ANNE ARUNDEL COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

LARGE DIAMETER SEWER RELINING III

Project Number X738800
Contract Number X7388168

PROJECT MANUAL

Bureau of Engineering
MAY 2013
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NOTICE TO CONTRACTORS
Bid No.: X7388168
Project No.: X738800

Sealed bids, addressed to Anne Arundel County, Bid No. X7388168, for Large Diameter Sewer Relining III for the Department of Public Works will be received until 1:30 P.M. local time, Tuesday, July 2, 2013, at the Office of the Purchasing Agent, 3rd Floor, Heritage Office Complex, 2660 Riva Road, Annapolis, Maryland 21401, after which they will be publicly opened and read in the Patuxent Conference Room, located on the same floor.

The Work includes lining approximately 2,060 lf of 18” and 24” sewer main in Deale and manhole rehabilitation in Deale and Pasadena.

To all contractors, Anne Arundel County Purchasing Office now has bid results for Capital Construction Projects as well as Notice to Contractors on the Web Page. Entering http://www.aacounty.org/CentServ/Purchasing/index.cfm can access it.

On or after June 3, 2013, Plans and Specifications may be downloaded from the Anne Arundel County Purchasing website listed above. Plans will only be distributed via the web site.

This Contract will be constructed under the provisions of the Anne Arundel County Government January 2001 "Standard Details and Specifications for Construction” and any subsequent revisions thereto.

The cost range for the Project is: $500,000 to $1,000,000.

EQUAL OPPORTUNITY

It is the policy of Anne Arundel County, Maryland, to ensure equal employment opportunity for all persons, and to ensure that minority and women-owned business enterprises have the maximum opportunity to participate in the performance of all county contracts for supplies and services.

NON-DISCRIMINATION IN EMPLOYMENT

THE CONTRACTOR OR ANY SUBCONTRACTOR MAY NOT DISCRIMINATE IN ITS EMPLOYMENT PRACTICES AGAINST ANY EMPLOYEE OR APPLICANT FOR EMPLOYMENT BECAUSE OF RACE, COLOR, RELIGION, SEX, NATIONAL ORIGIN, ANCESTRY, HANDICAP, AGE OR MARITAL STATUS.

On June 18, 2013 at 9:00 am local time, a Pre-Bid conference will be held at the Department of Public Works, Heritage Office Complex, 2662 Riva Road, Annapolis, MD 21401. ALL VISITORS are asked to check in with the second floor receptionist for meeting location. The intent of this conference is to clarify the Plans and Specifications advertised and intended for bidding purposes. All potential bidders are requested to attend this conference. However, attendance is not a requirement of the Contract.

Questions regarding this Project should be directed to the Project Manager, Nancy Whitnall at 410-224-1265.

ANNE ARUNDEL COUNTY
William L. Schull, C.P.M., CPPB
Purchasing Agent
ANNE ARUNDEL COUNTY, MARYLAND

LARGE DIAMETER SEWER RELINING III
Proposal No.: X7388168
Project No.: X738800

INFORMATION TO BIDDERS

Sealed bids in duplicate, addressed to the Purchasing Agent, Anne Arundel County, Maryland, for construction of the Large Diameter Sewer Relining III contract as shown on drawings on file in the Office of the Department of Public Works, Heritage Office Complex, 2662 Riva Road, Annapolis, Maryland 21401 will be received in the Office of the Purchasing Agent, 3rd Floor, Heritage Office Complex, 2660 Riva Road, Annapolis, Maryland 21401, until July 2, 2013 at 1:30 p.m. Bids will be opened and read aloud in the Patuxent Room located on the same floor, immediately thereafter.

THE RIGHT IS HEREBY RESERVED TO REJECT ANY OR ALL BIDS AND TO WAIVE INFORMALITIES, AS THE INTERESTS OF THE COUNTY MAY REQUIRE.

All work to be performed under this Project shall be done under strict compliance with the Anne Arundel County Government January 2001 "Standard Details and Specifications for Construction" and any subsequent revisions thereto. Copies of Standard Specifications for Construction and Standard Details may be obtained by accessing the Anne Arundel County Department of Public Works website, http://www.aacounty.org/DPW/Engineering.cfm. The Standard Specifications and Details for Construction will only be available via the web site, and it shall be the duty of the Bidder to be familiar with these documents.

In addition, on May 18, 1990, the Commissioner of Labor and Industry adopted, through incorporation by reference to the Maryland Occupation Safety and Health Standards under COMAR 09.12.31 Maryland Occupational Safety and Health Act, amendments and revisions relating to Excavations as published in 54 Federal Register No. 209 (October 31, 1989) pages 45948-45991 and codified in Sub Part 29CFR 1926.650-1926.652 and Appendices A-F, together with certain amendments. The amendments are found at Maryland Register, Volume 17, issue 6 (Friday, March 23, 1990), pages 746-748. The Commissioner’s action is effective May 28, 1990. All holders of the Anne Arundel County Standard Specification and Details for Construction should familiarize themselves with these regulations and be guided accordingly.

Each bid must be enclosed in a sealed envelope marked “Proposal No. X7388168, Anne Arundel County, Maryland.” Bids made other than on the attached forms will not be considered. Changes in the phraseology of the bid, additions, or limiting provisions will render the bid irregular and may cause its rejection.

All bids shall include the following forms, each of which is to be submitted in duplicate:

1. Anti-collusion and non-bribery affidavit
(2) Proposal form

(3) Bid Bond (Bonding Companies must be licensed to do business in the State of Maryland and have complied with the law and the regulations of the U.S. Department of the Treasury and be approved as A Certified Companies or A Certified Reinsurer Companies.), and

(4) List of subcontractors and Equipment Suppliers.

Failure to complete and submit these forms shall render the proposal irregular and may be cause for rejection of the bid.

The Proposal form shall include the price, in figures, for each item of the proposed work and must be signed on behalf of the bidder. The bidder must examine the drawings, standard specifications, standard details and contract specifications carefully, and should make a personal examination of the location and nature of the proposed work. In case doubt shall arise as to the meaning or intent of anything shown on the drawings or comprised in the Standard Specifications, Standard Details and Contract Specifications, inquiry should be made of the project engineer, of the Department of Public Works before the bid is submitted. Submission of the bid shall indicate that the bidder thoroughly understands the drawings and the terms of the specifications. Bidders are especially directed to fill out the “total Price” column and total their bids, so that the results of the bidding, barring possible arithmetical errors, will be at once known. Any errors in computation will be corrected by the engineer when the bids are canvassed. The County reserves the right to accept alternatives in any order, to award on any bid item or combination of bid items. And to reject all bids if, in the sole determination of the County, it is advantageous to the County to do so. Any errors in computation or math will not invalidate the bid. In case of any discrepancy between the total figure and the correct total of the line items on the bid, the correct total of all line items shall govern and shall become the bid price.

Each bid must be accompanied by, and have sealed in the same envelope with the bid, a certified check or bid bond acceptable to the County for five percent (5%) of the amount of the bid, payable to Anne Arundel County, Maryland; and unless so accompanied, the bid will not be considered. The check or bid bond will be forfeited to the County as liquidated damages in case the contract, performance bond, and labor and materials bonds are not executed within ten (10) days after receiving the contract for execution.

The list of subcontractors and equipment suppliers to be submitted with the bid need only show certified small business, minority business and women business enterprises, which the bidder intends to use. In the event that the bidder cannot participate, the bidder shall include with the bid a notarized affidavit showing the evidence of the effort made to achieve this goal. Failure to submit the list of subcontractors and equipment suppliers delineating SBE, MBE, and WBE participation and/or the good faith documentation at the time the bid is submitted shall render the bid irregular and may be cause for rejection of the bid. The complete list of subcontractors and suppliers will be required from the apparent low bidder within (10) days of a request by the County.

The experience and equipment certification is to be submitted to the county by the apparent low bidder within ten (10) calendar days after request from the County.
Each bid must include a signed and notarized affidavit concerning sales and use tax. It is the bidder’s responsibility to contact the State of Maryland, Comptroller of the Treasury, Retail Sales Tax Division, to determine if any portion of the project is exempt from sales use tax.

THE APPARENT LOW BIDDER MAY NOT WITHDRAW ITS BID WITHIN NINETY (90) DAYS AFTER BID OPENING.

If the bidder, to whom an award is made, shall fail to execute the contract and bonds, the award may be annulled and the contract awarded to the second lowest responsible bidder, and such bidder shall fulfill every stipulation embraced herein, as if the bidder were the original party to whom the award was made; or the county may reject all of the bids, as its interests may require.

The County will hold the checks and/or bid bonds submitted by all bidders with their bids, until the execution and delivery of the contract and bonds whereupon they shall be returned.

As required by the Maryland Law, all foreign corporations doing business within the State of Maryland are required to be registered with the State Department of Assessments and Taxation as a condition precedent to the award of a contract.

If the contractor is a corporation, the contract shall be accompanied by a copy of the corporate resolution authorizing the officer of said corporation, whose name appears on the contract, to execute the contract. If a person other than an officer is designated, it must be stated under oath that the person is the agent of the corporation and is duly authorized to act for an in behalf of the corporation.

The Bidder must perform seventy percent (70%) of the work with his own forces.

Bidders are further reminded of State Finance and Procurement Article, Section 17-106 Annotated Code of Maryland, which provides:

Before a contractor receives a progress or final payment under a contract covered by payment security, the contractor shall certify, in writing that, in accordance with contractual agreements, suppliers, and subcontractors:

1. Have been paid from the proceeds of previous progress payments; and

2. Will be paid in a timely manner from the proceeds of the progress or final payment currently due.

The contractor shall make available, at anytime to the County, the contractor’s records for the purpose of auditing and/or verifying the contractor’s costs in connection with negotiated contracts, change order, or other amendments to the contract.

Executive Order 24

Pursuant to Executive Order 24, vendors are required to comply with all applicable laws and regulations relating to the employment of aliens. If a vendor fails to comply with applicable laws and regulations relating to employment of aliens, such failure shall constitute a material breach of the vendor’s contractual relationship with the County and shall be grounds for termination of the contractual relationship. By executing this Agreement, the Contractor certifies that it is aware of its obligations under
Executive Order 24 and that it complies with all applicable laws and regulations relating to the employment of aliens. Contractor shall include this clause in all subcontracts, making subcontractors subject to these requirements.

Non-Discrimination Clauses:

Contractor shall comply with Executive Order 11246 entitled “Equal Employment Opportunity” as amended by Executive Order 11375, and as supplemented in U.S. Department of Labor Regulations 41 CFR Part 60.

The Contractor agrees not to discriminate in any manner against any employee or applicant for employment because of race, creed, color, or national origin; and, is obligated to include a similar requirement in all subcontracts, except subcontracts for standard commercial supplies or raw materials. In addition, the contractor and all subcontractors shall agree to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of the non-discrimination clause.

Where the Contractor willfully fails to comply with the non-discrimination provisions, the County may, where the Contract is still executory in part, compel continued performance of the Contract, but the County shall be liable only for the reasonable value of services performed and materials supplied from the date that the breach of contract was discovered, and any sums previously paid by the County under the Contract shall be set off against the sums to become due as the Contract is performed.

If any subcontractor willfully fails to comply with the non-discrimination provisions, the Contractor may void the subcontract and shall be liable only for the reasonable value of the services performed and materials supplied to the date of the voiding of the subcontract.

As to all contracts for materials, supplies, maintenance, services or other procurements except building construction services, the vendor agrees not to discriminate in any manner against any employee or applicant for employment because of race, creed, color, national origin, or sex. Any Contract with the County requiring subcontracts shall include similar requirements in each subcontract. The Contractor further agrees to comply with all applicable federal, state, and local laws and executive orders relating to equal employment opportunity.

Equal Opportunity Clause:

It is the policy of Anne Arundel County, Maryland, to ensure Equal Employment Opportunity for all persons, and to ensure that Minority and Women-Owned Business Enterprises have the maximum opportunity to participate in the performance of all County Contracts for supplies and services.
ANNE ARUNDELB COUNTY, MARYLAND

Solicitation Check List

PROPOSAL NO.: X7388168
Project No.: X738800

________________________________________________________________

THIS CHECKLIST IS PROVIDED FOR YOUR CONVENIENCE

_______ Bid Response/Proposal shall be delivered to the County Purchasing Department no later
than the date and time shown in the Solicitation. Did you visit our website at
(http://www.aacounty.org/CentServ/Purchasing/index.cfm) for any addenda, which may
have been posted to our website or eMD Marketplace?

_______ Did an authorized company representative sign the Bid Response Form?

_______ Did an authorized company representative sign and notarize the Affidavit form(s)?

_______ Did you include the required signature authority documents, if required?

_______ If you are an entity (limited liability partnerships, corporations, limited partnerships,
limited liability companies, limited liability limited partnerships, business trusts, real
estate investment trust and trade name filings), is the legal name of your company listed
with the State of Maryland Department of Assessments and Taxation and in good
standing? You may check by going to www.sdat.org.

_______ If this Solicitation requires a Bid/Proposal bond, did you include one?

_______ Did you provide one original and one copy of your response?

_______ Is the outside of the submittal envelope marked with the Bid/Proposal Number, the title,
the due date, your company name, and your company address?

