tube, and later, on the liner coupons performed by, and/or for the Contractor, shall be submitted to the County. Examples are the manufacturer's resin data test results and the infrared spectrum analysis of the resin. Results of additional product testing(s), normally performed for "in-house quality control" and process improvement, and shall also be provided to the County, at no cost to the County. The Contractor shall inform the County in writing, the name and designation of all in-house

quality control test(s) and the sampling frequency of the tests on the resin and liner materials. The County shall also have the right to require the testing to be done at designated liner locations(s) within the scope of the Contract.

- b) The County may request Contractor to test random samples. All samples shall be labeled before shipment for testing, and a duplicate piece shall be provided to the County, for inspection and/or testing by an independent laboratory, if required by the County. The County will compensate the Contractor for any such testing.
3. Submit the manufacturer's storage and handling instructions for the liner tube and resins.
4. Copies of the "wet-out" and "cure" reports in an approved format shall be submitted to the County immediately after the certified curing schedule is completed. The reports shall be attached to the Contractor's daily report. It shall be incumbent upon the Contractor to adhere to the resin manufacturer's data criteria, guidelines, and recommendations. A copy of the resin manufacturer's data shall be submitted to the County. Any variance in the guidelines or recommendations after the contract date shall require the County's written approval prior to implementing any such variances.
5. Information on seals and grouts.
6. Submit bypass pumping and/or diversion plans for review by the County at least 10 working days prior to start of work, if required to complete the scope of work. Plans shall identify the bypass pumping locations and methods with sufficient detail to assure that the work can be accomplished without sewage spill.

The bypass pumping plan must be specific and complete, including such items as schedules, locations, elevations, calculations, capacities of equipment, material, method of noise control for each pump and/or generator, methods and means for road crossings and all other incidental items necessary and/or required to insure proper protection of the facilities, including protection of the access and bypass pumping locations from damage due to the discharge flows, and in compliance with any requirements and permit conditions specified in these Contract Documents.

The bypass pumping plan shall include an emergency response plan to be followed in the event of a failure of the bypass pumping system. The Contractor shall notify the County 24 hours prior to commencing with the bypass pumping operation. The Contractor's plan for bypass pumping shall be satisfactory to the County before the Contractor shall be allowed to commence bypass pumping or line rehabilitation.
7. Records and videos documenting line cleaning and television inspection work.
8. Updated list of Punch List Items.

PART 2 PRODUCTS

2.1 CHEMICAL RESISTANCE

1. The liner shall be fabricated from materials which, when cured, will be chemically resistant to withstand internal exposure to sewage and sewage gases containing normal levels for domestic sewage of hydrogen sulfide, carbon monoxide, carbon dioxide, methane, traces of mercaptan, and external exposure to soil bacteria.
2. The manufacturer shall submit results of chemical resistance testing performed on specimens of the cured in place pipe. Tests shall be performed in accordance with ASTM F-1216.

2.2 SAMPLES – INSPECTION AND TESTING

- A. The County may direct the Contractor to obtain cured samples and test them in accordance with the listed ASTM Standards for determining and meeting properties.
- B. At the time of resin impregnation, each lot shall be inspected for defects. The resin shall not contain fillers, except those required for viscosity control, fire retardant, or to extend the pot life. Thixotropic agents that will not interfere with visual inspection may be added for viscosity control. Also, the opaqueness of the plastic coating shall not interfere with visual inspection. Resins may contain pigments, dyes, or colors that do not interfere with visual inspection of the cured-in-place liner pipe or its required properties. Additives may be incorporated that enhance physical and chemical resistant features.

2.3 LINER DESIGN

- A. The Contractor shall determine the recommended liner thickness for each service connection liner. Liners shall be designed to withstand internal and/or external pressures in accordance with the applicable provision of ASTM F-1216. Liner thickness calculations shall be performed based on a fully deteriorated pipe condition. For the purpose of design, groundwater shall be assumed to be at the ground surface. The design life of the CIPP shall be 50 years. Thickness design calculations shall be prepared and certified by a Maryland registered Professional Engineer. The certification shall be provided using the form included in these documents.
- B. The design thickness of the installed liner shall be accurately measured and certified by the Contractor. The actual thickness of the installed **structural wall layer** of the cured-in-place liner shall not be less than the design thickness. Overall thickness greater than design shall not be allowed if this results in reduction of hydraulic capacity of the sewer being rehabilitated.
- C. The tube shall be designed to a size that, when cured, will fit tightly against the internal circumference of the original conduit, so there are no wrinkles and no annular spaces between the host pipe and the cured-in-place pipe; this tight fit minimizes loss of original

pipe size. Allowance for longitudinal and circumferential stretching of the tube during installation shall be made by the Contractor.

- D. The Contractor shall design the length of the tube to effectively carry out installation. All dimensions shall be field verified prior to fabrication and installation of the liner.

2.4 LINER FABRICATION

- A. The liner shall consist of one or more layers of flexible needled felt, or an equivalent woven or non-woven material, capable of carrying resin, withstanding installation pressures and curing temperatures, and compatible with the resin system utilized. The liner shall be continuous and of sufficient length to extend from manhole-to-manhole, fit irregular pipe sections, and of size to fit tightly against the existing pipe walls. Allowances for longitudinal and circumferential stretching of the liner during installation shall be made by the Contractor.

2.5 RESINS

- A. Resins used shall be compatible with the liner system employed. The material supplied may be polyester, vinylester or epoxy thermoset resins able to cure to final properties per manufacturer's specifications. The resin shall contain the proper catalyst mix ration and shall be sufficiently mixed.
- B. The resin system to be used shall be manufactured by an approved company selected by the CIPP process manufacturer. Relevant information from the resin manufacturer shall include, but may not be limited to, the following: specifications, characteristics, and properties, methods of application, and infrared spectrography analysis of the resin used for each lot. This data shall be submitted to the County for approval prior to rehabilitation of the sanitary sewer service connection. The Contractor shall also submit a written certification, from the resin manufacturer, that the resin material to be used is compatible with the proposed application. Certification shall also address curing temperature and curing schedule (i.e., duration of the temperature at all stages of curing) if a heat source is utilized. The Contractor is hereby notified that field installation practices shall be checked against the aforementioned certification. No variance shall be allowed without prior written approval of the County.

2.6 MATERIAL PROPERTIES

- A. The cured liner shall meet or exceed the following material properties:

Material Property	Test Method	Minimum Value
Initial Flexural Strength	ASTM D-790	4,500 psi
Long-term Flexural Strength	ASTM D-790	50% of initial
Initial Flexural Modulus of Elasticity	ASTM D-790	250,000 psi
Long- term Flexural Modulus of Elasticity	ASTM D-790	50% of initial

2.7 WORKMANSHIP

- A. The finished liner shall be continuous over the entire specified length of the service connection from the seal at the connection to the main line sewer to the predetermined end point in the service connection. The liner will be free of foreign inclusions, wrinkles, dry spots, lifts, pinholes and delaminations. The lining shall be impervious and free of any leakage from the pipe to the surrounding ground or from the ground to the inside of the lined service connection. The inner surface shall have a smooth finish and be free of cracks and crazing. Some minor waviness that in the County's opinion will not appreciably decrease the flow cross-section or affect the flow characteristics shall be permissible.
- B. The service connection liner shall be sealed with an expandable water stop, such as Hydrotite or equivalent at the connection to the main line sewer.
- C. Any defects that, in the opinion of the County, will affect the integrity or strength of the lining or the hydraulic characteristics of the liner system shall be repaired or the liner replaced at no cost to the County.

PART 3 EXECUTION

3.1 GENERAL

- A. The Contractor shall visit all line segments with service connections specified for rehabilitation and notify the County Project Manager in writing of any site conditions, such as access, which would prevent the accomplishment of the work.
- B. The Contractor shall deliver the uncured resin impregnated liner to the site, provide all equipment required to install the liner into the service connection, expand the liner in accordance with the manufacturer's standard procedures, and cure it in place. The liner shall not be impregnated with resin more than a period of time greater than recommended by manufacturer before the proposed time of installation and shall be stored in accordance with the manufacturer's recommendations.
- C. The Contractor shall notify the County Project Manager a minimum of four (4) days in advance when wastewater and/or water service interruption will take place and the approximate duration. The Contractor shall be responsible for notifying each residence/business affected by water/sewer service interruption a minimum of 48 hours prior to the interruption. Notification shall be by a County approved door tag.
- D. The Contractor shall be on site with all necessary equipment in good working order no later than 7:30 a.m. The work hours shall be 7:30 a.m. to 5 p.m. (or dark), Monday to Friday, excluding holidays. Every effort shall be made by the Contractor to complete all work by 8 p.m. the same day. The Contractor shall notify each residence not in service by 5 p.m. of the estimated time the service connection will be completed. No work, unless required by an emergency and authorized by the County, will be performed on weekends and holidays.

- E. Work performed shall be in accordance with local, state, and federal standards and requirements. Safety and maintenance of traffic are the responsibility of the Contractor. Specific adherence to Confined Space Entry Regulations shall be followed by the Contractor.
- F. The County will provide the following:
 - 1. The Contractor under the direct oversight of County personnel shall perform the turn off/turn on of water services to connected users affected by the work. The Contractor, with County assistance, shall locate all water service valves and sewer cleanouts at least five (5) days prior to the commencement of work; and any valves/cleanouts on affected services that cannot be located or require remediation will be repaired by the County.

3.2 MAINTENANCE OF SEWAGE FLOWS

- A. The Contractor shall be responsible for sewage bypassing around the service connection pipe to be televised or lined through an existing cleanout. The Contractor's personnel shall be present at the jobsite whenever bypass pumping is being performed. Pump and bypass lines shall be of adequate capacity and size to handle flow without affecting the service connections upstream of the service connection being lined. The Contractor shall be responsible for cleanup, repair, and property damage costs and claims resulting from sewage overflow or backup caused by inadequate pumping or any other reason related to the Contractor's lining work. Pumps and equipment shall be continuously monitored by a qualified mechanic capable of starting, stopping, refueling, and maintaining this equipment during the rehabilitation work.
- B. All pumps used shall be fully automatic self-priming units that do not require the use of foot valves or vacuum pumps in the priming system. The pumps may be electric or diesel powered. All pumps shall be constructed to allow dry running for long periods of time to accommodate the cyclical nature of sewerage flows.
- C. The Contractor shall test and verify that the standby pump, piping and all associated equipment is operational before starting bypass operations. The standby pump shall be capable of pumping the entire flow at the required total dynamic head.
- D. The standby pumping facility shall include a generator to provide power to the pump and a standby pump of equal capacity, should the primary pump fail.
- E. If the cleanout is not available, the Contractor will notify the resident and confirm that the lateral can be plugged for the duration of the lateral lining, not to exceed four (4) hours.
- F. The Contractor shall take appropriate steps to ensure that all pumps, piping, and hoses that carry raw sewage are protected from vehicular traffic and pedestrian traffic.
- G. In the event, during any form of "Maintenance of Sewage Flows" that raw sewage is spilled, discharged, leaked or otherwise deposited in the open environment, due to the Contractor's work, the Contractor is responsible for any cleanup of solids and disinfecting of the area affected. This work shall be performed at the Contractor's expense with no additional cost to the County. The Contractor shall be charged back for any fines, penalties, or other costs or damages imposed upon the County by any agency or private party as a result of a spill or improper discharge by the Contractor.