MANDATORY REQUIREMENTS

The following item(s) are MANDATORY and shall be submitted, in fully executed format, with
Bid Response/Proposal in order to be considered for an award. If the following item(s) are not
submitted with the Bid Response/Proposal, the Bid/Response/Proposal shall be considered null
and void, and therefore, will be rejected.

(A) Bid Bond or Certified Check (5%)
(B) County's Bid Response Form
NOTE: THIS FORM MUST BE SUBMITTED IN DUPLICATE WITH THE BID

ANNE ARUNDEL COUNTY

LARGE DIAMETER SEWER RELINING III
Proposal No.: X7388168
Project No.: X738800

AFFIDAVIT

On behalf of ______________________________, I do solemnly declare and affirm, under penalty of perjury, that to the best of my knowledge, information, and belief:

1. Neither ______________________________, nor any of its officers, directors, or partners, nor any of its employees who are directly involved in obtaining or performing contracts with the State of Maryland, a unit of the State (as defined in ‘16-101 of the State Finance and Procurement Article), or a local governmental entity in the State, has:

   (a) been convicted of bribery, attempted bribery, or conspiracy to bribe, under the laws of any state or of the federal government;

   (b) been convicted under a State or federal law or statute of any offense enumerated in §16-203 of the State Finance and Procurement Article; or

   (c) been found civilly liable under a State or federal antitrust statute as provided in §16-203 of the State Finance and Procurement Article.

2. ______________________________ shall not knowingly enter into a contract with a public body under which a person or business debarred or suspended under Title 16, Subtitle 3 of the State Finance and Procurement Article will provide, directly or indirectly, supplies, services, architectural services, construction related services, leases of real property, or construction.

3. Neither ______________________________, nor any employee or representative of ______________________________:

   (a) agreed, conspired, connived, or colluded to produce a deceptive show of competition in the preparation of the bid or offer being submitted; or

A3-1
(b) has in any manner, directly or indirectly, entered into any agreement, participated in any collusion to fix the price of the bid or proposal of any bidder or offeror or any competitor, or otherwise taken any action in restraint of free competitive bidding in connection with the contract for which the bid or offer is submitted.

Contractor: ________________________________

By: ________________________________

Title: ________________________________

Date: ________________________________

Subscribed and sworn to before me, a Notary Public of the State of __________, County or City of______________________, this _________ day of ________________________.______.

____________________________________
(Notary Public)

My Commission expires: ________________________________

A3-2

Revised 3/08
J:\NWhitnall\X7388168-Large Diameter 3\05_Const_Cont_Docs\00 - PM\046-05 AFFIDAVIT.doc
NOTE: THIS FORM MUST BE SUBMITTED IN DUPLICATE WITH THE BID

PROPOSAL

TO ANNE ARUNDEL COUNTY, MARYLAND

LARGE DIAMETER SEWER RELINING III
Proposal No.: X7388168
Project No.: X738800

Made this ______ day of ________________________________, ____.

by ______________________________________________________

Business Address: _______________________________________

We/I the undersigned Bidder declare that the only person, firm, or corporation, or persons, firms, or corporations, that has or have any interest in this Proposal, or in the Contracts proposed to be taken, is or are the undersigned; that this Proposal is made without any connection or collusion with any other person, firm, or corporation making a Proposal for the same work; the undersigned further certifies that they have received Drawings, Specifications, Addenda (if any), and copy of this Proposal and that they constitute all instruments for bidding this contract, and that the Specifications, form of contract and the Drawings, therein referred to, have been carefully examined and are understood; that as careful an examination has been made of the worksite as is necessary to become informed as to the character and extent of the work required; and that is proposed and agreed, if the Proposal is accepted, to Contract with Anne Arundel County, Maryland, in the form of contract hereto attached, to do the required work in the manner set forth in the Specifications and as shown by the Drawings.

If this Proposal shall be accepted by Anne Arundel County, Maryland and the undersigned shall refuse or neglect, within ten (10) days after receiving the Contract for execution, to execute the same and to give the stipulated Bond, then said County may, at its option, determine that the Bidder has abandoned the Contract, and thereupon the Proposal and the acceptance thereof shall be null and void, and the deposit accompanying the Proposal shall be forfeited and paid as liquidated damages to the County. The base bid, unit prices and alternatives on the attached and signed Proposal Form are to include and cover the furnishing of all necessary machinery, tools, apparatus and means for performing the work, and the doing of all the above mentioned work, in the manner set forth, described and shown in the Specifications and on the Contract Drawings within the prescribed number of consecutive calendar days after service of written notice from the Owner to proceed with the work.
NOTE: THIS FORM MUST BE SUBMITTED IN DUPLICATE WITH THE BID

The successful Bidder shall be required to submit a list containing all parties to which he intends to subcontract any portion of the work. The list shall contain the subcontractor's name, address, work to be sublet and business telephone number.

(NOTE: The Bidder or Bidders must sign here and the address of each must be given. In the case of firms, the firm name must be signed and subscribed to by at least one member. In the case of corporations, the corporate name must be signed by some authorized officer or agent thereof, who shall also subscribe his name and office. The seal of the corporation shall be affixed. Telephone number to be listed).

The names and addresses of all members of a firm or the names, addresses and titles of every officer of a corporation, or duly authorized agent, as the case may be, must be given here by the member of the firm or by the officer or agent of the corporation who signs the Proposal.

We/I will submit within ten (10) days of request by the county, the Experience and Equipment Certification specified and further understand and are/am aware that the work will be awarded to an approved organization which is properly constituted in experience, capital and equipment.

Prior to, or following, the award of this Contract, the Owner or Engineer may request that We/I supply him with whatever information is needed by him in order to become better familiarized with any of the subcontractors and/or equipment suppliers. It is further stipulated that no change in the names of those persons or organizations will be made unless written application is made with justification and prior approval is granted. It is further agreed that the apparent low bidder will submit within 10 days of a request by the county a detailed list of all subcontractors and equipment suppliers including anticipated dollar values.

We/I agree to accept as full compensation the unit prices stipulated for the contingent construction items that are incorporated into the work by direction of the Engineer in the field.
NOTE: THIS FORM MUST BE SUBMITTED IN DUPLICATE WITH THE BID

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS
ANNAPOLIS, MARYLAND

LARGE DIAMETER SEWER RELINING III
Proposal No.: X7388168
Project No.: X738800

DATE: ____________________

This is to certify that ____________________ has received Addendum No. ____ through ____ and this bid reflects the changes created by these addenda.

THE CONTRACTOR OR ANY SUBCONTRACTOR ON THIS WORK WILL BE REQUESTED TO COMPLY WITH EXECUTIVE ORDER 11246, ENTITLED "EQUAL EMPLOYMENT OPPORTUNITY" AS AMENDED BY EXECUTIVE ORDER 11375, AND AS SUPPLEMENTED IN U.S. DEPT. OF LABOR REGULATIONS (41 CRF PART 60).

Bidder's Name: ________________________________________________________________

Bidder's Signature: _____________________________________________________________

Bidder's Title: _________________________________________________________________

Bidder's Company Name: _________________________________________________________

Bidder's Address: _______________________________________________________________

Bidder's City State & Zipcode: ___________________________________________________

Telephone Number: _____________________________________________________________

Email Address: _________________________________________________________________
### BASE BID ITEMS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Estimated Quantity</th>
<th>Unit Price Dols / Cts</th>
<th>Total Price Dols / Cts</th>
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<tbody>
<tr>
<td>01</td>
<td>Mobilization</td>
<td>LS</td>
<td>1</td>
<td></td>
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</tr>
<tr>
<td>02</td>
<td>18” Sewer Main Lining</td>
<td>LF</td>
<td>580</td>
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<td></td>
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<tr>
<td>03</td>
<td>24” Sewer Main Lining</td>
<td>LF</td>
<td>1,480</td>
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<tr>
<td>04</td>
<td>Re-Establish Existing Service or other Laterals</td>
<td>EA</td>
<td>7</td>
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<td></td>
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<tr>
<td>05a</td>
<td>Manhole Lining - Single Layer (100% Calcium Aluminate, ½” lift)</td>
<td>VF</td>
<td>100</td>
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<td></td>
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<tr>
<td>05b</td>
<td>Manhole Lining - Additional Layer (100% Calcium Aluminate, ½” lift)</td>
<td>VF</td>
<td>50</td>
<td></td>
<td></td>
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</table>

**SUBTOTAL BASE BID ITEMS** $ ________________
COMPANY NAME: ________________________________

**CONTINGENCY ITEMS**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit Size</th>
<th>Estimated Quantity</th>
<th>Unit Price Dols / Cts</th>
<th>Total Price Dols / Cts</th>
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</thead>
<tbody>
<tr>
<td>C.01</td>
<td>Misc. Material</td>
<td>LS</td>
<td>1</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
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<tr>
<td>C.02</td>
<td>Misc. Equipment</td>
<td>LS</td>
<td>1</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
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<tr>
<td>C.03</td>
<td>Overhead &amp; Profit</td>
<td>%</td>
<td>$1,000.00</td>
<td>_____ %</td>
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<tr>
<td>C.04</td>
<td>Point Repairs (Maximum Allowance)</td>
<td>-----</td>
<td>-----</td>
<td>$60,000</td>
<td>$60,000</td>
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<td>C.05</td>
<td>Additional Bypass Pumping</td>
<td>HR</td>
<td>200</td>
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<td>C.06</td>
<td>Inspector Directed TV Inspection</td>
<td>EA</td>
<td>8</td>
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<tr>
<td>C.07</td>
<td>Laborer</td>
<td>HR</td>
<td>80</td>
<td></td>
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<tr>
<td>C.08</td>
<td>Pipe Layer</td>
<td>HR</td>
<td>40</td>
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<td></td>
</tr>
<tr>
<td>C.09</td>
<td>Foreman with Pickup</td>
<td>HR</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C.10</td>
<td>Truck &amp; Truck Driver (Tool Truck/Pickup/Dump)</td>
<td>HR</td>
<td>20</td>
<td></td>
<td></td>
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<tr>
<td>C.11</td>
<td>Backhoe with Operator</td>
<td>HR</td>
<td>40</td>
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<tr>
<td>C.12</td>
<td>Additional Paving</td>
<td>SY</td>
<td>125</td>
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<td>C.13</td>
<td>CR6</td>
<td>TON</td>
<td>25</td>
<td></td>
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<tr>
<td>C.14</td>
<td>Additional Concrete for Sidewalks/Driveways</td>
<td>SY</td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Item Description | Unit Size | Estimated Quantity | Unit Price Dols / Cts | Total Price Dols / Cts
--- | --- | --- | --- | ---
C.15 | Re-cut/Enlarge Existing Lined Pipe Taps | EA | 10 |  
C.16 | Manhole Rehabilitation - PerpetuWall™ | VF | 50 |  
C.17 | 48” Diameter Manhole Rehabilitation - Permaform | VF | 15 | 

**SUBTOTAL CONTINGENT ITEMS** $___________

Note: The contingent items are additional items that the Contractor may be directed to be install per the Inspector or Engineer. All items required for constructing what is shown on the plans and specifications are to be part of and included in the Base Bid.
### UNIT PRICE ITEMS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit Size</th>
<th>Estimated Quantity</th>
<th>Unit Price $/Cents</th>
<th>Total Price $/Cents</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.01</td>
<td>Class 3 Excavation with Stone Refill/Offsite Disposal of Unsuitable Materials</td>
<td>CY</td>
<td>12</td>
<td>$90.00</td>
<td>$1,080.00</td>
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<tr>
<td>U.02</td>
<td>Select Refill/Offsite Disposal of Unsuitable Materials</td>
<td>CY</td>
<td>12</td>
<td>$65.00</td>
<td>$780.00</td>
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<tr>
<td>U.03</td>
<td>Borrow Refill/Offsite Disposal of Unsuitable Matls</td>
<td>CY</td>
<td>12</td>
<td>$50.00</td>
<td>$600.00</td>
</tr>
<tr>
<td>U.04</td>
<td>Reinforced Silt Fence</td>
<td>LF</td>
<td>250</td>
<td>$6.50</td>
<td>$1,625.00</td>
</tr>
<tr>
<td>U.05</td>
<td>Excelsior Matting</td>
<td>SY</td>
<td>80</td>
<td>$2.00</td>
<td>$160.00</td>
</tr>
<tr>
<td>U.06</td>
<td>Temporary Seed</td>
<td>SY</td>
<td>600</td>
<td>$0.70</td>
<td>$420.00</td>
</tr>
<tr>
<td>U.07</td>
<td>Earth Dike</td>
<td>LF</td>
<td>20</td>
<td>$2.25</td>
<td>$45.00</td>
</tr>
<tr>
<td>U.08</td>
<td>Stone #2 for Sediment Control on filter cloth, including removal</td>
<td>CY</td>
<td>30</td>
<td>$65.00</td>
<td>$1,950.00</td>
</tr>
<tr>
<td>U.09</td>
<td>Calcium Chloride</td>
<td>TON</td>
<td>1</td>
<td>$650.00</td>
<td>$650.00</td>
</tr>
<tr>
<td>U.10</td>
<td>Miscellaneous Concrete</td>
<td>CY</td>
<td>5</td>
<td>$325.00</td>
<td>$1,625.00</td>
</tr>
<tr>
<td>U.11</td>
<td>Test Pit Excavations…</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>a.</td>
<td>In County Rd – First CY</td>
<td>CY</td>
<td>10</td>
<td>$350.00</td>
<td>$3,500.00</td>
</tr>
<tr>
<td>b.</td>
<td>In County Rd – Each Add CY</td>
<td>CY</td>
<td>5</td>
<td>$250.00</td>
<td>$1,250.00</td>
</tr>
<tr>
<td>c.</td>
<td>Outside of Road (0 to 3 CY)</td>
<td>CY</td>
<td>8</td>
<td>$200.00</td>
<td>$1,600.00</td>
</tr>
<tr>
<td>d.</td>
<td>Outside of Road (Greater than 3 CY)</td>
<td>CY</td>
<td>4</td>
<td>$125.00</td>
<td>$500.00</td>
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<tr>
<td>e.</td>
<td>Non Destructive Test Pit, incl Traffic Control</td>
<td>EA</td>
<td>6</td>
<td>$650.00</td>
<td>$3,900.00</td>
</tr>
</tbody>
</table>