3.3 CLEANING OF SEWER SERVICE CONNECTION

- A. Prior to any service connection CIPP reconstruction process, it shall be the responsibility of the Contractor to clean debris out of the sewer service in accordance with the "Sewer Line Cleaning" section of the most recent publication of NASSCO's Specification Guidelines (for) Wastewater Collection Systems Maintenance & Rehabilitation. In addition, prior to television inspection and video recording, the sewer service shall be cleaned to such a condition that the video camera can adequately discern structural defects, misalignments, and points of infiltration. Prior to pipe rehabilitation, all sand, rocks, gravel, mud, grease, and other debris that could interfere with or otherwise adversely impact the success of the rehabilitation shall be removed.
- B. Solids and debris resulting from the cleaning operation shall be collected and removed from the downstream manhole and disposed of at a site selected by the Contractor and approved by the County. Under no circumstance shall sewage or solids be dumped onto the surface, street, or into waterways, ditches, inlets, or storm drains.
- C. Cleaning of service connections will be completed either through a clean out, if available, or by launching the equipment from the main line, when a cleanout is not available. The length of the service connection pipe to be cleaned will be no less than the length required for lining.

3.4 TELEVISION INSPECTION

- A. After the sewer service connection to be lined has been cleaned (pre-inspection), and after liner installation (post-inspection), the service connection shall be inspected with a television camera able to provide a total view of the connection from the main line and the lateral pipe. Lighting for the camera shall be directed, and of sufficient intensity to provide a clear picture of the entire periphery of the sewer. The Contractor shall supply the County with a clear, viewable, color video showing the service connection seal at the mainline and the rehabilitated length of lateral pipeline. Video shall be provided as high definition logs and CD/DVD format and recorded at standard play speed. A copy of all records shall be submitted to the County and shall be submitted to the County on a biweekly basis and prior to request for payment. Submitted records and videos will become the property of the County. If both pre and post-rehabilitation digital records are not presented prior to a payment request for a work order, payment for the work will not be made and the request will be rejected.
- B. Each service connection will be identified by street name, upstream and downstream manhole numbers, service connection address, length of line, and service connection diameter. This information shall be indicated on the video recording using audio and/or superimposed text.
- C. During televising and video recording, each service connection shall be measured to determine the exact length for billing purposes. Measurement for location of rehabilitation shall be by the footage meter on the cable (or a mutually agreed upon device), which shall

appear continuously on the video recording. Footage meter shall be standardized to reflect the distance from the inside wall of the mainline sewer to the end of the liner in the lateral pipeline. Accuracy of the distance meter shall be checked by use of a walking meter, roll-a-tape, or other suitable device.

3.5 SEWER PREPARATION PRIOR TO SERVICE CONNECTION LINER INSTALLATION

- A. Any protruding pieces of concrete, "dropped" joints, or broken pipe shall be corrected by point repairs so that the service connection pipe is left in a clean, smooth condition ready for lining, unless otherwise jointly determined by the Contractor and the County that the defect will not compromise the integrity of the liner. Prior to liner installation, all active leaks of a magnitude to compromise the liner shall be stopped using chemical grout. If conditions, such as broken pipe and major blockages, are found that would prevent proper cleaning, or where additional damage could result if cleaning were attempted or continued, the Contractor shall notify the County. The County may or may not; (1) direct the Contractor to provide a cost proposal for point repair; (2) sub-contract the point repair to others, (3) perform the point repair. The County reserves the right to proceed in the manner which, in their opinion, best serves the interest of the County.

3.6 SERVICE CONNECTION LINER INSTALLATION, CURING, AND COOL-DOWN

- A. The installation process may use water, air, winch, or any other suitable means to fully extend the liner to the termination point and expand the liner to equal the conduit inside diameter. Care shall be taken during the installation not to over stress the liner material.
- B. The Contractor shall impregnate the liner tube with the appropriate resin system under controlled conditions, in accordance with the manufacturer's recommendations. The resin shall be properly stored and have the proper mix ratio in accordance with the manufacturer's recommendations. The volume of resin used should be sufficient to fill all voids in the tube material at nominal thickness and diameter. The volume should be adjusted by 5 to 10 percent excess resin for the change in resin volume due to polymerization and to allow for any migration of resin into the cracks and joints in the host pipe. The Contractor shall submit the actual resin volume used.
- C. During installation, the pressure holding the tube tight against the host pipe shall be maintained between the minimum and maximum pressures, as specified by the tube manufacturer, until the installation has been completed. If the Contractor plans to use a lubricant during inversion, the product specifications shall be submitted to the County for review and approval prior to use. The lubricant shall not cause any upset to downstream wastewater treatment plants.
- D. Contractor shall allow the liner to cure in accordance with the liner and resin manufacturers' recommendations. The installed liner tube may be cured utilizing air, water, or steam. If the Contractor uses a heat source for curing, the Contractor shall provide a suitable heat source and re-circulation equipment capable of delivering the heated medium to the far end of the liner quickly and uniformly to raise the temperature of the inserted liner to that required to start the exothermic reaction of the resin and effectively cure the resin as determined by the catalyst system employed.

- E. Temperature in the service connection pipe during the cure period shall be as recommended by the resin manufacturer. The heat source, if used, shall be fitted with suitable monitors to gauge the temperature in and out of the line, to determine when uniform temperature is achieved throughout the length of the liner. The temperature shall be maintained for the period required to properly cure the resin as recommended by the resin system manufacturer and as determined by the existing pipe material, diameter, length, liner thickness, and ground conditions (moisture level, temperature, and thermal conductivity of the soil).
- F. The new service connection pipe liner shall be cooled at temperatures recommended by the liner manufacturer before relieving the pressure or static head. Cool-down shall be accomplished such that a vacuum will not be developed which may damage the installed line.
- G. The finished product shall be continuous from the full circumferential seal created at the main line connection to the predetermined end of the lateral pipe liner and shall be free from pinholes, cracks, thin spots, dry spots, uncured resin, delaminations, and lifts. There shall be no visible infiltration through the liner. Should the full wrap liner not achieve a tight seal to the inside mainline liner wall, a proper seal shall be made, to a watertight condition, by a method to be proposed by the Contractor. During the warranty period, any defects that will affect the integrity or strength of the product shall be repaired at the Contractor's expense, in a manner acceptable to the County.

3.7 REPAIRS – INSPECTION AND TESTING

- A. Each rehabilitated service connection shall be inspected by the Contractor via television inspection. The CIPP shall conform to the standards of workmanship described herein. If any pinholes, thin spots, dry spots, delaminations, lifts, or other defects or inferior workmanship are found, the defect and inferior workmanship shall be corrected by the Contractor to the satisfaction of the County at no additional cost.
- B. The Contractor shall submit a method to the County, for approval, to obtain representative samples from the installed liners for testing to verify compliance with installed material specifications.
- C. The County will select service connections, comprising approximately 10 percent (10%) of the total quantity of services rehabilitated, for testing. For each service connection selected, the Contractor shall provide a certified testing of three (3) CIPP specimens for the flexural properties. Flat plate samples shall be provided. The following test procedures should be followed:
 - 1. Finished wall thickness (designed) shall be defined as the thickness of the structural layer. Samples of the finished wall shall be evaluated (tested) for true finished wall thickness by deducting the thickness of any plastic films from the measurements.
 - 2. Short Term Flexural (Bending) Properties – the initial tangent flexural modulus of elasticity and flexural strength should be measured for gravity pipe applications in accordance with ASTM D-790 and shall meet the requirements. Plastic coating thickness shall not be included in determination of sample thickness.

- D. Testing shall be performed by an independent laboratory proposed by the Contractor and approved by the County. All expenses for the certified testing of specimens under this contract shall be paid by the Contractor.
- E. Structural wall layer thickness shall not be less than design thickness. Overall thickness greater than design shall not be allowed if the hydraulic capacity of the pipe is reduced. The thickness shall be measured accurately using properly calibrated micrometers.
- F. Service connection liners that do not pass these inspections and materials test will not be accepted and shall be replaced by the Contractor at his own cost.
- G. Where leakage is observed through the wall of the lateral, the contractor shall institute additional testing including but not limited to air testing, localized testing and any other testing that will verify that the leakage rate of the installed CIPP does not exceed acceptable tolerances specified in the contract.

3.8 CLEAN-UP

- A. The Contractor shall keep the work area in a neat and orderly condition by frequent removal of debris. Upon completion of the lining process at each location, all debris and used material shall be promptly removed from the area. The area shall be left in a condition similar to, or better than, before the work was performed.

3.9 PROPERTY DAMAGE

- A. Any damage to the County's infrastructure or to private or public property shall be immediately repaired or rehabilitated to the County's satisfaction at no additional expense to the County. The property owner and the County shall be notified of any problems and repairs, in writing, immediately.

3.10 PUNCH LIST ITEMS

- A. The Contractor shall correct any problems found within 60 days of discovery. If a problem is not corrected within 60 days, the Contractor and/or the Surety shall be liable for the liquidated damages as set forth in section 8.09 of Howard County Design Manual Volume IV. The contractor shall maintain an updated list of Punch List Items, and submit it to the County once a week.

PART 4 FINAL ACCEPTANCE

- A. All CIPP sample testing and repairs to the installed CIPP as applicable shall be completed, before final acceptance, meeting the requirements of these specifications and documented in written form.

- B. All submittals listed in section 1.4 shall be made by the Contractor. If post inspection documentation is not submitted within two (2) weeks of the liner installation, the County may at its discretion suspend any further installation of CIPP until the post-installation document is submitted. As a result of this suspension, no additional working days will be added to the contract, nor will any adjustment be made for increase in cost.

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* * * *

PROFESSIONAL ENGINEER CERTIFICATION FORM

The undersigned hereby certifies that he/she is a Professional Engineer registered in the State of Maryland and that he/she is employed by: (Name of Contractor) _____ to design cured-in-place liner. The undersigned further certifies that he/she has performed the design of the specified liner diameters and thicknesses and that the design is in conformance with these specifications, all applicable local, state and federal codes, rules and regulations. It is further certified that the signature and Professional Engineer stamp will be affixed to all calculations and drawings used in, and resulting from the design.

The undersigned hereby agrees to make all original design drawings and calculations available to Howard County, Department of Public Works within seven (7) days following a request by the County.

Professional Engineer Name (please print)

Signature

Professional Engineer Stamp

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* * * *

SAMPLE
DOCUMENTS TO BE
EXECUTED UPON
CONTRACT AWARD

TECHNICAL SPECIFICATIONS

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HOWARD COUNTY, MARYLAND
PERFORMANCE BOND

Principal

Business Address of Principal

Surety

Obligee

HOWARD COUNTY, MARYLAND

a corporation of the State of _____
and authorized to do business in the State of
Maryland

Penal Sum of Bond (express in words and figures)

Date Bond Executed

Contract Number:

KNOW ALL MEN BE THESE PRESENTS, That we, the Principal named above and Surety named above, are held and firmly bound unto the Obligee named above in the Penal Sum of this Performance Bond stated above, for the payment of which Penal Sum we bind ourselves, our heirs, executors, administrators, personal representatives, successors, and assigns, jointly and severally, firmly by these presents. However, where a surety is composed of corporations acting as co-sureties, we, the co-sureties, bind ourselves, our successors and assigns, in such Penal Sum jointly and severally as well as severally only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each co-surety binds itself, jointly and severally with the Principal, for the payment of such sum as appears above its name below, but if no limit of liabilities is indicated, the limit of such liability shall be the full amount of the Penal Sum.

WHEREAS, Principal has entered into or will enter into a contract with Howard County, Maryland, which Contract is described and dated as shown above. The contract and all items incorporated into the Contract, together with any and all changes, extensions of time, alterations, modifications, or additions to the Contract or to the work to be performed thereunder or to the Plans, Specifications, General Provisions, Special Provisions, or any of them, or to any other items incorporated into the Contract shall hereinafter be referred to as the "Contract," which is specifically incorporated herein be reference as if fully set forth herein, including but not limited to the Choice of Law and Forum provisions of the Contract.

WHEREAS, it is one of the conditions precedent to the final award of the Contract that these presents be executed and delivered to the County.

NOW, THEREFORE, this Performance Bond shall remain in full force and effect unless and until the following terms and conditions are met:

1. The Principal shall well and truly perform the Contract, including all warranty or guarantee obligations, and shall discharge any and all liability for latent defects, for which the Surety shall also be liable;
2. The Principal and Surety shall comply with the terms and conditions of this Performance Bond;
3. If the Obligeo notifies both the Contractor and the Surety at their addresses described in this Bond that the Obligeo is considering declaring the Contractor in default of the Contractor's obligations under the Contract, then, the Surety, at the Obligeo's request, shall arrange a conference with the Principal and the Obligeo to discuss methods of performing the Contract. If the Obligeo, Principal and the Surety agree, the Principal shall be allowed a reasonable time, as determined by the rights to declare the Principal in default under the contract and terminate the Principal's right to proceed or to avail itself of any other right or remedy under the Contract;
4. If the Obligeo declares the Contractor in default and terminates the Principal's right to proceed prior to final acceptance, then the Surety shall:
 - a. Undertake to perform and complete the Contract itself through its agents or through independent contractors; or
 - b. Obtain bids or negotiated proposals from qualified contractors acceptable to the Obligeo for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the Obligeo with a contractor selected with the Obligeo's concurrence and acceptable to the Obligeo to be secured with performance and payment bonds executed by a qualified Surety in a form acceptable to the Obligeo, and pay to the Obligeo the cost of completion of the contract in excess of the Balance of the Contract price; or
 - c. If the cost to complete the Contract is in excess of the Balance of the Contract price plus the Penal Sum of the Performance Bond, then either obtain bids or negotiated proposals from qualified contractors acceptable to the Obligeo for a contract for performance and completion of the contract, arrange for a contract to be prepared for execution by the Obligeo with the contractor selected with the Obligeo's concurrence and acceptable to the Obligeo, to be secured with performance and payment bonds executed by a qualified Surety in a form acceptable to the Obligeo and pay to the Obligeo the excess cost of completion up to Penal Sum of the Bond as the excess costs are incurred by the Obligeo; or pay to the Obligeo the Penal Sum of the Bond within thirty (30) days of the date when the Surety determines the cost to complete the Contract is in excess of the sum of the Penal Sum of the bond and the Balance of the Contract price.
5. If the Surety complies with the obligations contained in paragraph 4 of this Bond, then, the Surety's liability shall be limited to the Penal sum of its bond.

6. If the Surety contests the propriety of the default and termination of the Principal's right to proceed, the Surety shall, nevertheless, comply with the obligations contained in paragraph 4 of this Bond but, in that event, the Surety shall be entitled to exercise all of the Principal's remedies under the Contract, including but not limited to asserting any and all claims which the Principal may have.
7. The balance of the contract Price shall be the total amount payable by the Oblige to the Principal under the Contract after adjustments for any approved change orders, including allowance to the Principal of any amounts received or to be received by the Oblige in settlement of insurance or other claims for damage to which the Contractor is entitled, reduced by all payments properly made to and on behalf of the Principal under the Contract and less any deductions made by the Oblige under the Contract for any damages for which the Principal may be liable to the Oblige under the Contract.
8. If, after notice of default under the contract and termination of the Principal's right to proceed, the Surety does not comply with the obligations contained in paragraph 4 of this Bond, then the Oblige, within fifteen (15) days after notice to the Surety, may have the remaining Contract work completed and the Surety shall be liable for all completion costs and other costs and damages that the Oblige may incur as a result of the Surety's failure to comply with the terms of this Bond.

The Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the Specifications accompanying the same shall in any way affect its obligations under the Bond and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications. Any increase in the contract amount shall automatically result in a corresponding increase in the penal amount of the Bond, without notice to or consent from the Surety, such notice and consent being hereby waived. Decreases in the contract amount shall not, however, reduce the penal amount of the Bond unless specifically provided for in said change order.

The Performance Bond shall be governed by and construed in accordance with laws of the State of Maryland exclusive of its choice of law rules and any reference herein to the Principal or Surety in the singular shall include all entities in the plural who or which are signatories under the Principal or Surety heading below.

IN WITNESS WHEREOF, Principal and Surety have set their hands and seals to the Performance Bond. It is specifically understood and agreed that this Bond shall be a sealed instrument for all purposes. If any individual is a signatory under the Principal heading below, then each such individual has signed below on his or her own behalf, has set forth below the name of the firm, if any, in whose name he or she is doing business, and has set forth below his or her title as sole proprietor. If any partnership or joint venture is a signatory under the Principal heading below, then all members of each such partnership or joint venture have signed below, each member has set forth below his or her title as a general partner, limited partner, or member of joint venture, whichever is applicable. If any corporation is a signatory under the Principal of Surety name to be set forth below, a duly authorized representative of the corporation to affix below the corporation's seal and to attach hereto a notarized corporate resolution or power of attorney authorizing such action, and each such duly authorized representative to sign below and to set forth below his or her title as a representative of the corporation. If any individual acts as a witness to any signature below, then each such individual has signed below and has set forth below his or her title as a witness. All of the above has been done as of the date of the Bond shown above.

In Presence of: Individual Principal
Witness
..... as to(SEAL)

Presence of: Co-Partnership Principal
Witness
.....(SEAL)
(Name of Co-Partnership)

..... as to By:.....(SEAL)
..... as to(SEAL)
..... as to(SEAL)

Corporate Principal
.....
Attest: (Name of Corporation)

Corporate Secretary By:..... CORPORATE SEAL
President

.....
(Surety)

Attest: (SEAL) By:..... CORPORATE SEAL
SEAL

..... Title:.....
Signature

Bonding Agent's Name:.....
(Business Address of Surety)

Agent's Address:.....



**HOWAR COUNTY, MARYLAND
PAYMENT BOND**

Principal

Business Address of Principal

Surety

Obligee

HOWARD COUNTY, MARYLAND

a corporation of the State of _____
and authorized to do business in the State of
Maryland

Penal Sum of Bond (express in words and figures)

Date Bond Executed

Description of Contract

Contract Number:

KNOW ALL MEN BY THESE PRESENTS, That we, the Principal named above and Surety named above, being authorized to do business in Maryland, and having business addresses as shown above, are held and firmly bound unto the Obligee named above, for the use and benefit of Claimants as hereinafter defined, in the Penal Sum of this Payment Bond stated above, for the payment of which Penal Sum we bind ourselves, out heirs, executors, administrators, personal representatives, successors, and assigns, jointly and severally, firmly by these presents. However, where a surety is composed of corporations acting as co-sureties, we, the co-sureties, bind ourselves, out successors and assigns, in such Penal Sum jointly and severally as well as severally only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each co-surety binds itself, jointly and severally with the Principal, for the payment of such sum as appears above its name below, but if no limit is indicated, the limit of such liability shall be the full amount of the Penal Sum.

WHEREAS, Principal has entered into or will enter into a Contract with Howard County, Maryland, which Contract is described and dated as shown above, and incorporated herein be reference. The contract and all items incorporated into the modifications, or additions to the contract or to the work to be performed thereunder or to the Plans, Specifications, and Special Provisions, or any of them, or to any other items incorporated into the Contract shall hereinafter be referred to as the "Contract."

WHEREAS, it is one of the conditions precedent to the final award of the Contract that these presents be executed and delivered to the Obligee.

NOW, THEREFORE, the condition of this obligation is such that if the Principal shall promptly make payment to all Claimants as hereinafter defined, for all sums justly due, labor and materials furnished, supplied, and reasonably required for use in the performance of the Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect, subject to the following conditions:

1. A claimant is defined to be any and all of those persons supplying labor and materials in the prosecution of the work provided for in the Contract entitled to the protection provided by Sec. 17-101, et seq., State Finance and Procurement Article of the Annotated Code of Maryland ("Maryland Little Miller Act").
2. The above named Principal and Surety hereby jointly and severally agree with the Obligee that every Claimant as herein defined, who has not been paid in full may, pursuant to and when in compliance with the provisions of the Maryland Little Miller Act, sue on this Bond for the use of such Claimant, prosecute the suit to final judgment for such sum or sums as may be justly due Claimant and have execution thereon. The Obligee shall not be liable for the payment of any costs or expenses of any such suit.

The Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the Specifications accompanying the same shall in any way affect its obligations on this Payment Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

This Payment Bond shall be governed by and construed in accordance with the laws of the State of Maryland exclusive of its choice of laws rules and any reference herein to Principal or Surety in the singular shall include all entities in the plural who or which are signatories under the Principal or Surety heading below.

IN WITNESS WHEREOF, Principal and Surety have set their hands and seals to this Payment Bond. If any individual is a signatory under the Principal heading below, then each such individual has signed below on his or her own behalf, has set forth below the name of the firm, if any, in whose name he or she is doing business, and has set forth below his or her title as a sole proprietor. If any partnership or joint venture is a signatory under the Principal heading below, then all members of each such partnership or joint venture have signed below, each member has set forth below the name of the partnership or joint venture, and each member has set forth below his or her title as a general partner, limited partner, or member of joint venture, whichever is applicable. If any corporation is a signatory under the Principal or Surety heading below, then each such corporation has caused the following: The corporation's name to be set forth below, a duly authorized representative of the corporation to affix below the corporation's seal and to attach hereto a notarized corporate resolution or power of attorney authorizing such action, and each such duly authorized representative to sign any individual acts as a witness to any signature below, then each such individual has signed below and has set forth below his or her title as a witness. All of the above has been done as of the date of this Bond shown above.

In Presence of: Individual Principal
Witness
..... as to(SEAL)

In Presence of: Co-Partnership Principal
Witness
.....(SEAL)
(Name of Co-Partnership)

..... as to By:.....(SEAL)
..... as to(SEAL)
..... as to(SEAL)

Corporate Principal
.....
(Name of Corporation)

Attest:
Corporate Secretary
By:..... AFFIX
President CORPORATE
SEAL

.....
(Surety)
Attest: (SEAL) By:..... AFFIX
CORPORATE
SEAL

.....
Signature Title:.....