**SUBTOTAL UNIT PRICE ITEMS** $19,685.00

Note: The unit price items are additional items that the Contractor may be directed to install per the Inspector or Engineer. All items required for constructing what is shown on the plans and specifications are to be part of and included in the Base Bid.
COMPANY NAME: ________________________________

Subtotal Base Bid Items (pg A4-4)       

Subtotal Contingent Items (pg A4-5, A4-6) +  

Subtotal Unit Price Items (pg A4-7) +  $ 19,685.00  

Total Bid  

TOTAL BID: ________________________________________________

___________________________________________________________ $ __________________________

BID PRICE MUST BE WRITTEN AND SHOWN IN NUMBERS, IN CASE OF DISCREPANCY THE WRITTEN AMOUNT WILL SUPERSEDE.

Total time for contract completion is one hundred (100) consecutive calendar days. Liquidated damages shall be eight hundred ($950) dollars per calendar day.

Basis of Award

The award of the Contract shall be in accordance with Section GP 3.0 of the Anne Arundel County Government January 2001 “Standard Details and Specifications for Construction” and any subsequent revisions thereto and based on the total sum of base bid line items 01-05, contingent items C01-C17, and unit price items U01-U-11.

_______________________________________________  
(Bidder)

By:  

_______________________________________________  
(Title)

Date:  

In accordance with the County Code, Article 8-2-119, please list any affiliation with a County employee(s) or official(s) (Write "none" if there are no affiliations.):

____________________________________________________________________________________
ANNE ARUNDEL COUNTY

LARGE DIAMETER SEWER RELINING III
Proposal No.: X7388168
Project No.: X738800

CONTRACT

THIS CONTRACT, made this ______ day of ______________ the year______, by and between _______________________________ hereinafter called the CONTRACTOR, and ANNE ARUNDEL COUNTY, MARYLAND, a body corporate and politic of the State of Maryland, hereinafter called the COUNTY.

WHEREAS, the Contract for constructing (the project name)__________________________________________________________
shown on Drawings, marked Proposal X7388168, on file in the Office of the Department of Public Works, subject to all the conditions, covenants, stipulations, terms and provisions contained in the Special provisions, attached hereto, and the Anne Arundel County Government "Standard Details and Specifications for Construction" issued January 2001, and any revisions thereto, as adopted by the Department of Public Works, said Standard Specifications and Standard Details being in all respect made a part hereof by reference as full and with the same effect as if the same had been set forth in full herein, has recently been awarded to the Contractor by the County at and for the sum equal to the aggregate cost of the work, labor, materials and supplies done or furnished, at the prices and rates respectively named therefore in the proposal attached hereto.

AND WHEREAS, it was one of the conditions of said Award that a formal Contract should be executed by and between the contractor and the County evidencing the terms of said Award.

NOW THEREFORE, THIS CONTRACT WITNESSETH, that the Contractor does hereby covenant and agree with the County that he will well and faithfully construct said X7388168 Large Diameter Sewer Relining III in accordance with each and every one of the conditions, covenants, stipulations, terms and provisions contained in the above-mentioned Specifications, and as shown on said Drawings, 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 therefore in the Proposal attached hereto, that sum being $____________________________(excluding change orders), and will well and faithfully comply with and perform each and every obligation imposed upon him by said Specifications, or the terms of said Award.

The Contractor further agrees that for each and every calendar day that the Contractor is in default in completing the work to be done under this Contract, the Contractor shall pay to the County the sum of $950 which sum is hereby agreed upon as liquidated damages as set forth in the Standard Specifications.
And the County does hereby covenant and agree with the Contractor that it will pay to the Contractor, when due and payable under the terms of said Specifications and of said Award, the above mentioned sum; and it will well and faithfully comply with and perform each and every obligation imposed upon it by said Specifications or the terms of said Award.

And the Contractor and the County do hereby agree that this Contract constitutes a contract under seal and that they intend the twelve year statute of limitations period to apply, as set forth in Courts & Judicial proceedings Article, §5-102, Annotated Code of Maryland.

SERVICE OF PROCESS IN THE EVENT OF SUIT

The Contractor does hereby nominate and appoint ______________________________________________ who actually resides at ___________________________________________________________ in the State of Maryland who will accept service both before and after completion of the Contract and under no circumstances is the Contractor to have the right to withdraw or revoke the agency without the prior written permission of the County.

IN WITNESS WHEREOF, Said ____________________________________________________________, the Contractor, has hereunto set (his) (its) hand and affixed (his) (its) corporate seal, and the County has caused these presents to be signed and the County has caused its corporate seal to be hereunder affixed, duly attested by the Secretary of the County.

WITNESS:

_________________________________________________________ (SEAL)
Witness

_________________________________________________________ (SEAL)
Witness

WITNESS:

_________________________________________________________
Karen L. Cook, Chief Administrative Officer

Approved as to legal form and sufficiency:
_________________________________________________________
Office of Law

Approved for sufficient funds, and encumbrance of same:
_________________________________________________________
Controller
ANNE ARUNDEL COUNTY, MARYLAND

LARGE DIAMETER RELINING III
Proposal No.: X738800
Project No.: X7388168

CONTRACTOR’S PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That _________________________________________________________________________,
as Principal, hereinafter called Principal, and _________________________________, as Surety, hereinafter called Surety, are held and firmly bound unto the Anne Arundel County, Maryland, a body corporate and politic of the State of Maryland, hereinafter called the County, in the amount of ________________________________ Dollars ($_________) (amount to be 100% of Contract Amount), for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a Written Contract dated _________ with the County for Project No.: X738800 Contract No.: X7388168 which contract is by reference made a part hereof and hereinafter referred to as the Contract.

NOW, THEREFORE, the condition of this obligation is such, that if the Principal shall well, truly and properly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of said Contract and of all such alterations and modifications thereof as may hereafter be made therein, in the manner and to the extent which said Contract provides for such alterations and modifications, during the original term of said Contract and any extensions thereof which may be granted by the County and agreed upon by the Principal; and if the Principal shall
indemnify and save harmless the County from all loss, cost or damage arising out of a default hereunder or under said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety expressly waives any right to receive NOTICE of extensions of time, or alterations or modifications of the Contract, which are provided for and made pursuant to the terms of, said contract.

PROVIDED, HOWEVER, no right of action shall accrue on this bond to or for the use of any person, firm or corporation whatever other than the County named herein, or its successors in office.

Signed and sealed this __________ day of, _______________________, ________.

In the Presence of:

_____________________________________________ (Contractor)

WITNESS:

_____________________________________________ (SEAL)

Signature of Principal/Corporate Officer

_____________________________________________ (SEAL)

Title

_____________________________________________ (SEAL)

Surety

By: ______________________________________ (SEAL)

_____________________________________________

Bond No.
ANNE ARUNDEL COUNTY, MARYLAND

LARGE DIAMETER SEWER RELINING III
Proposal No.: X7388168
Project No.: X738800

CONTRACTOR'S LABOR AND MATERIAL BOND

KNOW ALL MEN BY THESE PRESENTS:

That ____________________________________________________________, as Principal,
hereinafter called Principal, and _______________________________, as Surety, hereinafter called
Surety, are held and firmly bound unto the Anne Arundel County, Maryland, a body corporate and
politic of the State of Maryland, hereinafter called the County, for the use and benefit of Claimant, as
herein below defined, in the amount of ________________________________
Dollars ($_________________________) (amount of bond to be 50% of Contract Amount), for the
payment whereof Principal and Surety bind themselves, their heirs, executors, administrators,
successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a Written Contract dated ______________with
the County for Project No.: X738800 Contract No.: X7388168 which contract is by reference made a
part hereof and hereinafter referred to as the Contract.

NOW, THEREFORE, the condition of this obligation is such, that if the principal shall
promptly make payment to each and every Claimant, as hereinafter, defined, for all labor, materials,
supplies and rental of equipment reasonably required and used or consumed in the performance of
the Contract and of all such alterations and modifications of said Contract provides for such
alterations and modifications, during the original term of said Contract and any extensions thereof
which may be granted by the County and agreed upon by the Principal, then this obligation shall be null and void; otherwise it shall be and remain in full force and effect.

The Surety expressly waives any right to receive notice of extensions of time, or alterations or modifications of the Contract, which are provided for and made pursuant to the terms of, said Contract.

PROVIDED, HOWEVER, anything in said Contract to the contrary notwithstanding, this bond is executed upon and subject to the express conditions and limitations of State Finance and Procurement Article, Section 17-108 and 17-109, Annotated Code of Maryland, as of the date of this contract wherein it is set forth in pertinent part as follows:

**Action on security.**

(a) *In general.* -- Subject to subsection (b) of this section, a supplier may sue on payment security if the supplier:

1. Supplied labor or materials in the prosecution of work provided for in a contract subject to this subtitle; and

2. Has not been paid in full for the labor or materials within 90 days after the day that the person last supplied labor or materials for which the claim is made.

(b) *Payment owed by subcontractor.* –

1. A supplier who has a direct contractual relationship with a subcontractor or sub-subcontractor of a contractor who has provided payment security but no contractual relationship with the contractor may sue on the security if the supplier gives written notice to the contractor within 90 days after the labor or materials for which the claim is made were last supplied in prosecution of work covered by the security.

2. A notice under this subsection:

   (i) Shall state with substantial accuracy the amount claimed and the person to whom the labor or material was supplied; and

   (ii) Shall be sent by certified mail to the contractor at the contractor's residence or a place where the contractor has an office or does business.
Venue; limitations; costs.

(a) Venue. -- An action on a payment bond required by this subtitle shall be filed in the appropriate court of the county where:

(1) The contract was executed and performed; or

(2) The contractor has its principal place of business.

(b) Limitations period. -- An action on a payment bond required by this subtitle shall be filed within 1 year after the public body finally accepts the work performed under the contract.

Signed and sealed this _____________ day of __________________________. ________.

In the Presence of:

___________________________________________

WITNESS:

___________________________________________

                      (SEAL)

                      Signature of Principal/Corporate Officer

                      ____________________________(SEAL)

                      Title

                      _____________________________

                      Surety

                      _____________________________

                      By: _____________________________

                      _____________________________

                      Bond No.
ANNE ARUNDEL COUNTY, MARYLAND

LARGE DIAMETER SEWER RELINING III
Proposal No.: X7388168
Project No.: X738800

CORPORATE RESOLUTION

RESOLVED, that _________________________________ be, and it is hereby authorized to do business and enter into contracts and agreements with Anne Arundel County, Maryland,

RESOLVED, that __________________________ and __________________________ who are respectfully the __________________________ and __________________________, or its duly authorized agent(s) of the _________________________________ are authorized to file and sign contracts on behalf of the said Corporation.

AND IT IS FURTHER RESOLVED, that the authority to said officer(s) or agent(s) conferred by this Resolution shall remain open and good until revoked by a formal action of the Board of Directors of the Corporation and due notice of such revocation delivered to the Anne Arundel County, Maryland in writing under the signature of the Secretary or Assistant Secretary of this Corporation, and this authority shall apply to any present or future incumbent of the aforesaid office.

I HEREBY CERTIFY that the above is a true copy of the Resolution of the Board of Directors of _________________________________, passed at a meeting of said Board duly called and held on the day of ______________.______, at which meeting a quorum of said Board of Directors was present and voted.

_________________________________
Secretary

SEAL
ANNE ARUNDEL COUNTY, MARYLAND

LARGE DIAMETER SEWER RELINING III
Proposal No.: X7388168
Project No.: X738800

BID BOND

KNOW ALL MEN BY THESE PRESENT, that we

_________________________________________________________ hereinafter called the "Principal" and

Company Name

____________________________________

Surety

as Surety ("Surety"), are held and firmly bound unto Anne Arundel County, Maryland, hereinafter
called the "Owner" in the penal sum of ____________________________________________
Dollars ($__________) lawful money of the United States, for the payment of which sum well and
truly make, we bind ourselves, our heirs, executors, administrators and successors, jointly and
severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has
submitted the accompanying bid dated _______________________________ for the
X7388168 Large Diameter Sewer Relining III contract, Anne Arundel County, Maryland.