Bonding Agent's Name:.....
(Business Address of Surety)

Agent's Address:.....

HOWARD COUNTY, MARYLAND CONTRACTOR AGREEMENT

THIS AGREEMENT ("Contract"), is made this _____ day of _____ in the year _____, by and between [Insert Name of Contractor , Insert Contractor's Address , Insert Phone #] ("the Contractor"), and HOWARD COUNTY, MARYLAND, ("the County") as a result of Invitation for Bid No. _____ - _____.

RECITALS

This Agreement is subject to all the conditions, covenants, stipulations, terms and provisions contained in the Contract Documents as described in Paragraph 7 of this Agreement. The Contractor has been notified of award, for a sum equal to the aggregate cost of the work, labor, materials, and supplies done or furnished, at the prices and rates respectively named in the attached proposal (also referred to as Contractor's "Bid").

This Agreement fulfills the conditions of the Contract's award, which provides that a formal contract should be executed by and between the Contractor and the County evidencing the terms of the award.

AGREEMENTS

1. The Contractor covenants and agrees with the County that it will well and faithfully construct the project known as [Insert Contract Title] work, in accordance with each and every one of the conditions, covenants, stipulations, terms and provisions contained in the Contract Documents, at and for a sum equal to the aggregate cost of the work, labor, materials, and supplies done and furnished at the prices and rates respectively named in the attached proposal. The Contractor further covenants and agrees that it will well and faithfully comply with and perform each and every obligation imposed upon him by the Contract Documents, or the terms of the award.
2. The Contractor covenants and agrees that its obligations pursuant to the Contract Documents include but are not limited to the furnishing of all material, labor, equipment, supplies, plant, tools, and all other services, facilities and expenses necessary for the full operational performance and completion of the requirements of the Contract Documents.
3. The County agrees that it will pay the Contractor, when due and payable under the terms of said Contract Documents and of said award, the sums set forth in Contractor's proposal, and the Contractor agrees that it will well and faithfully comply with and perform each and every obligation imposed upon it by this Agreement.
4. In no event shall the total compensation paid to the Contractor under this Agreement exceed the sum of _____ Dollars (\$ _____) during the entire term of this Agreement. [insert if applicable, including renewals thereof.]
5. The Contractor (if a corporation), hereby certifies that it is a Maryland corporation in good standing or a foreign corporation registered to do business in Maryland with the Maryland State Department of Assessments and Taxation.
6. The Contractor hereby certifies that it has read and understands the provisions of the Howard County Charter dealing with conflicts of interest.
7. The Contractor and County agree that the following enumerated documents, collectively referred to as Contract Documents, are all essential documents of this Agreement and are made a part hereof as if fully set forth herein:

- 7.1. Contractor Agreement
- 7.2. General Conditions for Construction and Applicable Addenda
- 7.3. Proposal and Special Provisions
- 7.4. Instructions to Bidders
- 7.5. Bid Form
- 7.6. Performance Bond No. _____
- 7.7. Labor and Materials Payment Bond No. _____
- 7.8. All Drawings and Specifications
- 7.9. All Addenda duly issued prior to submission of Bids
- 7.10. All Change Orders duly issued
- 7.11. Any amendments to the Contract duly executed by both parties, and
- 7.12. Additional documents listed on any Addendum attached hereto.

8. Ownership of Goods.

All finished or unfinished work, reports, or goods that are the subject of this Agreement; including any licenses or consents acquired by the Contractor for performance hereunder, shall be and shall remain the property of the County.

9. Term. All proposed work shall be completed within 120 calendar days from notice to proceed

10. Ethics.

10.1 The Contractor certifies that the officer of the corporation who is executing this Agreement has read and understands Attachment A, entitled Howard County Charter and Code References to Ethics, which contains the provisions of Section 901(a) of the Howard County Charter dealing with conflicts of interest and Section 22.204 of the Howard County Code dealing with conflicts of interest.

10.2 The Contractor certifies that he/she has (1) not been a party to an agreement to bid a fixed or uniform price; (2) not offered nor will offer any gratuity to any county official or employee; and (3) not violated any of the fair employment provisions of Code Sec. 4.119 Ethics and Fair Employment Practices detailed in Attachment A.

11. Governing Law.

This Agreement shall be governed by and construed in accordance with the laws of the State of Maryland without regard to any choice of law principles that would dictate the laws of any other jurisdiction. The parties agree that the exclusive venue for any and all actions related hereto shall be the appropriate Federal or State court located within the State of Maryland.

This Agreement is made and entered into in Maryland and is to be construed under the laws of Maryland. As to the Contractor, this Agreement is intended to be a contract under seal and a specialty.

ATTEST:

APPROVED AND AGREED TO:
[INSERT LEGAL NAME OF CONTRACTOR]

Secretary

Print Name

By: _____ [Insert Name] _____ (SEAL)
Title: _____ [Insert Name] _____

ATTEST:

APPROVED:
HOWARD COUNTY, MARYLAND

Lonnie R. Robbins
Chief Administrative Officer

By: _____
Allan H. Kittleman
County Executive

APPROVED FOR LEGAL SUFFICIENCY:

Gary W. Kuc
County Solicitor

REVIEWING ATTORNEY:

Type Name: _____
Title: _____

APPROVED FOR SUFFICIENCY OF FUNDS:

DEPARTMENT APPROVED:

Stanley J. Milesky
Director of Finance

James M. Irvin
Director of Public Works

ATTACHMENT A TO CONTRACTOR AGREEMENT

HOWARD COUNTY CHARTER AND CODE REFERENCES TO ETHICS

Charter Section 901. Conflict of Interest.

(a) **Prohibitions.** No officer or employee of the County, whether elected or appointed, shall in any manner whatsoever be interested in or receive any benefit from the profits or emoluments of any contract, job, work, or service for the County. No such officer or employee shall accept any service or thing of value, directly or indirectly, from any person, firm or corporation having dealings with the County, upon more favorable terms than those granted to the public generally, nor shall he receive, directly or indirectly, any part of any fee, commission or other compensation paid or payable by the County, or by any person in connection with any dealings with the County, or by any person in connection with any dealings with or proceedings before any branch, office, department, board, commission or other agency of the County. No such officer or employee shall directly or indirectly be the broker or agent who procures or receives any compensation in connection with the procurement of any type of bonds for County officers, employees or persons or firms doing business with the County. No such officer or employee shall solicit or accept any compensation or gratuity in the form of money or otherwise for any act or omission in the course of his public work; provided, however, that the head of any department or board of the County may permit an employee to receive a reward publicly offered and paid for, for the accomplishment of a particular task.

(b) **Rules of construction; exceptions by Council.** The provisions of this Section shall be broadly construed and strictly enforced for the purpose of preventing officers and employees from securing any pecuniary advantages, however indirect, from their public associations, other than their compensation provided by law.

In order, however, to guard against injustice, the Council may, by resolution, specifically authorize any County officer or employee to own stock in any corporation or to maintain a business in connection with any person, firm or corporation dealing with the County, if, on full public disclosure of all pertinent facts to the County Council by such officer or employee, the Council shall determine that such stock ownership or connection does not violate the public interest.

The County Council may, by ordinance, delegate to the Howard County Ethics Commission the power to make such determinations and to authorize the ownership or connection. Any ordinance which delegates this power shall provide for procedures including a public hearing, and shall establish criteria for determining when the ownership or connection does not violate the public interest.

(c) **Penalties.** Any officer or employee of the County who willfully violates any of the provisions of this Section shall forfeit his office. If any person shall offer, pay, refund or rebate any part of any fee, commission, or other form of compensation to any officer or employee of the County in connection with any County business or proceeding, he shall, on conviction, be punishable by imprisonment for not less than one or more than six months or a fine of not less than \$100.00 or more than \$1,000.00, or both. Any contract made in violation of this Section may be declared void by the Executive or by resolution of the Council. The penalties in this Section shall be in addition to all other penalties provided by law.

Code Section 4.119. Ethics and Fair Employment Practices.

(a) **Conflict of Interest.** Bidders, vendors, purchasers and county employees involved in the purchasing process shall be governed by the provisions of the Howard County Charter and Howard County law regarding conflict of interest. No vendor shall offer a gratuity to an official or employee of the county. No official or employee shall accept or solicit a gratuity.

(b) **Discouragement of Uniform Bidding.**

(1) It is the policy of the county to discourage uniform bidding by every possible means and to endeavor to obtain full and open competition on all purchases and sales.

(2) No bidder may be a party with other bidders to an agreement to bid a fixed or uniform price.

(3) No person may disclose to another bidder, nor may a bidder acquire, prior to the opening of bids, the terms and conditions of a bid submitted by a competitor.

(c) **Fair Employment Practices**

(1) Bidders, vendors and purchasers may not engage in unlawful employment practices as set forth in Subtitle 2 "human Rights" of Title 12 of the Howard County Code Section 14 of Article 49B of the Annotated Code of Maryland or Sections 703 and 704 of Title VII of the Civil Rights Act of 1964 as amended. Should any bidders, vendors or purchasers engage in such unlawful employment practices, they shall be subject to being declared irresponsible or being debarred pursuant to the provisions of this subtitle.

(2) The Howard County Office of Human Rights shall notify the county purchasing agent when any bidder is found, by a court of competent jurisdiction, to have engaged in any high unlawful employment practices.

(3) If any bidder has been declared to be an irresponsible bidder for having engaged in an unlawful employment practice and has been debarred from bidding pursuant to this subtitle, the Howard County Office of Human Rights shall review the employment practices of such bidder after the period of debarment has expired to determine if violations have been corrected and shall, within 30 days, file a report with the county purchasing agent informing the agent of such corrections before such bidder can be declared to be a responsible bidder by the County Purchasing agent.

(4) Payment of subcontractors. All contractors shall certify in writing that timely payments have been made to all subcontractors supplying labor and materials in accordance with the contractual arrangements made between the contractor and the subcontractors. No contractor will be paid a second or subsequent progress payment or final payment until such written certification is presented to the county purchasing agent.

Code Section 22.204. - Prohibited Conduct and Interests.

(a) **Participation Prohibitions.**

- (1) Except as permitted by Commission regulation or opinion, an official or employee may not participate in:
- (i) Except in the exercise of an administrative or ministerial duty that does not affect the disposition or decision of the matter, any matter in which, to the knowledge of the official or employee, the official or employee or a qualified relative of the official or employee has an interest.
 - (ii) Except in the exercise of an administrative or ministerial duty that does not affect the disposition or decision with respect to the matter, any matter in which any of the following is a party:
 - a. A business entity in which the official or employee has a direct financial interest of which the official or employee may reasonably be expected to know;
 - b. A business entity for which the official, employee, or a qualified relative of the official or employee is an officer, director, trustee, partner, or employee;
 - c. A business entity with which the official or employee or, to the knowledge of the official or employee, a qualified relative is negotiating or has any arrangement concerning prospective employment;
 - d. If the contract reasonably could be expected to result in a conflict between the private interests of the official or employee and the official duties of the official or employee, a business entity that is a party to an existing contract with the official or employee, or which, to the knowledge of the official or employee, is a party to a contract with a qualified relative;
 - e. An entity, doing business with the County, in which a direct financial interest is owned by another entity in which the official or employee has a direct financial interest, if the official or employee may be reasonably expected to know of both direct financial interests; or
 - f. A business entity that:
 - 1. The official or employee knows is a creditor or obligee of the official or employee or a qualified relative of the official or employee with respect to a thing of economic value; and
 - 2. As a creditor or obligee, is in a position to directly and substantially affect the interest of the official or employee or a qualified relative of the official or employee.
- (2) A person who is disqualified from participating under paragraph 1. of this subsection shall disclose the nature and circumstances of the conflict and may participate or act if:
- (i) The disqualification leaves a body with less than a quorum capable of acting;
 - (ii) The disqualified official or employee is required by law to act; or
 - (iii) The disqualified official or employee is the only person authorized to act.
- (3) The prohibitions of paragraph 1 of this subsection do not apply if participation is allowed by regulation or opinion of the Commission.

(b) **Employment and Financial Interest Restrictions.**

- (1) Except as permitted by regulation of the commission when the interest is disclosed or when the employment does not create a conflict of interest or appearance of conflict, an official or employee may not:
- (i) Be employed by or have a financial interest in any entity:
 - a. Subject to the authority of the official or employee or the County agency, board, commission with which the official or employee is affiliated; or
 - b. That is negotiating or has entered a contract with the agency, board, or commission with which the official or employee is affiliated; or
 - (ii) Hold any other employment relationship that would impair the impartiality or independence of judgment of the official or employee.
- (2) The prohibitions of paragraph (1) of this subsection do not apply to:
- (i) An official or employee who is appointed to a regulatory or licensing authority pursuant to a statutory requirement that persons subject to the jurisdiction of the authority be represented in appointments to the authority;
 - (ii) Subject to other provisions of law, a member of a board or commission in regard to a financial interest or employment held at the time of appointment, provided the financial interest or employment is publicly disclosed to the appointing authority and the Commission;
 - (iii) An official or employee whose duties are ministerial, if the private employment or financial interest does not create a conflict of interest or the appearance of a conflict of interest, as permitted and in accordance with regulations adopted by the Commission; or
 - (iv) Employment or financial interests allowed by regulation of the Commission if the employment does not create a conflict of interest or the appearance of a conflict of interest or the financial interest is disclosed.

(c) **Post-Employment Limitations and Restrictions.**

- (1) A former official or employee may not assist or represent any party other than the County for compensation in a case, contract, or other specific matter involving the County if that matter is one in which the former official or employee significantly participated as an official or employee.

(2) For a year after the former member leaves office, a former member of the County Council may not assist or represent another party for compensation in a matter that is the subject of legislative action.

(d) **Contingent Compensation.** Except in a judicial or quasi-judicial proceeding, an official or employee may not assist or represent a party for contingent compensation in any matter before or involving the County.

(e) **Use of Prestige of Office.**

(1) An official or employee may not intentionally use the prestige of office or public position for the private gain of that official or employee or the private gain of another.

(2) This subsection does not prohibit the performance of usual and customary constituent services by an elected official without additional compensation.

(f) **Solicitation and Acceptance of Gifts.**

(1) An official or employee may not solicit any gift.

(2) An official or employee may not directly solicit or facilitate the solicitation of a gift, on behalf of another person, from an individual regulated lobbyist.

(3) An official or employee may not knowingly accept a gift, directly or indirectly, from a person that the official or employee knows or has the reason to know:

- (i) Is doing business with or seeking to do business with the County office, agency, board or commission with which the official or employee is affiliated;
- (ii) Has financial interests that may be substantially and materially affected, in a manner distinguishable from the public generally, by the performance or nonperformance of the official duties of the official or employee;
- (iii) Is engaged in an activity regulated or controlled by the official's or employee's governmental unit; or
- (iv) Is a lobbyist with respect to matters within the jurisdiction of the official or employee.

(4) (i) Subsection (4)(ii) does not apply to a gift:
a. That would tend to impair the impartiality and the independence of judgment of the official or employee receiving the gift;

b. Of significant value that would give the appearance of impairing the impartiality and independence of judgment of the official or employee; or
c. Of significant value that the recipient official or employee believes or has reason to believe is designed to impair the impartiality and independence of judgment of the official or employee.

(ii) Notwithstanding paragraph (3) of this subsection, an official or employee may accept the following:
a. Meals and beverages consumed in the presence of the donor or sponsoring entity;
b. Ceremonial gifts or awards that have insignificant monetary value;
c. Unsolicited gifts of nominal value that do not exceed \$20.00 in cost or trivial items of informational value;

d. Reasonable expenses for food, travel, lodging, and scheduled entertainment of the official or the employee at a meeting which is given in return for the participation of the official or employee in a panel or speaking engagement at the meeting;

e. Gifts of tickets or free admission extended to an elected official to attend a charitable, cultural, or political event, if the purpose of this gift or admission is a courtesy or ceremony extended to the elected official's office;

f. A specific gift or class of gifts that the Commission exempts from the operation of this subsection upon a finding, in writing, that acceptance of the gift or class of gifts would not be detrimental to the impartial conduct of the business of the County and that the gift is purely personal and private in nature;

g. Gifts from a person related to the official or employee by blood or marriage, or any other individual who is a member of the household of the official or employee; or

h. Honoraria for speaking to or participating in a meeting, provided that the offering of the honorarium is not related, in any way, to the official's or employee's official position.

(g) **Disclosure of Confidential Information.** Other than in the discharge of official duties, an official or employee may not disclose or use confidential information, that the official or employee acquired by reason of the official's or employee's public position and that is not available to the public, for the economic benefit of the official or employee or that of another person.

(h) **Participation in Procurement.**

(1) An individual or a person that employs an individual who assists a County, agency or unit in the drafting of specifications, an invitation for bids, or a request for proposals for a procurement, may not submit a bid or proposal for that procurement, or assist or represent another person, directly or indirectly, who is submitting a bid or proposal for the procurement.

(2) The Commission may establish exemptions from the requirements of this section for providing descriptive literature, sole source procurements, and written comments solicited by the procuring agency.

BID SUBMITTALS

HOWARD COUNTY, MARYLAND
BID SUBMITAL CHECKLIST
ON-CALL SEWER REHABILITATION CONSTRUCTION (OCSRC)
CAPITAL PROJECT NO. S6232

NAME OF CONTRACTOR: _____
(Please Print or Type)

Is the company a certified Minority-, Women-, or Disabled-Owned Business Enterprise?
 YES NO

If yes, indicate the type of minority ownership:

- African American Asian American Disabled Eskimo
- Female Hispanic Native American

If yes, indicate the certification(s) held:
 Howard County Government MD Dept. of Transportation City of Baltimore Other

Certification Number(s) and Expiration Date(s): _____

This package contains the following items:

- _____ BID FORMS (Including Total Amount of Bid form, Addendum Identification and Acknowledgment form and Schedule of Prices)
- _____ RAIN FOREST PROTECTION ACT OF 1991 CERTIFICATION
- _____ CORPORATION INFORMATION SHEET
- _____ QUALIFICATIONS QUESTIONNAIRE (Must be completed by all bidders)
- _____ AFFIDAVIT
- _____ FOREIGN SERVICES DISCLOSURE FORM
- _____ EQUAL BUSINESS OPPORTUNITY (EBO) SCHEDULE OF PARTICIPATION
- _____ WAGE RATE REQUIREMENTS FOR SERVICE CONTRACTS FORM
- _____ BID BOND OR CERTIFIED CHECK (Forms provided by the Bonding Agency)

THIS PACKAGE – SECTION F, MUST BE SUBMITTED IN DUPLICATE (1 ORIGINAL AND 1 COPY) TO THE OFFICE OF PURCHASING, GATEWAY BUILDING, 6751 COLUMBIA GATEWAY DRIVE, SUITE 501, COLUMBIA, MD 21046 BY:

MAY 3, 2017 PRIOR TO 11:00 A.M.

BIDDERS ARE REQUESTED TO SUBMIT THEIR BIDS IN A SEALED ENVELOPE PLAINLY MARKED TO INDICATE ITS CONTENTS OR IN AN ENVELOPE FURNISHED BY THE COUNTY AND TO ENTER THE PROJECT NAME, CAPITAL PROJECT NUMBER (CONTACT NUMBER IF APPLICABLE) AND BID OPENING TIME AND DATE ON THE ENVELOPE.

HOWARD COUNTY, MARYLAND

TOTAL AMOUNT OF BID FORM

**ON-CALL SEWER REHABILITATION CONSTRUCTION (OCSRC)
CAPITAL PROJECT NO. S6232**

The Bidder declares that the only person, firm or corporation or persons, firms, or corporations that has or have any interest in this proposal or in the contract or contracts proposed to be taken, is or are the undersigned; that this proposal is made without any connection, collusion, or agreement with any person, firm, or corporation making a proposal for the same work to bid a fixed or uniform price, that the attached specifications and form of contract therein referred to have been carefully examined and are understood; that as careful an examination has been made as is necessary to become informed as to the character and extent of the work required; and that it is proposed and agreed if the proposal is accepted to contract with the Howard County, Maryland, Department of Public Works, in the form of contract hereto attached to do the required work in the manner set forth in the specifications.

Made this _____ day of _____, 20____

(FIGURES) TOTAL AMOUNT OF BID

NAME OF CONTRACTOR _____

ADDRESS _____

SIGNED _____

NAME OF COMPANY OFFICIAL (Print or Type) _____

TITLE _____

TELEPHONE _____

EMAIL ADDRESS _____

FAX _____

All proposed work shall be completed within the agreed upon calendar days from the date specified in the Notice to Proceed.

The amount of liquidated damages for this contract shall be \$500.00 per calendar day.

Accompanying this Proposal is a bid bond or certified check for 5% percent of the bid price payable to the "Director of Finance, Howard County", which is to be forfeited, as liquidated damages in the event that this Proposal is accepted and the above signed bidder shall refuse or neglect to execute the Contract and furnish the stipulated Bond under the conditions and time set forth in the Specifications.

HOWARD COUNTY, MARYLAND

ADDENDUM IDENTIFICATION AND ACKNOWLEDGMENT

**ON-CALL SEWER REHABILITATION CONSTRUCTION (OCSRC)
CAPITAL PROJECT NO. S6232**

Bidder shall identify by number, date and number of pages the following addenda and agree that the costs shown in the proposal reflect all changes made by addenda.