NOW THEREFORE, if the Principal shall not withdraw said bid within the period specified
therein after the opening of the same, or, if no period is specified, within ninety (90) days after said
opening; and within ten (10) days after the prescribed forms are presented to him for signature, enter
into a written contract with the Owner, in accordance with the bid as accepted and give Bond with
good and sufficient surety or sureties, as may be required for the faithful performance and proper
fulfillment of such contract; or in the event of the withdrawal of said bid within the period specified
or the failure to enter into such contract and give such bond within the time specified if the principal
shall pay the Owner the difference between the amount specified in said bid and the amount for
which the Owner may procure the required work or supplies, or both, if the latter amount be in
excess of the former, then the above obligation shall be void, and of no effect, otherwise to remain in
full force and effect.
IN WITNESS WHEREOF, the above bonded parties have executed this instrument under their several seals this __________ day of __________________, ______, the name and corporate seal of each corporate party being hereto affixed, and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

In the Presence of:

______________________________________
(Contractor)

______________________________________
Signature of Principal/Corporate Officer

______________________________________
Title

____________________________
(SHIELD)

Surety

By: ____________________________

____________________________
Bond No.
ANNE ARUNDEL COUNTY

LARGE DIAMETER SEWER RELINING III
Proposal No.: X7388168
Project No.: X738800

EXPERIENCE AND EQUIPMENT CERTIFICATION

I. General
   a. Legal Title, Address and Phone Number of Organization

      ____________________________________________________________
      ____________________________________________________________
      ____________________________________________________________
      ____________________________________________________________

   b. Maryland Representative's Name, Title and Address.

      ____________________________________________________________
      ____________________________________________________________
      ____________________________________________________________
      ____________________________________________________________

   c. (Check one)  Corporation _____  Co-Partnership____  Individual _____

II. Experience
   a. Indicate type of contracting undertaken by your organization and years experience.

      General ______  Sub ______  Type ____________________________
      Years    Years    Years

      Type ________________________________
      Years

      Type ________________________________
      Years
b. State construction experience of principal members of your organization.

Construction Experience

<table>
<thead>
<tr>
<th>NAME</th>
<th>TITLE (As Pres., Mgr, etc.)</th>
<th>CONSTRUCTION EXPERIENCE YEARS</th>
<th>TYPE OF WORK (Sewer, Hwy, Bridges, Paving, etc.)</th>
<th>IN WHAT CAPACITY (Supt, Foreman)</th>
</tr>
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</table>


c. Give any special qualifications of firm members (Registered Engineer, Surveyors, etc.)

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

d. List Principal projects completed by your organization.

<table>
<thead>
<tr>
<th>Description</th>
<th>Gen. or Sub (If sub, what type of work)</th>
<th>Your Contract Amount</th>
<th>Year</th>
<th>Reference</th>
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e. Have you ever failed to complete any work awarded to you? ____________________

If so, where and why? __________________________________________________

____________________________________________________________________

____________________________________________________________________

B6-2

Revised 3/08
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f. Has your firm been assessed liquidated damages within the last three years? If so, explain circumstances. *(Attach separate sheet)*

III. Financial Capability

The following financial data shall be provided. If the Bidder is a subsidiary of another firm, then the information requested should be provided for both the Bidder and the parent organization, as it may be applicable to the Bid.

a. The Bidder's most recent Form 10K, as filed with the U.S. Securities and Exchange Commission ("SEC") and all 100s since the last 10K,

b. All Bidders not filing a Form 10K with the SEC should submit the following information:

1. Federal Tax Returns for the last three (3) years;

2. Audited financial statements for the past three (3) fiscal years to include, at a minimum, income statement, balance sheet, and statement of changes in financial position;

3. Copies of quarterly financial reports since the last audited statement;

4. Any material changes in the mode of conducting business, bankruptcy proceedings, and mergers or acquisitions for the past three years, as well as any disclosure of any potential mergers or acquisitions; and

5. Any and all lawsuits filed against the Bidder since January 1, 1988 and a statement as to the outcome or current status of each such lawsuit.

d. A full and complete description of the legal and financial relationships among all entities which will be bound by the terms and conditions of the Contract including any entities which will guarantee the obligations of, or provide financial support to, any such parties.
NOTE: THIS FORM TO BE SUBMITTED BY APPARENT LOW BIDDER WITHIN TEN DAYS OF REQUEST BY THE COUNTY

IV. Bidder Certification

The above statements are certified to be true and accurate and we have the equipment, labor, supervision and financial capacity to perform this Contract, either with our organization, or with subcontractors.

Dated at __________________________ this _____ day of __________________________.____.

By: _________________________________

_________________________________
(Title of Person Signing)

_________________________________
(Name of Organization)

State of _________________________________

County of _________________________________

Being duly sworn states that he/she

Name

is __________________________ of __________________________

(Office) (Name of Organization)

and that the answers to the foregoing questions and all statements therein contained are true and correct.

Sworn to before me this __________________________ day of __________________________.____.

______________________________
Notary Public

My Commission Expires
ANNE ARUNDEL COUNTY

LARGE DIAMETER SEWER RELINING III
Proposal No.: X7388168
Project No.: X738800

LIST OF SUBCONTRACTORS AND EQUIPMENT SUPPLIERS

<table>
<thead>
<tr>
<th>Subcontractor's Type of Work or Supplier's Type of Equipment</th>
<th>Name</th>
<th>Address</th>
<th>Percent of Total Contract</th>
<th>MBE SBE or WBE</th>
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Last Revised: 10/08
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Customer Relations Requirements

All consultants, contractors, subcontractors, suppliers and etc., are required to assume their part in the County's Customer Oriented Programs. A description of the Department's policy and its action items are as follows:

"The Department of Public Works has a customer oriented philosophy that requires all employees, consultants, contractors, etc., to adhere to the five dimensions of quality service."

The Five Dimensions of Quality Service Are:

1. Reliability: Is what was promised provided dependably and accurately?
   a. Scheduling
   b. Proper notification
   c. Traffic control
   d. Sediment control
   e. Quality of work

2. Assurance: Are the employees knowledgeable and courteous, and can they express trust and confidence?
   a. Citizen interaction - knowledgeable
   b. Concerns remedied

3. Empathy: Are caring and individual attention provided?
   a. Citizen interaction - polite, courteous
   b. Callbacks will be treated as part of the construction effort
4. Responsiveness: Is there a willingness to help customers and provide proper service?
   a. Response to citizen concern within two days. If required work is anticipated to exceed two days, a schedule must be provided indicating when work will be completed.
   b. Additionally, follow-up must be accomplished. Whether the work is complete or not, the follow-up must be done.

5. Tangibles: Are the physical facilities and equipment customer friendly?
   a. Traffic control
   b. Sediment control
   c. Safe driving - includes control of speed of vehicles
   d. Sanitary facilities provided for manpower

As a means of ensuring the contractor's participation, each contractor must provide a customer plan and a team composition responsible for adhering to the "Five Dimensions of Customer Service" given previously. Additionally, the plan and the team composition are to be submitted within fourteen (14) calendar days of NTP or concurrent with the contractor's on-site mobilization. The team leader is required to oversee the entire program and be available to assist in resolution of concerns. The other members of the team will provide courteous and prompt assistance to concerns. Any contractor's employee(s) not performing in accordance with the above will be subject to removal from further participation in the project upon written order from the County representative. Failure to participate or respond as required shall be cause for termination of the contract for non-performance.
ANNE ARUNDEL COUNTY

LARGE DIAMETER SEWER RELINING III
Proposal No.: X7388168
Project No.: X738800

APPENDIX “B”

CONTRACTOR SECURITY PROGRAM

This appendix describes measures to be taken by the contractor to reduce the risk of vulnerability to Anne Arundel County Department of Public Works (DPW) Utility Operations facilities for each of the Homeland Security Threat Advisory Levels. Utility Operations personnel may take measures based on the Department of Public Works Policy and Procedures Manual that will impact the contractor’s work. Consultants, contractors, subcontractors, suppliers, etc. are required to perform their part in this program.

The following measures shall be implemented based on the security threat level declared by Utility Operations.

Standard Practice & Measures

1. Carry identification while on Utility Operations property. Minimum identification may consist of a printed or hand written business card or paper bearing the hiring company’s name, the individual’s name and the signature of the hiring company foreman, supervisor or other representative.

2. Challenge unknown visitors. Request identification and purpose of visit.

3. Review security procedures with personnel.

4. Report suspicious activity (carrying suitcases / containers, photographing, noting or asking questions about operations, pumping or pipeline operations or security measures) to supervision. Supervision determines whether to contact law enforcement and chain of command.

5. Report unidentified vehicles parked or operated in a suspicious manner on or in Utility Operations facilities, equipment or rights-of-way. Notify supervision of infractions. Supervision determines whether to contact law enforcement and chain of command.

Elevated Threat Advisory Level – No Specific Information on Timing or Location

1. Remind personnel to:
   a. Carry identification while on Utility Operations property. Minimum identification may consist of a printed or hand written business card or paper bearing the hiring company’s name, the individual’s name and the signature of the hiring company foreman, supervisor or other representative.
   b. Challenge unknown visitors.
   c. Request identification and purpose of visit.
2 Cease public tours.

3 If directed by Utility Operations:
   a. Remove vehicles and objects (e.g. dumpsters) parked within 25 yards of specified facilities.
   b. Park vehicles outside facilities. Implement centralized parking and shuttle service.
   c. Report suspicious vehicles or objects to Utility Operations supervision.
   d. Verify the identity of individuals entering specified facilities.
   e. Facility gates and entrances will be locked, except when passing through. Limit access to essential employees and contractors. Verify the identity of individuals entering facilities. Issue visitor badges to visitors.
   f. Inspect buildings, rooms and storage areas not in regular use, daily.
   g. Inspect the interior and exterior of buildings for suspicious activities or packages. Check for signs of tampering or indications of unauthorized entry.

4 Utility Operations may:
   a. Erect barriers to control the direction of traffic flow and parking.
   b. Consult with law enforcement to close public roads and facilities.

---

**Imminent Threat Advisory Level – Threat at Location Impending or Very Soon**

1 Remind personnel to:
   a. Display identification while on Utility Operations property. Minimum identification may consist of a printed or hand written business card or paper bearing the hiring company’s name, the individual’s name and the signature of the hiring company foreman, supervisor or other representative.
   b. Challenge unknown visitors.
   c. Request identification of anyone not displaying it and ask the purpose of his or her visit.

2 Limit access to facilities and activities to personnel with legitimate and verifiable need to enter.
   a. Cease Public Tours

3 Buildings, rooms, and storage areas will be locked. Inspect baggage, briefcases, and packages brought to the facility.

4 If directed by Utility Operations:
   a. Remove vehicles and objects (e.g. dumpsters) parked within 25 yards of specified facilities. Identify owners of vehicles on Utility Operation property. Have unidentified vehicles inspected by law enforcement personnel and, if appropriate, removed.
   b. Park vehicles outside facilities. Implement centralized parking and shuttle service.
c. Inspect delivery vehicles and containers entering the facility. Require advance delivery notification and validate credentials of the driver.

d. Implement daily inspections of specified buildings and grounds.

e. Take steps to control access to specified facilities.

f. Facility gates and entrances will be locked, except when passing through. Limit access to essential employees and contractors. Verify the identity of individuals entering facilities. Issue visitor badges to visitors.

g. Inspect buildings, rooms and storage areas not in regular use daily.

h. Inspect the interior and exterior of buildings for suspicious activities or packages. Check for signs of tampering or indications of unauthorized entry.

i. Implement mailroom procedures. Have mail and packages sent to a central, secure location and inspected before distribution.

5 Utility Operations may:

a. Restrict access to specific facilities.

b. Request closure of public roads and facilities in the vicinity of specified facilities.

c. Stop work in part or in total.

d. Erect barriers to control the direction of traffic flow and parking.

e. Consult with law enforcement to close public roads and facilities.

f. Post guards.
These Special Provisions modify, change, delete from, or add to the latest version of the Anne Arundel County Standard Specifications for Construction and the Anne Arundel County Standard Details for Construction and contain general modifications applicable to all Contract Documents. These documents are considered as part of this Contract together with Plans, Specifications, Advertisement, Information for Bidders, Proposal, and Addenda, which all together form a part of the Contract and the provisions of all these shall be as binding upon the parties as if they were herein fully set forth. Where any paragraph or section contained in the Standard Specifications are modified or deleted by these Special Provisions, the unaltered provisions of the paragraph or section remain in effect. The general provisions, standards details, and standard specifications can be downloaded from the County’s website:

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SP-01  PROJECT DESCRIPTION

This project shall consist of lining approximately 2,060 LF of existing, deteriorated gravity sanitary sewer pipe in the Broadwater area of Anne Arundel County. The scope of work includes lining 18” and 24” pipe (the Drum Point Road sewer interceptor) and rehabilitation of eleven (11) manholes. All materials, labor, and equipment including those necessary for restoration, bypass pumping and piping, traffic control, and other ancillary components of this construction shall be included as part of the Contractor’s base bid for this contract.

Refer to Appendix E (lining location list, 40-scale drawings, and TV Camera footage) for more information about the sewer mains to be lined.

Refer to Appendix F (manhole location list, 40-scale drawings, and available as-builts) for more information about the manhole rehabilitation locations.

SP-02  SCOPE OF WORK

This work includes lining 18” and 24” diameter sewer main and manhole rehabilitation. Refer to Base Bid Items No. 2 through 5.b for specific quantities.

The work under this contract shall be performed by the Contractor as directed by the County with the understanding that site visits and surveys have been made by the Contractor. The location of this contract work is readily available and easily accessible for the Contractor to perform the recommended pre-bid site visit. No formal site visit or tour will be conducted by the County.

As directed by the County, the Contractor shall supplement the County’s review of data to determine locations of excavations. It is the County’s intent to minimize excavations on this project and use remote or trenchless techniques whenever possible.

As directed by the County, the Contractor shall examine and study maps and data collected, and identify gaps and incongruities in the data.

These specifications include requirements for all design, materials, transportation, equipment, and labor necessary to line compromised or otherwise deteriorated sections of sanitary sewer.

The work required by this contract includes, but is not limited to:

A. Submission of a project schedule and a construction sequence of operations
B. Submission of applicable traffic control plans & bypass pumping/piping plan
C. Submission of a safety plan and task-specific safety analysis
D. Schedule of anticipated shutdowns, valve closures, and other coordination required between the County, Inspector, and County Operations staff.
Sequence of Work:

1. Provide television inspection of sanitary sewer mains to be rehabilitated before the rehabilitation process.
2. Provide all bypass pumping, including street and sidewalk crossings.
3. Perform all point repairs as needed to allow for the satisfactory reconstruction of the pipe.
4. Clean sections of the sanitary sewer main to be rehabilitated.
5. Line the sections of sanitary sewer main with minimal excavation.
6. Reinstate service laterals with minimal excavation.
7. Provide television inspection of the rehabilitated sanitary sewer mains after the rehabilitation process.
8. Rehabilitate the manholes listed in Appendix F.
9. Perform all site restoration and other miscellaneous work required to complete the Contract as specified and/or directed by the County.

When complete, the reconstructed section shall:

1. Extend from one manhole to the next manhole in a continuous length.
2. Be smooth and unwrinkled without lifts, blisters, holidays or other negative characteristics.
3. Provide a maximum flow capacity as further defined in these specifications.
4. Yield three-dimensional, cross-linking strength, as specified, in tension, compression, and flexural modulus, which is supported by documented, independent test analysis.
5. Provide a service life, which is supported by documented, independent test analysis.

The Contractor shall have access to the following equipment, be knowledgeable and expert in its use, and make it available for use on this project.

- All equipment necessary to complete lining;
- Excavation and bypass-pumping equipment;
- Remote internal mainline TV inspection equipment;
- Remote trenchless internal protrusion removal equipment;
- Remote lateral grout sealing equipment;
- Hydraulic sanitary sewer cleaning equipment;
- Mechanical sanitary sewer cleaning equipment;
- Traffic control equipment;
- Manhole entry equipment and safety gear.

**SP-03 GENERAL**

The Contractor shall immediately notify Anne Arundel County of any serious defect discovered which requires immediate emergency action. No rehabilitative work shall be performed by the Contractor without the prior authorization of the Department of Public Works.
The Contractor agrees to furnish the Department of Public Works within the quoted price without additional cost to the Department:

- Qualified operations, technical knowledge, and sufficient manpower to perform the work described herein in a workmanlike manner;
- Necessary equipment, tools, and materials related to the work described herein;
- Reports and videotapes encompassing work described herein;
- Personal injury, property damage, and Worker’s Compensation insurance in accordance with Anne Arundel County Standard Specifications;
- Blockage or equipment removal, including excavation, if required;
- Traffic control in accordance with the Standard Specifications, these Special Provisions, and as necessary to complete the work;
- Prompt removal from the job site of all debris resulting from operations under this agreement.

**SP-04 REHABILITATION SYSTEMS**

Structural rehabilitation systems, which shall be considered by the County for application to the existing sewer collection system shall be as follows:

1. Cured-in-Place Pipe Lining. Structural rehabilitation under this method shall be by insertion into the host pipe of a resin-impregnated felt tube, which is inverted against the inner wall of the pipe and then heat cured.

2. Liner systems that are cured using ultra violet (UV) light. Fiberglas liners cured with UV shall follow ASTM F2019. Cure with UV light sources at constant inner pressure sufficient to maintain liner tight against existing wall of pipe. Record time, rate of travel of ultraviolet light assembly, light sources and internal pressures as specified by liner manufacturer. Submit segment curing data to Engineer along with manufacturer’s curing standards.

The rehabilitation of the sanitary sewers shall be performed by technically competent, trained personnel. For the liner system to be acceptable, a minimum of 50,000 linear feet of satisfactory wastewater collection system liners installed in the United States must be documented. The Contractor shall demonstrate to the County that they have had a minimum of at least three (3) years of satisfactory field installation experience in the use of their product. The Contractor shall provide a list of references which can be contacted regarding their product.

**SP-05 SPECIFICATIONS AND PLANS**

The plans and specifications are intended to cover a complete project. It shall be distinctly understood that failure to mention any work, which would normally be required to complete the project shall not relieve the Contractor of his responsibility to perform such work.

This Contract will be constructed under the provisions of the latest version of the Anne
For any project locations that lie within four (4) miles of the Baltimore/Washington International Thurgood Marshall Airport (BWI), Contractor shall comply with the Anne Arundel County Soil Conservation District (AASCD) and Maryland Aviation Administration (MAA) “Vegetative Establishment Details and Specifications for Project within 4 Miles of the BWI Airport” dated July 1, 2004.

Any reference to the Standard Specifications for Construction and Materials by the Maryland Department of Transportation State Highway Administration shall be interpreted to mean the July 2008 edition and all additions, errata, and addenda.

These Special Provisions reference the American Society for Testing Materials (ASTM) and National Association of Sewer Service Companies (NASSCO) standard specifications which are made a part hereof by such reference and shall be the latest edition and revision thereof.

By submitting a proposal, the Bidder verifies that he shall not present any claims relating to failure to comply with Section GP-2.04, “Site Investigation.”

**SP-06 SCHEDULE OF PROCEDURES**

A Traffic Control Plan (TCP) and bypass plan have been provided for the Contractor as part of the contract documents. If the Contractor chooses to modify these plans, or develop an alternate plan, the Contractor shall submit the new plans in accordance with GP-7.10 in writing to the Engineer 20 days before starting work. Any modifications and subsequent permits obtained, will be at the cost of the Contractor and will not warrant contract time extension. A construction schedule must be submitted prior to the start of work in accordance with GP-8.04 of the Standard Specifications. No work shall be performed by the Contractor until the County has reviewed and approved this schedule and Traffic Control Plan. Prior to starting work, the Contractor shall provide a list of emergency phone numbers to be used to contact him to correct dangerous conditions that may develop at night or on weekends and holidays.

The Contractor's normal working hours shall be between 7:00 a.m. and 3:30 p.m. Monday through Friday. **No lining will be allowed on Fridays.** Work will not be permitted on Saturday, Sunday or holidays. Holidays are those holidays recognized by Anne Arundel County as defined in Section GP-1.03 of the Standard Specifications and those designated by the County as Service Reduction Days as listed on the County website. See SP-10 Maintenance of Traffic for normal work hours on bus routes.

A County Inspector will be available during the Contractor's normal working hours and for hours outside normal working hours for which approval has been obtained from the
Engineer. If work is performed outside of these hours, the cost of the Inspector’s time shall be deducted from any monies due or to become due the Contractor under this Contract; the monthly progress payments will be adjusted each month accordingly.

The Contractor shall only install one lining installation per day. As authorized by the County, the Contractor can group multiple, continuous pipe segments together as one lining. The Contractor shall provide written plan of how all lining and lateral re-instatements will be completed within allowable timeframe for review and approval by the County.

The Contractor shall work continuously on every acceptable working day in accordance with GP-8.03.2 and 8.03.3 of the Standard Specifications. If work is stopped for an entire acceptable working day without notice to the Engineer, the cost of the Inspector’s time, up to a maximum of four (4) hours, for each day of stoppage shall be deducted from any monies due or to become due the Contractor under this Contract; the monthly progress payments will be adjusted each month accordingly.

The Contractor, through coordination with Inspector, will notify in writing the property owners of impending work and the approximate start and completion dates and times forty-eight (48) hours before commencement of the work. The Contractor shall inform the County’s representative three working days in advance of his planned work schedule for a given day to allow coordination between the County and customers.

During an emergency situation, as determined by the County, the Contractor shall respond with personnel and equipment on-site within four (4) hours of the Department call. If the Contractor does not respond within four (4) hours as ordered by the County, the County shall have the option to remedy the problem and to deduct the costs from any monies due or to become due the Contractor under this Contract. The Contractor shall report to the Department via phone when the emergency situation is resolved.

The County may need to have work performed during rainfall events to ensure continued service to County customers. Work performed during rain or wet conditions shall be provided as part of the existing scope of services; Contractor will not be entitled to overtime compensation for working in varying weather conditions.

**SP-07 COMPLETION OF WORK**

After work has been started, it shall be prosecuted continuously on all acceptable workdays without stoppage until the entire contract is completed. Total time for completion is One Hundred (100) consecutive calendar days. Liquidated damages in the amount of nine hundred fifty dollars ($950) per calendar day shall apply.

**SP-08 CONTRACT PERIOD**

A. This Contract is for a one hundred (100) day period commencing with the date of Notice to Proceed. Note: this period shall include adequate time for submittals, reviews and approvals, including traffic control plans, bypass pumping/piping plans, and other necessary pre-requisites to commence construction in the field.
B. The County reserves the right to terminate the contract upon notice in writing in accordance with the County Standard Specifications GP-8.

C. Further, the County reserves the right to re-bid the Contract if action as aforesaid in paragraph B is taken.

D. Prices quoted in the proposals shall remain firm for the duration of the Contract period and are not subject to escalation.

E. This contract is not a renewable contract.

**SP-09 CONTRACTOR QUALIFICATIONS**

The Contractor is to be thoroughly experienced in the construction and rehabilitation of water and sewer utility pipelines and appurtenances. The apparent low bidder may be asked to meet with the County, prior to award of contract, in order to review and confirm qualifications and appropriateness to said work.

Contractor is to be thoroughly experienced in the lining of sanitary sewer utility pipelines and appurtenances. The Department of Public Works is the only Agency responsible for determining the Contractor’s qualifications as it pertains to “thorough experience.” This determination will be partially based on the Experience & Equipment Certification form to be submitted by the Contractor.

The Contractor shall designate a Site Superintendent who shall be required to be on the job site a minimum of eighty (80%) percent of the time and must check in and out with the inspector when leaving or returning to the site.

When the Site Superintendent is not at the site location, a designated Lead Person must be on the site and this person must report to the Inspector that he/she is the person in charge. Both the Site Superintendent and the Lead Person shall have the ability to speak, read, and write English and read County drawings/diagrams and demonstrate this ability at the request of the Inspector or County personnel. All these tasks must be performed without extensive supervision required of the County’s representative or Inspector.

If the Site Superintendent or the designated Lead Person cannot demonstrate proficiency in reading, writing, and speaking the English language and the ability to read County drawings/diagrams, then either the Inspector or County personnel may shut the job site down until the Contractor provides onsite personnel with the above-indicated qualifications.

Under these circumstances, the County shall be held harmless for any claims from the Contractor for additional time extensions or costs due to lost productivity/crew downtime.

Before the start of the contract, the Contractor shall be required to submit to the County a document designating the Site Superintendent and Lead Person, each with a minimum of
five (5) years of relevant work history and reference.

The Site Superintendent shall be required to have a minimum of five (5) years’ utility construction experience, with at least two years of that experience in a field management position. His work history shall include three (3) CIPP lining projects of similar scope. The Lead Person must have a minimum of five (5) years’ utility construction experience renewing, replacing, and relining sewer mains and laterals. This information must be submitted with the Experience and Equipment Certification, when requested by the County. The County has the right to interview the proposed candidates and reject individuals who do not meet the qualifications or who lack the necessary knowledge to perform the duties. Lead Person or Site Superintendent shall possess a valid green card certification by the State of Maryland Department of the Environment (MDE) in Erosion and Sediment Control for Utility Construction.

The Contractor is required to have a representative on site at all times who is trained and certified by NASSCO (National Association of Sewer Service Companies) in accordance with their Pipeline Assessment & Certification Program (PACP). NASSCO certificates are to be submitted with the Experience and Equipment Certification, when requested by the County.