<u>NO.</u>	<u>Date</u>	<u>No. of Pages</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

NAME OF CONTRACTOR: _____

HOWARD COUNTY, MARYLAND

SCHEDULE OF PRICES

**ON-CALL SEWER REHABILITATION CONSTRUCTION (OCSRC)
 CAPITAL PROJECT NO. S6232**

NIGP CODE/PRODUCT CODE: 913-60 Construction Services, Heavy – Water Main, Sewer Systems & Service Line

NAME OF CONTRACTOR: _____

PART "A"- SANITARY SEWER REHABILITATION						
Item No.	Description	Estimated Quantity	Unit Price		Total Price	
			Dollars	Cents	Dollars	Cents
A-1	Mobilization	15				
A-2	6"-12" Sewer Main CCTV Inspection	50,000 L.F.				
A-3	14"-24" Sewer Main CCTV Inspection	50,000 L.F.				
A-4	27"-48" Sewer Main CCTV Inspection	2,500 L.F.				
A-5	6"-12" Heavy/Specialty Sewer Cleaning	15,000 L.F.				
A-6	14"-24" Heavy/Specialty Sewer Cleaning	5,000 L.F.				
A-7	27"-48" Heavy/Specialty Sewer Cleaning	5,000 L.F.				
A-8	Contingent Sewage Bypass Pumping 1.1-2.0 MGD	100 Day				
A-9	Contingent Sewage Bypass Pumping 2.1-5.0 MGD	100 Day				
A-10	6" CIPP Liner Installation Manhole to Manhole	5,000 L.F.				
A-11	8" CIPP Liner Installation Manhole to Manhole	25,000 L.F.				
A-12	10" CIPP Liner Installation Manhole to Manhole	15,000 L.F.				
A-13	12" CIPP Liner Installation Manhole to Manhole	10,000 L.F.				
A-14	14"-24" CIPP Liner Installation Manhole to Manhole	2,500 L.F.				

A-15	27"-48" CIPP Liner Installation Manhole to Manhole	500 L.F.				
A-16	6" UV-CIPP Liner Installation Manhole to Manhole	500 L.F.				
A-17	8" UV-CIPP Liner Installation Manhole to Manhole	500 L.F.				
A-18	10" UV-CIPP Liner Installation Manhole to Manhole	500 L.F.				
A-19	12" UV-CIPP Liner Installation Manhole to Manhole	500 L.F.				
A-20	14"-24" UV-CIPP Liner Installation Manhole to Manhole	500 L.F.				
A-21	27"-48" UV-CIPP Liner Installation Manhole to Manhole	500 L.F.				
A-22	Re-establish Connection Laterals	500 EACH				
A-23	6"-12" Sewer Main Contingent Trenchless Point Repair	125 EACH				
A-24	14"-24" Sewer Main Contingent Trenchless Point Repair	5 EACH				
A-25	27"-48" Sewer Main Contingent Trenchless Point Repair	5 EACH				

TOTAL FOR PART 'A' \$ _____

PART "B"- MANHOLE REHABILITATION

Item No.	Description	Estimated Quantity	Unit Price		Total Price	
			Dollars	Cents	Dollars	Cents
B-1	Manhole Television Inspection	2,500 V.F.				
B-2	Manhole Rehab - Leak Proof	2,500 V.F.				
B-3	Furnish and Install Manhole Steps, Complete In Place.	100 Each				

TOTAL FOR PART 'B' \$ _____

<u>PART "C"- LATERAL REHABILITATION</u>						
Item No.	Description	Estimated Quantity	Unit Price		Total Price	
			Dollars	Cents	Dollars	Cents
C-1	4"-6" Service Connection and Seal 5' into Lateral	1,000 Each				
C-2	4"-6" Service Connection and Seal over 5' into Lateral	2,500 L.F.				
C-3	CCTV and Cleaning of lateral	10,000 L.F.				
TOTAL FOR PART 'C' \$ _____						

<u>PART "D"- FIXED PRICE CONTINGENT ITEMS</u>				
By submitting a proposal, the Contractor agrees to provide the fixed price contingent items as described below and in the Special Provisions at the unit prices indicated. Fixed price contingent items may only be utilized if included in a project specific proposal by the Engineer with specified quantities and/or at the direction of the Engineer.				
Item No.	Description	Unit	Unit Price	
			Dollars	Cents
D-1	Class 1A excavation and refill with crusher run stone	C.Y.	60	00
D-2	Crusher run aggregate for maintenance of traffic.	Ton	35	00
D-3	Bituminous concrete for maintenance of traffic.	Ton	120	00
D-4	Mix no. 3 concrete for curbs, sidewalks and steps.	C.Y.	325	00
D-5	Mix no. 3 concrete for miscellaneous drainage structures.	C.Y.	475	00
D-6	Borrow excavation.	C.Y.	44	00
D-7	Class 3 excavation.	C.Y.	23	00
D-8	Select backfill.	C.Y.	47	00
D-9	Sheeting and shoring left-in-place by order of the engineer.	M.B.M	1,200	00
D-10	Calcium chloride (dust control).	Ton	575	00
D-11	Mix no. 1 concrete.	C.Y.	375	00
D-12	Test pit excavation			
	a. Non Paved Areas	C.Y.	85	00
	b. Paved – non state roads	C.Y.	156	00
	c. Paved – arterial and state roads	C.Y.	225	00
D-13	Patching existing pavement with bituminous concrete.	Ton	125	00
D-14	Patching existing pavement with Portland cement concrete.	C.Y.	250	00
D-15	Silt fence.	L.F.	4	00

HOWARD COUNTY, MARYLAND

RAIN FOREST PROTECTION ACT OF 1991 CERTIFICATION

(The provisions of this subtitle shall apply to any procurement for the purchase of wood products that is over \$2,000.
"Wood products" are those exposed wood areas that are visible to the eye.)

**ON-CALL SEWER REHABILITATION CONSTRUCTION (OCSRC)
CAPITAL PROJECT NO. S6232**

I/We _____,
(name of contractor)

Located _____
(address)

() _____, hereby certify that the supplies being offered in this
(phone number)

capital project bid comply with the Howard County Rain Forest Protection Act of 1991.

The Act prohibits the purchase, by Howard County, of certain tropical rain forest wood products which are exposed and visible to the eye.

Howard County shall not purchase any of the following tropical wood products unless the vendor shows that the tropical wood item or type has been harvested from a pre-existing plantation, managed to maintain environmental functions, including watershed stability and erosion control practices, sustained yield production, and positive impact on the well being of local communities.

Name	Name
Acapu	Lauan, Red
Afromosia	Lauan, White
Almon	Limba
Amaranth	Louro
Amazaque	Mahogany, African
Anigeria	Mahogany, American
Apitong	Makore
Balsa	Movingui
Banak	Paduak, African
Bella Rosa	Paduak, Angola
Benge	Peroba
Boire	Purpleheart
Bubinga	Ramin
Cativo	Rosewood
Chenchen	Sapele
Concobolo	Sonora
Cordia	Tanguille
Ebony	Teak
Gaboon	Tiger Wood
Iroko	Wenge
Koa	Zebrawood
Koto	

WITNESS: _____

Signature

Name and Title of Signer

HOWARD COUNTY, MARYLAND
CORPORATION INFORMATION SHEET

1. CORPORATE NAME: _____
2. CORPORATE ADDRESS: _____

3. PRINCIPAL BUSINESS OFFICE ADDRESS: _____

TELEPHONE: _____ FAX: _____
4. NAME AND ADDRESS OF RESIDENT AGENT: _____
5. DATE OF INCORPORATION: _____ STATE OF INCORPORATION: _____
6. IF INCORPORATED IN ANOTHER STATE, IS CORPORATION REGISTERED AND QUALIFIED TO DO BUSINESS IN THE STATE OF MARYLAND? YES _____ NO _____
7. IS CORPORATION IN GOOD STANDING WITH THE STATE OF MARYLAND? YES _____ NO _____
8. IS THIS A CLOSE CORPORATION? YES _____ NO _____
9. MD STATE ASSESSMENT REGISTRATION NO.: _____
10. TAXPAYER IDENTIFICATION NUMBER: _____

Legal documents must be executed by the Corporate President or Vice President and the signature must be ATTESTED, not witnessed, by the Corporate Secretary or Assistant Secretary except in the case of a close corporation in which the signature may be witnessed. If someone other than the President or Vice President executes, the documents must be accompanied by a copy of Corporate By-Laws or Corporate Resolution indicating authority of individual to bind corporation.

11. NAME AND ADDRESSES OF ALL CURRENT OFFICERS (ATTACH INDIVIDUAL PAGES, IF NECESSARY):
NAME & TITLE: _____
ADDRESS: _____
NAME & TITLE: _____
ADDRESS: _____
NAME & TITLE: _____
ADDRESS: _____
NAME & TITLE: _____
ADDRESS: _____
12. NAMES AND ADDRESSES OF ALL CURRENT DIRECTORS (ATTACH ADDITIONAL PAGES, IF NECESSARY):

(Authorized Signature) _____ (Date) _____

(Type or Print Name) _____ (Title) _____

HOWARD COUNTY, MARYLAND

QUALIFICATIONS QUESTIONNAIRE

**ON-CALL SEWER REHABILITATION CONSTRUCTION (OCSRC)
CAPITAL PROJECT NO. S6232**

Name of Contractor: _____ **Date:** _____

Address: _____

Telephone Number: _____

BIDDER'S/CONTRACTOR'S QUALIFICATIONS

1. Bidders shall have at least five (5) years of experience in cured in place pipe (CIPP) gravity sewer lining, lateral lining and manhole rehabilitation and shall be primarily engaged in CIPP sewer lining field. In addition, prospective bidders shall have successfully completed at least twenty-five (25) similar projects involving the same material, equal size, and comparable length. A minimum of 150,000 linear feet of sewer mains between 6 inches to 24 inches and a minimum of 5,000 liner feet of sewer mains between 27 inches to 48 inches of installation is required, using the proposed CIPP rehabilitation process. The lead personnel including the superintendent, the foreman and the lead crew personnel for CCTV inspection, resin wet-out, the CIPP liner installation, liner curing and the robotic service reconnections each must have a minimum of three (3) years of total experience. Personnel replaced by the contractor shall have similar verifiable experience as the personnel originally submitted for the project. Bidders shall document this experience on the pages that follow, and provide a detailed list of recently completed projects meeting the specified experience requirements. The experience of owner(s) may be imputed to a newly formed company/contractor provided the owner(s) has/have at least five (5) years of demonstrated experience of reliability and meets the criteria set forth herein.
2. The Qualifications Questionnaire shall be completed by all Bidders. Only the information contained in the Qualifications Questionnaire will be considered in evaluating the Bidder's qualifications. Attachments (unless specifically requested), company brochures or submittals in any other format will not be considered in evaluating the qualifications of the Bidder. Bidders may reproduce sections of the Qualifications Questionnaire form as needed to provide the required information necessary to adequately demonstrate their experience.
3. The County reserves the right to check references furnished and consider the responses received in determining award of this bid. The County will not contact Bidders for clarifications of illegible information, wrong names, wrong phone numbers, or wrong addresses provided by Bidders on the Qualifications Questionnaire. Incomplete submittals or unverifiable information may not be considered in the evaluation.
4. The County reserves the right to inspect the Bidders' equipment, request resumes or past work histories of key personnel or to interview key personnel to be assigned to this contract.
5. Contracts shall be awarded to the lowest responsive and responsible bidder meeting all the specifications. In accordance with Howard County Code Sec. 4.117 (a) (4), the quality of performance of previous contracts or services shall be considered in determining the lowest responsive and responsible bidder. The County reserves the right to reject any bid deemed not responsible or non-responsive.

1. **BIDDER'S CONSTRUCTION EXPERIENCE**, list most recent first.