**SP-10 SPECIFIC REQUIREMENTS**

**A. General**

Prior to the start of construction at each site, traffic and sediment control measures must be in place, and the location of construction must be given to DPW on a daily basis (Mackay Kirkley @ 410-222-6023). The Contractor must abide by all Maryland OSHA laws, including all trenching and confined space regulations.

During construction, interruptions in sewer service will be kept to a minimum. The maximum permitted interruption will be eight (8) hours during low flow or off-peak hours as determined by the County. Contractor shall monitor and make provisions to prevent sewer backup to residents and businesses. No overnight interruption of house sewer service will be allowed. The work performed under the terms of the contract shall be guaranteed for a two-year period. At the end of the two-year warranty period, the Contractor shall CCTV the locations lined under this contract with a County representative present.

**B. Permits**

Contractor shall notify all public and private agencies that may be affected by the work, including Miss Utility (1-800-257-7777), prior to starting work. Permits from the Maryland State Highway Administration (MSHA) will be obtained and paid for at the MSHA Annapolis Office by the Contractor for work performed within MSHA rights-of-way. Any permits required for work in County roads will be the responsibility of the Contractor. The County has not acquired or initiated any permits for this project prior to bid period. Any additional required permits necessary for this work shall be procured by the Contractor and shall be included in the base bid for this contract.
C. **Use of Hydrants**

The County will make available at the meter shop in Millersville, Maryland, a water meter with backflow preventer, and the Contractor shall transport the water from the hydrant to the site. A deposit of approximately $1,000 for the meter may be required and shall be paid by the Contractor and considered as incidental to the work. The meter will be returned promptly to the County at the completion of the contract. Use of water by the Contractor for the purposes of this contract will not be charged by the County. The County has not reviewed the jobsite in order to determine the closest hydrant in proximity to the project site. County makes no commitment to the Contractor regarding the availability or proximity of water; some areas of the County may have sewer service, but no water service nearby. If no water service or hydrants are readily available for the Contractor’s use, the Contractor shall transport water to the jobsite as necessary to complete the task at no additional cost to the County. Contractor may not attach to a private fire hydrant.

D. **Measurements**

The Contractor shall be required to make all necessary and required measurements for the proper installation and fit of all work under this Contract, and the Contractor shall assume all responsibility for the accuracy of the measurements.

E. **Clean-Up**

The Contractor shall completely remove from the job site all debris in a workmanlike manner on a daily basis. All dirt, debris, rubbish, and surplus materials removed from the job site shall remain the property of the Contractor.

F. **Compatibility**

It is the responsibility of the Contractor to verify that all materials that are furnished and installed are compatible with the existing sanitary sewer mains effluent and are acceptable for the purpose intended.

G. **Precautions**

The Contractor shall take all necessary precautions against fire and other hazards during work, delivery, storage, and testing of materials. Local ordinances and fire regulations shall be complied with regarding all work under this Contract.

H. **Work Hours**

The Contractor shall restrict his work to the regular County office hours of 7:00 a.m. to 3:30 p.m. Monday through Friday. No lining will be allowed on Fridays.
I. **Maintenance of Traffic**

A Traffic Control Plan (TCP) for the lining work has been provided as part of the contract documents. If the contractor chooses to modify this plan or to develop an alternate plan, he shall be responsible for producing and executing, at his/her expense, the TCP. The TCP shall cover items such as hours of operation, lane closures, signing, pavement marking, methods and devices for delineation and channelization, placement and design of barriers and impact attenuators, and other items as required. Any permits required by modifications to this plan, or submission of a new plan, will be the responsibility of the contractor.

All traffic control measures must be in place prior to start of construction and shall be in accordance with Section 01410 of the Standard Specifications and these Special Provisions. Maintenance of traffic shall consist of the maintenance of both pedestrian and motor vehicle traffic during the construction of utilities under this Contract. The work involved shall consist of, but is not limited to, the furnishing of all flagmen, barricades, signs, and signals. When working in the roads, the Contractor shall comply in every respect with the provision of Anne Arundel County and, where applicable, the Maryland State Highway Administration provisions and standard details.

No work shall be performed within MSHA or County rights-of-ways on weekends, legal holidays, or days before and after legal holidays without approval from the Engineer.

Notify the appropriate agencies having jurisdiction of traffic signals in the area of construction 72 hours in advance of starting work so that detectors, conduit runs, and associated traffic equipment may be located.

Excavations made in all roadways shall be covered with steel plates when no work is being performed at the excavation. Steel plating shall meet requirements of MSHA. Provide required warning signs and remove equipment and materials a minimum of 30 feet from the edge of the existing traveled pavement during non-work periods. Steel plates shall rest on at least 12 inches of bearing edge on each side of the plate and each plate shall be secured with four pins. Edges of the plate shall be protected with temporary pavement cold mix. “Steel Plate Ahead” signs shall be provided for each steel-plate-covered excavation. The Contractor’s name and phone number shall be provided on the rear of the signs. The Contractor is responsible at all times for securing and maintaining all cuts and steel plates. When two or more steel plates are used, the Contractor shall brace them to prevent collapse due to traffic loads.

Equipment and materials will not be allowed to remain in the median of a divided highway when not in use. Private automobiles and nonessential vehicles shall not be parked in the right-of-way. Vehicles shall not be parked in a manner that will impede traffic or impair sight distance. Mud and debris tracked or spilled on the roadway shall be promptly removed. Precautions shall be taken, particularly in freezing temperatures, to keep water off the traveled roadway. Equipment and material or their placement that may mar the roadway or surfaced shoulder shall not be placed thereon without surface protection.
Two-way vehicular traffic shall be maintained on all roads at all times with complete plating of any excavation during non-work periods. Work along school bus routes will only be permitted between the hours of 9:00 am and 2:00 pm or as otherwise directed by the County.

The Contractor shall perform the work in a sequence that is the least disruptive to the normal flow of vehicular and pedestrian traffic and in a manner that will protect the public from damage to person and property within the limits of and for the duration of the Contract. The Contractor shall cause the least amount of inconvenience with regard to ingress and egress to commercial and private properties. Where commercial properties have more than one entrance to the establishment, the Contractor may close one entrance at a time, providing that the first closed entrance is fully completed and opened to traffic prior to commencement of work in the second entrance, and prior notice has been given to the owner at least one week in advance. At locations where only one entrance exists, the Contractor shall confine his work to not more than one-half (½) of the entrance to completion before work continues through the remainder of the entrance. Sidewalk access and access to residences shall be maintained at all times, including ADA access.

Cuts in roadway, surfaced shoulders, and curbs shall be vertical. If the edge of the trench is within ten (10) feet of construction joint, the concrete shall be removed to the joint. Excavations located within paved sections and shoulder area shall be backfilled in accordance with Section 02250.

Road repair and restoration shall be in accordance with Section 02250 (flowable fill/flyash is not permitted to be used as backfill) and, when required, approved concrete accelerators shall be used in proportion necessary to obtain 350 pounds per square inch (psi) split tensile strength in 12 to 16 hours. Existing roadway pavement shall be saw cut full depth when making cutbacks to undisturbed soils material for permanent repair. Saw cut overlap at patch corners shall be filled with crackfiller meeting the requirements of AASHTO M115.

The Contractor shall not obstruct sidewalks and driveways with his equipment or material during non-work hours. Work performed in public rights-of-way shall be properly marked and barricaded. No work site shall be left unattended, unboarded, or unplated overnight, during weekends, while Contractor's work crews are on meal break, and whenever no work is being performed at the excavation. The Contractor shall maintain the site in a neat and orderly condition throughout the period of work and after completing the work at each site, remove debris, surplus material, and temporary structures erected by the Contractor. The Contractor shall restore the site, including permanent repaving, to a condition equal to or better than that existing prior to being disturbed to the satisfaction of the Engineer.

On heavily traveled County roads, Anne Arundel County shall be notified at least forty-eight (48) hours prior to beginning any work in order to schedule a field inspection of the traffic control devices. All construction and materials for the traffic control devices shall be in accordance with the standards contained in the Manual on Uniform Traffic Control Devices. Vehicular traffic shall be maintained at all times with no type of ingress or egress performed
by men or equipment that would impede traffic or interfere with the traveled roadway during peak hours of 6:00 to 9:00 a.m. and from 3:30 p.m. to 6:30 p.m. Travel lanes shall be a minimum of ten (10) feet in width. When only one lane is open, flagmen and the appropriate signing shall be provided. The roadway shall be reopened to two lanes at night. Type II barricades with warning lights shall be used to mark channelizing devices at night along the construction area. If a drop-off measures greater than 4 inches, a barrier of 2:1 slope of compacted crush-run gravel will be required. All signs that do not apply will be covered. All cones and flagmen shall be moved accordingly as construction progresses. All construction signing shall not obstruct existing Traffic Control Devices. If the road is to be closed, a detailed detour plan shall be submitted. If temporary parking restrictions will be required, the Contractor shall be responsible for installing signs and for notifying at least one day in advance all affected residents. The Contractor must contact the Engineer before any parking restrictions are enacted.

For work performed within MSHA rights-of-way, the Contractor shall adhere to the provisions of the permit that he secured from MSHA. It shall be the responsibility of the Contractor to ensure that all lights, signs, barricades, etc. are maintained in accordance with Part VI of the U.S. Department of Transportation/Federal Highway Administration Manual on Uniform Traffic Control Devices and the State Highway Administration standards, and its latest official rulings on requests.

The Contractor shall control dust on the roads, bridges, drives, and walkways on which traffic is being maintained. Watering and/or the application of calcium chloride will be required as deemed necessary by the County.

Contractor is responsible for the generation, submission, and approval of a Traffic Control Plan (TCP) thru coordination with the County and the Bureau of Engineering’s Traffic Dept 20 days prior to start of work if the TCP provided is modified or an alternate plan is used. The submission of or reference to standard MSHA details may not be sufficient to satisfy the requirements for TCP approval.

No separate measurement or payment will be made for the aforesaid work and requirements involved in maintaining traffic. The cost thereof shall be included in the unit price bid for relining sewer mains in the Proposal.

**SP-11 CONSTRUCTION SCHEDULE**

The Contractor shall submit a construction schedule prior to starting work in accordance with General Provision 8.04 of the Standard Specifications. No work shall be performed by the Contractor until the County has reviewed and approved the schedule.

**SP-12 PRE-CONSTRUCTION CONFERENCE**

After the Contract is awarded and before any work is started, the Contractor shall attend a pre-construction meeting with the County. The Contractor shall submit his Construction Schedule at this meeting.
SP-13 RELOCATION AND PROTECTION OF EXISTING UTILITIES

The Contractor shall contact Miss Utility before commencing work at any site. When crossing and/or working in the vicinity of existing utilities, including all underground pipes, conduits, and cables, the Contractor shall maintain the operation of the utilities and properly protect and/or support all existing utilities that are endangered by his operations. The cost will be taken to be included in the total contract price. Extreme care must be exercised in excavation and refill operations when working adjacent to all facilities in accordance with OSHA standards.

The Contractor will correct at his own expense any damage caused to existing utilities, the proposed utilities, and surrounding areas as a result of his operations. Any relocation or repair of utilities, including but not limited to the following, Baltimore Gas and Electric Company (BGE), Verizon, Comcast, or Bell Atlantic Telephone Company of Maryland (Bell Atlantic) facilities, when disturbed by the Contractor’s operations, shall be performed by appropriate utility company at the Contractor’s expense.

Where it becomes necessary to relocate communication, power, or other utility appurtenances or facilities or to brace its poles, and if approved by the County, this work shall be performed by the appropriate utility company at the Contractor’s expense as part of the linear foot price of pipe lined. Said utilities shall include, but not be limited to, gas & electric, fiber optics, cable TV, phone lines, and invisible fencing.

The Contractor shall be responsible for making all arrangements for such work, and no extra compensation shall be due the Contractor for making said arrangements.

SP-14 TEMPORARY DRAINAGE

In addition to all applicable requirements of the Anne Arundel County Standard Specifications, the Contractor shall conduct his work in such a manner that the efficiency of the existing surface drainage, pipe storm drain, and sanitary sewer systems will not be diminished. The Contractor shall also provide all necessary temporary drainage facilities as are required to provide drainage equal to the existing systems until the proposed work assignment is completed and accepted by Anne Arundel County.

SP-15 EROSION AND SEDIMENT CONTROL

Soil erosion and sediment controls are to be installed, as required, in accordance with the regulations as set forth in the Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas, U.S. Department of Agriculture, Soil Conservation Service, and Anne Arundel County. All measures are to be in place prior to start of construction.

Any Contractor who experiences a "stop work" order for a sediment control or grading violation will be charged the specified amount of liquidated damage per day for every day of shut down regardless of their status on the approved project schedule. Whether the Contractor finished on time, after, or prior to the schedule completion date, has no bearing on the enforcement of the provisions of this application and this clause. Receipt of "stop
work” orders for sediment control violations will be cause for termination of the contract.

The Contractor shall minimize transport of earth materials into natural water courses during construction and shall be responsible for the protection of all existing inlets from sediment runoff. The Contractor shall use approved No. 2 aggregate, silt fence, straw bales, or other device in accordance with the General Provisions and Standard Specifications, for the limits directed by the County’s representative. Approved sediment control measures shall be utilized, as necessary, for all inlets in the vicinity of the proposed construction. The Contractor shall provide temporary silt dams when pumping water from the trenches. The failure of plans to indicate required measures shall not relieve the Contractor of this responsibility. In the event sediment is carried into existing inlets, the Contractor shall be responsible for cleaning and restoring the entire drainage system affected at his own expense.

No. 2 aggregate for sediment control shall meet the material requirements for No. 2 Aggregate as described in the latest Standard Specifications for Construction and Materials by the Maryland Department of Transportation State Highway Administration. Silt fence shall be in accordance with Anne Arundel County Soil Conservation District’s (AASCD) Detail 22A “Reinforced Silt Fence” dated February 7, 2005.

Excavated materials will be removed by dump truck, not stored along side the trench. Spoils piles shall be positioned an adequate distance from trenches or excavations in accordance with General Provisions and MOSHA. No spoil material shall be placed in construction strips on the stream side of trenches in the immediate proximity of streams. Buffer strips shall be used wherever possible to protect the stream. Backfill will be made in 8-inch machine compacted lifts in accordance with the Standard Specifications. Initial lift shall be 6” and subsequent lifts in 8” increments, as needed. The method of construction in flood plains shall provide for daily protection of all disturbed areas. Any cross drainage through flood plains shall be safely channeled through disturbed areas to protect outlets.

Plastic snow fence barricade (or additional safety measures as required by AA Co., MOSHA, or SHA regulations) shall be installed, erected, and maintained by Contractor at each site location, delineating the construction work zone, in order to protect citizens. This item will not be measured or paid for separately. Its cost shall be included in the unit price for lining.

Remove existing natural or man-made earth cover only when actually ready to begin and complete the work requiring it, and restore all areas to original or better condition. All paved and unpaved roads and shoulders shall be restored and all other disturbed areas shall be sodded or seeded as soon as practical after pipe installation in accordance with these Special Provisions.

In case of repeated failures on the part of the Contractor to control erosion or siltation, the Engineer reserves the right to employ outside assistance or to use his own forces to provide the necessary corrective measures. Such incurred direct costs plus project engineering cost will be charged to the Contractor and appropriate deductions made from the Contractor’s monthly invoice.
The Contractor's attention is directed to the fact that the approval by the Soil Conservation Service for the construction of this project does not extend to off-site borrow pits or waste areas. Prior to commencing any grading operations, the Contractor shall make application for and shall secure a permit from the Anne Arundel County Department of Inspections and Permits for the operation and grading of any and all borrow pits or waste areas situated in Anne Arundel County that will be used in conjunction with this project. The permit shall include, but not be limited to, the approval of the Anne Arundel Soil Conservation District. In the event that the Contractor utilizes borrow pits or waste areas located outside of Anne Arundel County, the location of such sites shall be designated at the time of contract award and the Contractor shall be solely responsible for complying with the applicable laws and regulations of such other County or political jurisdiction. Failure to obtain the required permit shall not be a basis for authorized delay or extra payment. This item will not be measured or paid for separately. Its cost shall be included in the unit price for lining work.

Except where an item is indicated in the bid proposal form, sediment control devices or procedures shall not be measured for payment. The cost of such erosion and sediment control measures shall be included in the unit price for lining or rehabilitation work. This includes seeding, mulching, and paving of the areas disturbed during the excavation and backfilling of the pipe.

**SP-16 SITE RESTORATION**

After direction is given to proceed, the Contractor must actively pursue to completion all of the work involved at each specific job site before leaving the site and commencing work at another location. The Contractor shall immediately clean up within the public rights-of-way, private rights-of-way, and construction rights-of-way, and shall restabilize and restore shrubbery, fences, and other valuable improvements to at least the condition that existed at the beginning of construction. Temporary roadway paving restoration, including cold mix, shall be completed by the end of each working day. Weather permitting, final restoration of the sidewalk, roadway, and ground surface with topsoil, sod and/or seed, and mulch shall be completed within thirty (30) calendar days of installation.

All trenches shall be completely backfilled at the end of each work day in accordance with S-1 of the Standard Details. In the event that backfilling a trench at the end of the work day is not appropriate, as determined or directed by County Inspector, steel plates shall be used by the Contractor to fully cover trenches left open at days end. In paved roads and paved shoulders, the top 2" of the trench shall be cold patched, i.e., 12 inches shall be graded aggregate sub-base with 3-1/2" temporary CR-6 and 2" cold patch. When paving a patch, the temporary CR-6 and cold patch shall be removed and replaced with permanent paving. Unpaved roads, unpaved shoulders, driveways, sidewalks, etc., shall have 6-inches of graded aggregate sub-base bedding and as directed by the County's representative.

All work is to be kept within existing rights-of-way or easements. If the Contractor decides to obtain construction strips from individuals, the cost to do so will be at the Contractor's expense. This includes restoration of the area in conformance with the Agreement.
between the individual property owner and the Contractor. A copy of each agreement must be given to the County prior to beginning work on the property.

After the completion of backfilling, all material not used shall be removed and disposed of in a waste area for which a permit has been obtained. All roads, sidewalks, and other areas along the line of the work shall be left free of debris, swept clean, and in good order at the end of each work day. The Contractor shall clean-up without extra compensation.

The County will withhold twenty percent (20%) of the value of the Work until final restoration is complete and approved by the County. This 20% is in addition to the 10% retainage. The withheld restoration amount will not be approved for payment until said work is accomplished to the satisfaction of the Inspector, County, and affected property owners. With seven days (7) notice, the County may retain the services of another Contractor to perform restoration work. The cost for the performance of this restoration work authorized by the County and performed by others shall be at the Contractor's expense.

Except where an item is indicated in the bid proposal form, no separate measurement and payment will be made for restoration of sites. Its costs shall be included in the other several items of the proposal. The Contractor is responsible for maintaining all backfilled trenches, including the temporary trench surface, in acceptable condition at his own expense. No payment will be made for the temporary CR-6 above the graded aggregate sub base.

**SP-17 SEEDING AND SODDING REQUIREMENTS**

All grassed areas disturbed during construction shall be seeded and mulched or sodded in strict accordance with the requirements of the Anne Arundel County Soil Conservation District. Seed shall be placed on all slopes less than 3:1. Sod shall be placed on all slopes 3:1 or steeper and in areas directed by the County's representative to be sodded (existing grass lawns, roadside ditches, etc. disturbed during construction). No sod shall be installed until it has been approved for use and accepted by the County Inspector.

Topsoil shall be uniformly distributed and shall be a minimum compacted depth of 2 inches on 3:1 or steeper slopes and 4 inches on flatter slopes. Spreading shall be performed in such a manner that seeding or sodding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets. Topsoil shall not be placed while in a frozen or muddy condition, when the subgrade is excessively wet, or in a condition that may otherwise be detrimental to proper grading or proposed sodding.

Soil shall be properly prepared. Apply 5 pounds/100 square feet of Pulverized Dolomitic Limestone, or its equivalent and 2.5 pounds/100 square feet of 10-10-10 fertilizer, or its equivalent into the soil to a depth of 2-3 inches. Continue tillage until a reasonable uniform fine, firm seedbed has been prepared, on the contour where possible.
Seed shall be a combination of Kentucky No. 31 Tall Fescue applied at a rate of 1 pound/100 square feet and Sericea lespedeza (inoculated) applied at a rate of ½ pound/100 square feet. The seed shall be applied uniformly. The seedbed shall be firmed following seeding operations. Rake seed into the prepared seedbed to a depth of not more than 1/4 inch. Seeding operation shall be on the contour where possible. Immediately after seeding, uniformly mulch seeded areas with Unweathered Small Grain Straw.

Sod shall be 80 percent Kentucky No. 31 Tall Fescue and 20 percent Kentucky Bluegrass, and should have a compact root mat to assure mechanical strength and early, firm anchoring to the soil surface. Sod should be State "Approved Sod" or better. Only moist, fresh sod shall be used. Roll or tamp sod immediately following placement to ensure solid contact of root mat and soil surface. Sod shall be and staked on all slopes 3:1 or steeper.

Ninety-five percent of the jobsite must be stabilized daily.

The Contractor shall be responsible for maintaining the disturbed area until it has acquired a thick stand of grass and is completely stable to resist erosion. Sod shall be watered until moisture penetrates the soil layer beneath the sod at least 2 inches to encourage quick root growth, and optimum moisture shall be maintained for at least two weeks. Periodic inspections will be made of all seeded and sodded areas, and all failures noted shall be repaired as required. If soil moisture is deficient, adequate water will be supplied until a uniform growth has been obtained or until sod has become firmly established. The County retains the right to be the sole judge of acceptability of the grass growth or quality of sod and top soil. The County's decision will be final with no appeal being available.

All seeding and sodding shall take place between February 15 and May 1 or between August 15 and October 15. Should work be completed during a period when seeding and sodding cannot be performed, all areas will have mulch applied as specified above under seeding specifications, and this shall be maintained until seeding and sodding can be completed.

No separate payment shall be made for furnishing, placing, and maintaining topsoil, seed, and mulch. The cost for this work shall be included in the unit price for lining.

**SP-18 PERMANENT PAVING**

Patch paving shall be in accordance with the requirements of the Anne Arundel County Standard Specifications and Details, as may be directed by the County's representative in the field, and as discussed herein. State roads shall be repaired in accordance with Maryland State Highway Administration requirements. On concrete roads, when required, concrete accelerators may be used as approved by the County.

Existing roadway pavement on Non-State Highway Administration roads shall be saw cut full depth when making cut back to undisturbed soils for permanent repair. The bituminous concrete surface and base courses shall be saw cut a distance of one foot, each side of the excavated trench, whereas, the 12-inch depth graded aggregate subbase shall be placed for the width of the trench, as shown in S-1 of the Standard Details. Areas beyond
the standard cutback dimensions that require patching due to the Contractor's activities, except where directed by the County's representative, will not be measured for payment and will be repaired by the Contractor at his expense. Saw cut overlap at patch corners shall be filled with crackfiller meeting the requirements of Section 02742.02.C.3. Tack coat shall be applied to all saw cuts and in between base and surface HMA layers.

Patch paving shall be rectangular in shape with straight, neat sides. Tack coat material shall be PG-64-22 or equal and be applied in between HMA base and surface layers and to the vertical areas of existing asphalt where saw cuts are made. Neither Emulsified nor Cutback asphalt is allowed.

Clean the surface where the HMA is to be placed of foreign and loose material. Immediately before beginning paving operations, ensure that the surface is dry. Do not place tack coat unless the weather restrictions, as specified by the manufacturer, are met. In areas inaccessible to distributor spray bars, use hand spraying/rolling equipment and uniformly apply tack coat. Apply tack coat only to areas to be paved in the same day. Do not allow traffic on tack coated surfaces.

After installation and rolling of new asphalt patch, the joints around the perimeter of the patch shall be flush filled with bituminous asphalt filling material or crackfiller material. The sealer/filler shall be applied according to the manufacturer's directions and specifications. The sealer shall be poured into clean, dry joints when the temperature is at least 50°F. The sealer shall not be poured during precipitation of any kind or when the temperature can be expected to fall below 50°F within one hour after the sealer is poured. When the sealer hardens, there shall be a smooth surface with no bulges or depressions. The Contractor shall make certain that the sealer is hardened before allowing traffic to move over the area. In applying the sealer, the Contractor shall ensure that there is minimum spillover on the roadway along the saw cut. Joint sealer/filler shall conform to D3405 as modified by MSMT 404. Certified test results shall be submitted for the sealer showing that the material meets the requirements.

For non-State Highway Administration roads, paved roads and paved shoulders shall consist of the following:

- 12-inch depth graded aggregate sub-base (CR-6).
- 3-inch depth Bituminous Concrete Base Course – Hot Mix Asphalt Superpave 19.0 mm, place in one course.
- 2½-inch depth Bituminous Concrete Surface Course - Hot Mix Asphalt Superpave 9.5 mm, place in one course.

The Contractor shall provide permanent bituminous concrete restoration for State Highway Administration roads as directed by the Maryland State Highway Administration.

The Contractor shall submit mix designs for all Hot Mix Asphalt to be used on this Contract to the Department of Public Works for approval at least two (2) weeks prior to commencing work. Hot Mix Asphalt Superpave shall be used and must be MDSHA approved. MDSHA asphalt shall meet requirements of Section 901 of the latest version of the Maryland State
Highway Administration’s Standard Specification for Construction and Materials and all applicable revisions.

All trenches and permanent paving shall be warranted by the Contractor for a period of one (1) year. Any repairs to trenches and permanent paving during the warranty period shall cause the warranty period to run for one (1) additional year beyond the original one (1) year period.

Striping shall be replaced as directed by SHA and Anne Arundel County. No separate payment shall be made for striping. The cost for this work shall be included in the unit price for lining.

SP-19 CURBS AND PORTLAND CEMENT CONCRETE PAVEMENT

Installation of concrete and bituminous curbs and Portland cement concrete pavement shall consist of all work and operations necessary to replace the existing curbs and concrete pavement impacted by operations under this contract. Portland cement concrete paving includes public and private sidewalks, aprons, and driveways. Curbs and concrete pavement shall be installed according to the Standard Specifications, generally to match existing curbs and pavement, and as directed by the County's representative. Sidewalks and concrete driveways shall be Mix 2.