(a) **Most Recent Work:**

Work for which Bidder was responsible:

Project Title and/or Other Identifying Number for the Work: _____

Location (Street Address, City/County, State): _____

Start Construction Date _____ End Construction Date: _____

Pipe material: _____

Pipe diameter: _____

Linear feet of pipe 6" – 24" diameter: _____

Linear feet of pipe 27" diameter and larger: _____

Bidder's total dollar amount for the Work described: _____

Bidder's Superintendent for the Work: _____

Bidder's Project Manager for the Work: _____

Agency or Firm for whom work was performed (the Owner):

Name: _____

Address: _____

Telephone Number: _____

Names of persons having supervisory responsibility within Agency or Firm for whom Work was performed: _____

Firm performing Engineering Inspection Services:

Name: _____

Address: _____

Telephone Number: _____

Names of persons having supervisory responsibility within firm performing Engineering Inspection Services: _____

Was the Work of the Bidder performed as a Subcontractor? _____ (yes), _____ (no)

If "yes" Bidder shall complete the following:

Name of Prime Contractor: _____

Address of Prime Contractor: _____

Telephone No. of Prime Contractor: _____

Names of persons having supervisory responsibility within the Prime Contractor's firm for whom the Work was performed: _____

Other pertinent information regarding this project:

1. **BIDDER'S CONSTRUCTION EXPERIENCE (continued)**, list most recent first.

(b) **Next Most Recent Work:**

Work for which Bidder was responsible:

Project Title and/or Other Identifying Number for the Work: _____

Location (Street Address, City/County, State): _____

Start Construction Date _____ End Construction Date: _____

Pipe material: _____

Pipe diameter: _____

Linear feet of pipe 6" – 24" diameter: _____

Linear feet of pipe 27" diameter and larger: _____

Bidder's total dollar amount for the Work described: _____

Bidder's Superintendent for the Work: _____

Bidder's Project Manager for the Work: _____

Agency or Firm for whom work was performed (the Owner):

Name: _____

Address: _____

Telephone Number: _____

Names of persons having supervisory responsibility within Agency or Firm for whom Work was performed: _____

Firm performing Engineering Inspection Services:

Name: _____

Address: _____

Telephone Number: _____

Names of persons having supervisory responsibility within firm performing Engineering Inspection Services: _____

Was the Work of the Bidder performed as a Subcontractor? _____ (yes), _____ (no)

If "yes" Bidder shall complete the following:

Name of Prime Contractor: _____

Address of Prime Contractor: _____

Telephone No. of Prime Contractor: _____

Names of persons having supervisory responsibility within the Prime Contractor's firm for whom the Work was performed: _____

Other pertinent information regarding this project:

1. **BIDDER'S CONSTRUCTION EXPERIENCE (continued)**, list most recent first.

(c) **Next Most Recent Work:**

Work for which Bidder was responsible:

Project Title and/or Other Identifying Number for the Work: _____

Location (Street Address, City/County, State): _____

Start Construction Date _____ End Construction Date: _____

Pipe material: _____

Pipe diameter: _____

Linear feet of pipe 6" – 24" diameter: _____

Linear feet of pipe 27" diameter and larger: _____

Bidder's total dollar amount for the Work described: _____

Bidder's Superintendent for the Work: _____

Bidder's Project Manager for the Work: _____

Agency or Firm for whom work was performed (the Owner):

Name: _____

Address: _____

Telephone Number: _____

Names of persons having supervisory responsibility within Agency or Firm for whom Work was performed: _____

Firm performing Engineering Inspection Services:

Name: _____

Address: _____

Telephone Number: _____

Names of persons having supervisory responsibility within firm performing Engineering Inspection Services: _____

Was the Work of the Bidder performed as a Subcontractor? _____ (yes), _____ (no)

If "yes" Bidder shall complete the following:

Name of Prime Contractor: _____

Address of Prime Contractor: _____

Telephone No. of Prime Contractor: _____

Names of persons having supervisory responsibility within the Prime Contractor's firm for whom the Work was performed: _____

Other pertinent information regarding this project:

1. **BIDDER'S CONSTRUCTION EXPERIENCE (continued)**, list most recent first.

(d) **Next Most Recent Work:**

Work for which Bidder was responsible:

Project Title and/or Other Identifying Number for the Work: _____

Location (Street Address, City/County, State): _____

Start Construction Date _____ End Construction Date: _____

Pipe material: _____

Pipe diameter: _____

Linear feet of pipe 6" – 24" diameter: _____

Linear feet of pipe 27" diameter and larger: _____

Bidder's total dollar amount for the Work described: _____

Bidder's Superintendent for the Work: _____

Bidder's Project Manager for the Work: _____

Agency or Firm for whom work was performed (the Owner):

Name: _____

Address: _____

Telephone Number: _____

Names of persons having supervisory responsibility within Agency or Firm for whom Work was performed: _____

Firm performing Engineering Inspection Services:

Name: _____

Address: _____

Telephone Number: _____

Names of persons having supervisory responsibility within firm performing Engineering Inspection Services: _____

Was the Work of the Bidder performed as a Subcontractor? _____ (yes), _____ (no)

If "yes" Bidder shall complete the following:

Name of Prime Contractor: _____

Address of Prime Contractor: _____

Telephone No. of Prime Contractor: _____

Names of persons having supervisory responsibility within the Prime Contractor's firm for whom the Work was performed: _____

Other pertinent information regarding this project:

1. **BIDDER'S CONSTRUCTION EXPERIENCE (continued)**, list most recent first.

(e) **Next Most Recent Work:**

Work for which Bidder was responsible:

Project Title and/or Other Identifying Number for the Work: _____

Location (Street Address, City/County, State): _____

Start Construction Date _____ End Construction Date: _____

Pipe material: _____

Pipe diameter: _____

Linear feet of pipe 6" – 24" diameter: _____

Linear feet of pipe 27" diameter and larger: _____

Bidder's total dollar amount for the Work described: _____

Bidder's Superintendent for the Work: _____

Bidder's Project Manager for the Work: _____

Agency or Firm for whom work was performed (the Owner):

Name: _____

Address: _____

Telephone Number: _____

Names of persons having supervisory responsibility within Agency or Firm for whom Work was performed: _____

Firm performing Engineering Inspection Services:

Name: _____

Address: _____

Telephone Number: _____

Names of persons having supervisory responsibility within firm performing Engineering Inspection Services: _____

Was the Work of the Bidder performed as a Subcontractor? _____ (yes), _____ (no)

If "yes" Bidder shall complete the following:

Name of Prime Contractor: _____

Address of Prime Contractor: _____

Telephone No. of Prime Contractor: _____

Names of persons having supervisory responsibility within the Prime Contractor's firm for whom the Work was performed: _____

Other pertinent information regarding this project:

HOWARD COUNTY, MARYLAND

AFFIDAVIT

(Must be completed, signed, and submitted with the bid.)

CAPITAL PROJECT NO. S6232

Contractor _____

Address _____

I, _____, the undersigned, _____ of the above named
(Print Signer's Name) (Print Office Held)

Contractor does declare and affirm this _____ day of _____, _____, that I hold the aforementioned office
(Month) (Year)
in the above named Contractor and I affirm the following:

AFFIDAVIT I

The Contractor, his Agent, servants and/or employees, have not in any way colluded with anyone for and on behalf of the Contractor or themselves, to obtain information that would give the Contractor an unfair advantage over others, nor have they colluded with anyone for and on behalf of the Contractor, or themselves, to gain any favoritism in the award of the contract herein.

AFFIDAVIT II

No officer or employee of Howard County, whether elected or appointed, has in any manner whatsoever, any interest in or has received prior hereto or will receive subsequent hereto any benefit, monetary or material, or consideration from the profits or emoluments of this contract, job, work or service for the County, and that no officer or employee has accepted or received or will receive in the future a service or thing of value, directly or indirectly, upon more favorable terms than those granted to the public generally, nor has any such officer or employee of the County received or will receive, directly or indirectly, any part of any fee, commission or other compensation paid or payable to the County in connection with this contract, job, work, or service for the County, excepting, however, the receipt of dividends on corporation stock.

AFFIDAVIT III

Neither I, nor the Contractor, nor any officer, director, or partners, or any of its employees who are directly involved in obtaining contracts with Howard County have been convicted of bribery, attempted bribery, or conspiracy to bribe under the laws of any state, or of the federal government for acts of omissions committed after July 1, 1977.

AFFIDAVIT IV

Neither I, nor the Contractor, nor any of our agents, partners, or employees who are directly involved in obtaining contracts with Howard County have been convicted within the past 12 months of discrimination against any employee or applicant for employment, nor have we engaged in unlawful employment practices as set forth in Section 12.200 of the Howard County Code, or of Section 16 of Article 49B of the Annotated Code of Maryland or, of Sections 703 and 704 of Title VII of the Civil Rights Act of 1964.

AFFIDAVIT V

The Contractor:

- i. Is not currently identified on the list created by the Maryland State Board of Public Works as a person engaging in investment activities in Iran as described in Section 17-702 of the *Maryland State Finance and Procurement Article* ; or
- ii. Is not currently engaging in investment activities in Iran as described in Section 17-702 of the *Maryland State Finance and Procurement Article*.

If the person is unable to make the certification, it will provide the County, a detailed description of the Contractor's investment activities in Iran.

I do solemnly declare and affirm under the penalties of perjury that the contents of the foregoing affidavits are true and correct to the best of my knowledge, information and belief.

Signature

Printed Name

Title

HOWARD COUNTY, MARYLAND

FOREIGN SERVICES DISCLOSURE FORM
FOR
CONSTRUCTION-RELATED SERVICES, ARCHITECTURAL SERVICES,
ENGINEERING SERVICES AND ENERGY PERFORMANCE CONTRACT SERVICES
OF \$2 MILLION OR MORE

Section 12-111 of the Maryland State Finance and Procurement Article requires bidders to make certain disclosures regarding plans, at the time the bid is submitted, to perform any services under the contract outside the United States. This provision applies to: (1) construction-related services; (2) architectural services; (3) engineering services; or (4) energy performance contract services with an estimated value of \$2 million or more. The provision requires bidders to disclose:

1. Whether the bidder or any contractor that the bidder will subcontract with to perform the contract has plans, at the time the bid is submitted, to perform any services required under the contract outside the United States; and
2. If the services under the contract are anticipated to be performed outside the United States;
 - i. Where the services will be performed; and
 - ii. The reasons why it is necessary or advantageous to perform the services outside the United States.

Indicate below whether or not the bidder has information to disclose.

- The bidder has **no** plans, at the time the bid is submitted, to perform any services under the contract outside the United States.
- The bidder has plans, at the time the bid is submitted, to perform services under the contract outside the United States.
- i. The services will be performed in the following location: _____
 - ii. It is necessary or advantageous to perform the services outside the United States for the following reason(s): _____

The contents of the disclosure form are true and correct to the best of my knowledge, information and belief.

Company Name (Bidder)

Signature

Date

Printed Name

Title

Est. 09/25/2013

EQUAL BUSINESS OPPORTUNITY PARTICIPATION

NOTICE TO PRIME CONTRACTORS
10% SUBCONTRACTING GOAL ON CONTRACTS
VALUED AT \$50,000 OR MORE

Howard County Code Section 4.122 established an Equal Business Opportunity program to foster overall equity and fairness to all citizens in relation to business enterprises conducting business with the County.

If a contract is \$50,000 or more, the Prime Contractor shall make a good faith effort to comply with the Howard County Equal Business Opportunity (EBO) program's 10% subcontracting goal. The Prime Contractor shall make a good faith effort to obtain minority subcontractor participation even if the Prime Contractor has the capability to complete the work with its own workforce. This is also applicable to Prime Contractors that are minority-owned firms. The percentage requirement may vary. Prime Contractors should submit the following completed *Equal Business Opportunity Subcontractor Participation Form* with the bid. Identify subcontractors prior to submitting the proposal. After contract award, changes in subcontractors require the written approval of the EBO Coordinator.

Possible areas of obtaining subcontracting participation include, but are not limited to, flagging services, hauling, copying and printing, and the purchase of materials used in performing the contract. Contractors may use minority, women or disabled business enterprises certified by Howard County, Maryland; the Maryland Department of Transportation; the City of Baltimore, Maryland; or another certifying entity in order to satisfy the 10% subcontracting goal. The website addresses for lists of minority businesses are:

Howard County - Equal Business Opportunity List of Firms A-Z

http://www.mdot.state.md.us/MBE_Program/index.html

<http://cityservices.baltimorecity.gov/mwboo>

Contractors should submit a completed *Equal Business Opportunity Subcontractor Participation Form* with the bid identifying each certified EBO firm they intend to use on the contract. However, if the EBO Subcontractor Participation Form is not submitted with the bid, the County may request EBO subcontractor participation of the successful contractor.

Contractors failing to achieve the Equal Business Opportunity Program goal following a good faith effort to obtain participation must complete the *Equal Business Opportunity Program Request for Subcontracting Waiver* and provide documentation of its good faith attempts to obtain EBO participation. The County will determine if the efforts made satisfy a good faith attempt. A waiver will only be considered in rare contracts after a determination that the Contractor has made a good faith effort and thoroughly documented the efforts. Contractors should submit the *Equal Business Opportunity Program Request for Subcontracting Waiver* with the bid. However, if the request for waiver form is not submitted with the bid, the County may obtain the request for waiver of the successful contractor.

If the County exercises its option to renew the contract, it is expected that the EBO subcontracting goal will be met for each subsequent contract year when the contract amount is \$50,000.00 or more. Questions relating to the EBO program shall be directed to the EBO Coordinator 410-313-6370.

PRIME CONTRACTORS' COMPLIANCE OF EBO SUBCONTRACTOR PARTICIPATION

Prime Contractors that are awarded County contracts shall maintain adequate records of EBO participation on County contracts. The County may require that prime contractors report whether or not they met the proposed EBO subcontracting goal, so that the County can track compliance of EBO participation on County contracts.

HOWARD COUNTY, MARYLAND
EQUAL BUSINESS OPPORTUNITY
REQUEST FOR SUBCONTRACTING WAIVER

NAME OF CONTRACTOR: _____

TITLE: _____

SOLICITATION NUMBER: _____

I do hereby request that an exception be granted to the requirement that a minimum of percent of the total value of this contract be placed with MBE/WBE/DBE firms.

In connection with the above captioned project, and this request, I hereby certify that I am the _____ (TITLE)

and duly authorized representative of _____ (COMPANY NAME)

at _____ (ADDRESS)

I further certify that I have enclosed a Schedule of Participation by MBE/WBE/DBE firms, which reflects the percentage and dollar value of MBE/WBE/DBE participation, which my company expects to achieve for this contract. That percentage is _____ and the dollar value is \$ _____.

Therefore, the Request for Exception is for _____ percentage and \$ _____ dollar value.

To support this Request for Exception, I include the following information as attachments, which I certify to be true to the best of my knowledge, information and belief (Include the following. Use as many pages as necessary):

1. A statement of the efforts made by your company to contact and negotiate with MBE/WBE/DBE firms, including the names, addresses, and telephone numbers of MBE/WBE/DBE firms contacted and a description of the information provided to MBE/WBE/DBE firms regarding the plans and specifications for portions of the work to be performed.
2. A statement of the efforts made by your company to select portions of the work proposed to be performed by MBE/WBE/DBE firms in order to increase the likelihood of achieving the stated goal.
3. For each MBE/WBE/DBE firm which placed a bid which your company considers to be unacceptable, submit a statement which explains the basis for your conclusion that the MBE/WBE/DBE firm is unacceptable.

(SIGNATURE)

(DATE)

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SECTION F

INFORMATION ON HOWARD COUNTY, MARYLAND'S LIVING WAGE REQUIREMENT

Basics of the Howard County Living Wage Legislation

In 2007, the Howard County Council passed legislation requiring a minimum "living wage" for employees of certain contractors and subcontractors of Howard County. A Contractor that is defined as a "Covered Employer" under Howard County Code Section 4.122A shall pay each employee an hourly rate sufficient to at least equal 125% of the federal poverty guidelines for a family of four individuals calculated on the basis of a 40-hour work week for 52 weeks.

Howard County Code Sec. 4.122A applies to service contracts estimated to be over \$100,000.00 per year. The code does not apply to commodities contracts, contractors who employ fewer than 5 employees during the contract term, public entities, non-profit organizations, or contracts awarded under sole source, emergency, or expedited procedures. Other contractors may also be exempt; see the complete list of exemptions in Section 1 on the front of this form.

The living wage requirements do not apply to an employee:

- who performs no measurable work related to any contract with the County
- who participates in a government-operated or government-sponsored program that restricts the earnings of or wages paid to employees to a level below the wage required under the law
- who participates for not longer than 120 days in a calendar year in a government-operated or government-sponsored summer youth employment program
- for whom a different wage rate is expressly set in a collective bargaining agreement, or
- for whom a higher wage is required by a federal, state, or County law.

This form serves as written certification to the County of your firm's intent to comply with the County's wage requirements during this term and any subsequent renewals. A Covered Employer shall not subdivide a contract; pay an employee through a third party; or treat an employee as a subcontractor or independent Contractor to avoid the imposition of any requirement under this law. Failure to comply with this requirement at any time during the initial term and subsequent renewals may be sufficient cause for termination for default. A violation of this law is a Class A civil offense; in addition to a fine, the County may suspend or debar the violator under Howard County Code Sec. 4.117.

Current Living Wage Rate in Howard County

As of January 31, 2017, the Living Wage Rate is **\$14.78 per hour**.

How the Living Wage Rate is Calculated

The Howard County Living Wage Rate is calculated by taking 125% of the Federal Poverty Guideline for a family of 4, then using this amount to determine the hourly rate based on 40 hours/week. For example, on January 31, 2017, the Federal HHS Poverty Guideline was published as \$24,300 for a family of 4 (see www.aspe.hhs.gov/poverty).

$$125\% \text{ of } \$24,600 = \$30,750.00 \quad \$30,750.00 \div 52 \text{ weeks} \div 40 \text{ hrs/week} = \mathbf{\$14.78 \text{ per hour}}$$

This hourly rate must be paid to employees (full-time or part-time) during the time the employees actually provide services to the County. The current Living Wage remains in effect until new federal poverty guidelines are published, which is usually the following January. If there is a change, the Office of Purchasing will attempt to notify all current contractors via email using the email address provided on this form. It is the contractor's responsibility to ascertain the current rate.

Since the rate is subject to change annually, you must ensure that your bid pricing is sufficient to cover the cost of any increases during the term of the contract, including subsequent renewals. All prices shall take the current wage rate, and subsequent increases in the wage rate, if any, into account and there shall be no unit price adjustment for future wage rate increases during the initial term of this agreement and any subsequent renewals thereof. Future wage rate increases are hereby defined as any new rates approved by the County that take effect after and supersede the rate shown in this solicitation.

If you have questions about the Living Wage Requirement or how to complete this form, please contact the Office of Purchasing at purchasing@howardcountymd.gov or 410-313-6370.

**Howard County, Maryland Wage Rate Requirements for Service Contracts
 Exemption Status Subtitle 1, Howard County Code Section 4.122A(b)(2)**

Prime Contr.	Sub-Contr.	Section 1: Exemptions	Check all that apply, then continue to Section 2. If none of these statements apply to your company or the Subcontractor, check the last box in this section and continue to Section 2.
<input type="checkbox"/>	<input type="checkbox"/>	Contractor or Subcontractor employs fewer than 5 employees at any time during the contract term.	
<input type="checkbox"/>	<input type="checkbox"/>	Contractor or Subcontractor received less than \$100,000 from the County in the most recent 12-month period prior to the start date, and will be entitled to receive less than \$100,000 from the County within the next 12-month period.	
<input type="checkbox"/>	<input type="checkbox"/>	Contractor or Subcontractor is a nonprofit organization that has qualified for an exemption from federal income taxes under Section 501(c)(3) of the Internal Revenue Code.	
<input type="checkbox"/>	<input type="checkbox"/>	Contractor or Subcontractor is expressly precluded from complying with Howard County Code Sec. 4.122A by the terms of any federal, state, or County law, federal or state contract or grant, and the contract falls within that preclusion.	
<input type="checkbox"/>	<input type="checkbox"/>	Contractor or Subcontractor is a public entity.	
<input type="checkbox"/>	<input type="checkbox"/>	Contractor or Subcontractor participates in a contract awarded under Howard County Code Secs. 4.110 (Sole Source), 4.111 (Emergency), or 4.112 (Expedited).	
<input type="checkbox"/>	<input type="checkbox"/>	Contractor or Subcontractor is a regulated public utility.	
<input type="checkbox"/>	<input type="checkbox"/>	Contract was awarded under a cooperative procurement with another government or organization of governments.	

Check here if none of the above statements are applicable to your company or to the Subcontractor, continue to Section 2.

Section 2: Certifications

- If you checked any exemptions in Section 1, skip this section and continue to Section 3.
- If you did not check any exemptions in Section 1, check each box in Section 2 that applies to your company, then complete Section 3 below.

I do hereby certify that I have read and understand the provisions of Section 4.122A of the Howard County Code, that I am an authorized representative of the Contractor named below, and that:

- As a "covered employer," the Contractor and all Subcontractors will comply with the County's Wage Rate Requirements for Service Contracts (Howard County Code Sec. 4.122A) and will pay all employees not exempt under the wage requirements, and who perform direct measurable work for the County, the applicable wage requirements at the time the work is performed. The Contractor will keep the records necessary to show compliance and will submit such records to the Purchasing Agent on request of the Purchasing Agent; and will publicize the requirements of this law to any employees who may be covered by the law. The Contractor's proposed pricing is sufficient to meet the current living wage rate requirements during the initial term of the agreement and any increases applicable to subsequent renewals.
- If health insurance is provided to employees**, the per employee hourly cost of the premium for health insurance to an employee who provides services to the County that appears in the bid or proposal is correct.

Section 3: Contact Information

Provide your contact information in the space below, then sign and date this form and submit it with your bid.

Contractor Name _____	Vendor Federal ID Number _____
Address _____	Phone Number _____
_____	Email Address _____
Authorized Signature _____	Date _____
Print Name of Signatory _____	Title of Signatory _____

Office of Purchasing Use Only	Contract Title: On-Call Sewer Rehabilitation Construction (OCSRC)		Buyer's Initials: RAB
	Contract No:	Renewal No. N/A	
	Capital Project No: S6232	Contract Term:	