Where curbs or concrete pavement is within the limits of excavation, it shall be removed and replaced to obtain proper compaction underneath the structure.

Cuts in curbs and concrete paving shall be vertical. If the edge of the trench is within ten (10) feet of a construction joint, the concrete shall be removed to the joint.

SP-20 STAGING AREAS

The Contractor is responsible for obtaining, maintaining, and restoring staging areas. No staging area will be allowed in residential areas. The burden of responsibility and expense is on the Contractor to stage his project equipment, supplies, materials, trailers, etc. in commercial and industrial sites. These yards are inspected and enforced by Anne Arundel County’s Office of Planning and Zoning like any other. It is recommended the Contractor identified such a site prior to bidding so that the expense for this yard may be included in the Contractor’s line item for mobilization. The County cannot honor handshake deals with community centers, fire departments, civic clubs, etc. in residential settings.

No separate payment shall be made for staging or storage area(s). The cost for this work shall be included in the unit price for Mobilization.

SP-21 DESIGN

Reference Specifications

This specification references standard specifications which are made a part hereof by such
reference and shall be the latest edition and revisions thereof. All work accomplished must be in strict accordance with the referenced standards.

American Society for Testing and Materials (ASTM)

ASTM F-1212-91  Standard Practice for Rehabilitation of Existing Pipelines
ASTM D-638    Tensile Strength
ASTM D-790    Flexural Strength
ASTM D-790    Modulus of Elasticity
ASTM D-732    Shear Strength
ASTM D-695    Compressive Strength
ASTM F-1216   Chemical Resistance

A. Thickness

The Contractor shall calculate the recommended liner thickness for each manhole-to-manhole section. Calculations for determination of the liner thickness required shall be prepared by a licensed Professional Engineer and submitted to the County for review and approval. Each liner shall be designed to withstand internal and/or external loads as dictated by site conditions or as directed by the County. Thickness shall be based on trench loadings as they may occur in an existing piped trench for the installed depth and H20 truck loading for live load design. The submitted pipe lining method shall have sufficient structural strength to support all dead loads, live loads, and ground water loads imposed with the assumption that the existing pipe cannot share any loading or contribute to structural integrity of the liner.

The thickness to be used for submitting a Bid for this Contract shall be the largest thickness as determined by calculations for the following parameters:

- a. Thickness Required for Deflection.
- b. Thickness Required for Stiffness.
- c. Thickness Required for Ring Bending.
- d. Thickness Required for Buckling.

Thickness as determined by the largest value of a, b, c, or d above is to be used for bidding purposes. The Unit Price bid per lineal foot of Liner shall be based on the largest thickness required, as determined above.

B. Capacity

In order to maximize the capacity of the reconstructed pipe, the inside diameter must be as large as possible. As part of the Contractor’s submittal process, prior to commencement of work, the submittal shall clearly define and set expectations to the client regarding the resulting inner diameter of the pipe available to convey flow.
C. **Sizing**

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

The Contractor shall design the length of the liner to effectively carry out insertion and sealing at end points. The County will provide the grade and length of each pipe segment if such information is available. The Contractor shall verify these measurements before designing and reconstructing the pipe.

D. **Deflection Allowances**

The liner shall be designed to withstand negotiation of offsets, gaps, angles, and grades without damage to the liner during the insertion process.

E. **End Seals**

The liner shall be terminated and sealed at each end of lined segment using an engineered end solution that is appropriate for the installation based on the pressures, flows, host pipe condition and materials. Grouting only, is not an acceptable end seal method.

F. **Finish**

The finished lining shall be continuous over the entire length of an insertion run between the starting and terminating manholes and be as free as commercially practicable from visual defects. 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, and from behind the liner at manholes and service connections.

The liner, when installation is completed, shall conform tightly to the wall of the existing pipe with absolutely no annular space between the liner and the wall of the existing sewer pipe.

Any defects that will affect, as determined by the County, the integrity or strength of the lining shall be repaired or the liner replaced at the Contractor’s expense.

**SP-22 MATERIALS AND TECHNICAL REQUIREMENTS**

A. **General**

The liner shall be constructed of a material which, when installed, shall provide a structurally sound liner able to withstand all imposed static, dynamic, and hydrostatic loads. The liner shall be fabricated from materials which will be chemically resistant to internal exposure of sewage containing normal levels of hydrogen sulfide, carbon monoxide, carbon dioxide, methane, traces of mercaptans, kerosene, naphthalene, methylene chloride, trichloroethylene, gasoline and dilute sulfuric acid. The materials must also withstand saturation with moisture and external exposure to soil bacteria and any chemical
attack that may be due to materials in the surrounding ground. Projected changes in the ground water level, temperature, and other loading factors shall cause no significant changes in the service characteristics or service life of the reconstructed pipe. In the event of unsuitable chemical residue remaining on the pipe walls after cleaning, the Contractor shall either provide a material resistant to those residues or a neutralizing barrier material so that the chemical does not have a deleterious effect on the liner.

The liner material used shall be able to inhibit the penetration of tree roots into the sewer main.

All materials used in the reconstruction process shall be of their best respective kinds and to the satisfaction of the County. Any materials not approved by the County used in the reconstruction may be rejected by the County. These rejected materials shall then be replaced with approved materials at the Contractor’s expense.

The Contractor shall obtain and transfer to the County a warranty from the liner manufacturer to the effect that the liner has been manufactured specifically for the purpose of lining a sewer pipe and that the design life of the liner materials is fifty (50) years under the conditions normally in existence in a sewer pipe containing domestic sewage.

The apparent low bidder shall submit within ten (10) calendar days of bid opening, a Letter of Certification from the Liner Manufacturer in which all mechanical properties of the liner material to be used for design calculations shall be certified. The mechanical properties to be certified shall include, as a minimum, the following:

<table>
<thead>
<tr>
<th>Property</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength (psi)</td>
<td>ASTM D-638</td>
</tr>
<tr>
<td>Flexural Modulus of Elasticity (psi)</td>
<td>ASTM D-790</td>
</tr>
<tr>
<td>Flexural Strength (psi)</td>
<td>ASTM D-790</td>
</tr>
</tbody>
</table>

The pipe design shall have sufficient structural strength for the entire 50-year design life to support all dead loads, live loads, and groundwater loads imposed. The design shall not rely on the host pipe for structural integrity. The pipe shall be designed to withstand operating pressures, have sufficient strength to bridge missing pipe, and stretch to fit irregular pipe sections. If the host pipe is in disrepair and unsuitable for lining, the County and Contractor will collaboratively determine the best method of pipe rehabilitation.

Cured-in-Place Pipe Lining

Cured-in-Place Pipe Lining material shall be a general purpose, unsaturated, polyester resin and catalyst system compatible with the reconstruction inversion process that provides a minimum Tensile Strength of 2,500 psi as detailed in ASTM D-638, a minimum Flexural Modulus of Elasticity of 250,000 psi as detailed in ASTM D-790, and a minimum Flexural Strength of 4,500 psi as detailed in ASTM D-790.
Resin

The resin system shall consist of a two-part epoxy resin that when cured will conform to the ASTM F1216-05 physical characteristics. The resin shall meet the ASTM F1216-05 chemical resistance requirements. The resin, when cured, shall be consistent with the felt liner and conform to the existing pipe without gaps, voids, or annular spaces.

B. Television Inspection

Contractor shall conduct an internal inspection of designated sewers using a digital-based closed circuit television camera. The resulting high quality video image shall be a signal suitable for visual inspection using adequate lighting, regular lens cleaning, and appropriate speed as necessary to determine the condition of the pipe. The Contractor shall television and videotape clean pipe (“before lining”) and lined pipe (“after lining”).

The television camera shall be moved through the sewer line at a rate not to exceed 30 feet per minute (fpm). Where deficiencies and leaks are noted, the camera shall be stopped to observe the condition and record information. 360 degree panning shall be performed at all manholes and any other specific location as directed by the County.

Inspection equipment and software used by Contractor must be compliant with NASSCO (National Association of Sewer Service Companies) coding.

The Contractor shall provide a television inspection log that contains sufficient information to populate the County’s inspection log and computer systems. Coordination between the Contractor’s information collection system and the County’s shall be included as part of this contract. It will include identification of the section of pipe and size of the pipe. Records shall include location of reference points, point of entry of service connections via the clock system, observed running service connections, bad joints, dips in pipes, and other evidence or indications of potential problems.

The coding used on reports or logs shall be coordinated with the County’s pipe classification and condition assessment designations. All reports or logs shall display and include a legend that defines the coding used.

Collected data shall be provided to the County in both hard copy and digital format (DVD or data file). VHS tapes or other analog forms of data will not be accepted by the County. No hand written records will be accepted.

i. Data collected shall be neatly compiled in a 3-ring binder and shall include the following information at a minimum:

1. Title page giving name and location of project, project number, contract number, General Contractor (name address and phone number), and date.
2. Table of Contents.
3. Tabbed index dividers for each section.
4. Tabular summary list of all work completed in the project.
5. All work orders given to the Contractor by the County. Identify on the work orders those completed or not. If a work order was not completed, as approved by the County, provide the reason on the work order.
6. TV logs in both Pipe Graphic Report form and tabular form.
7. DVDs containing TV videotapes placed in binder sleeves. Provide index to clearly identify what each disc contains.
8. Digital still picture of major pipe defects such as broken pipes, large I/I sources, sever offset joints, etc.

At the County’s request, within a four (4) hour timeframe on the same business day, the Contractor shall respond with a TV’ing Crew and all appropriate equipment to televise sanitary sewer lines up to twenty four (24) inches in diameter.

Television inspection and reports/logs must be done in accordance with NASSCO requirements. In order to ensure compatibility with the County’s RJN CassWorks Software, the following requirements must be met:

1) Firms must be NASSCO certified
2) TV Inspection Software must be NASSCO and PACP certified.

The Contractor, within ten (10) days of contract award, shall demonstrate compatibility by supplying to the County sample data to verify conversion capabilities.

The Contractor shall bear all responsibility to ensure access for his vehicles, equipment and manpower. It is his responsibility to accurately measure the length of liner required.

**SP-23 RECONSTRUCTION PROCESS**

The following procedures shall be adhered to unless otherwise approved by the County prior to notice-to-proceed. The Contractor shall provide full restoration of areas affected by construction. All costs associated with such restoration shall be included in the bid Item for that major item of work.

**A. Cleaning and Television Inspection of Sewer Line**

It shall be the responsibility of the Contractor to clean debris out of the sewer line in accordance with the National Association of Sewer Service Companies (NASSCO) Specifications for Sewer Collection System Maintenance and Rehabilitation prior to the television inspection and subsequent reconstruction.

The Contractor shall include cost for hydraulically propelled, high-velocity jet (hydrocleaning), and mechanically powered cleaning methods in the per foot base bid items for Sanitary Sewer Lining, Bid Items 2 and 3. No additional payment will be made to the Contractor for mechanical cleaning required for root removal. Selection of the equipment used shall be determined by the Contractor and be based on the conditions of
lines at the time work commences. The equipment and methods selected shall be satisfactory to the Owner or project engineer. The equipment shall be capable of removing dirt, grease, rocks, sand, roots, and other materials and obstructions from the sewer lines and manholes. If cleaning of an entire section cannot be successfully performed from one manhole, the equipment shall be set up on the other manhole and cleaning again attempted. If the Contractor cleans the pipe then leaves the site and returns at a later date to complete, any additional cleaning required prior to lining shall be considered incidental and be performed at no additional cost to the Owner.

As defined by NASSCO, cleaning methods are as follows:

Hydraulically Propelled Equipment: The equipment used shall be of a movable dam type and be constructed in such a way that a portion of the dam may be collapsed at any time during the cleaning operation to protect against flooding of the sewer. The movable dam shall be equal in diameter to the pipe being cleaned and shall provide a flexible scraper around the outer periphery to insure removal of grease. If sewer cleaning balls or other equipment which cannot be collapsed is used, special precautions to prevent flooding of the sewers and public or private property shall be taken.

High-Velocity Jet (Hydrocleaning) Equipment: All high-velocity sewer cleaning equipment shall be constructed for ease and safety of operation. The equipment shall have a selection of two or more high-velocity nozzles. The nozzles shall be capable of producing a scouring action from 15 to 45 degrees in all size lines designated to be cleaned. Equipment shall also include a high-velocity gun for washing and scouring manhole walls and floor. The gun shall be capable of producing flows from a fine spray to a solid stream. The equipment shall carry its own water tank, auxiliary engines, pumps, and hydraulically driven hose reel. The NASSCO Jetter Code of Practice shall be consulted as a guide for the selection of different type nozzles and recommended pressure applications for various cleaning requirements.

Mechanically Powered Equipment: Mechanically powered equipment for cleaning and root removal shall be spiral saw type, chain cutter type, or as approved by the Engineer. Bucket machines and power rodding machines will not be allowed.

All equipment used for cleaning operations shall be equipment designed to do that type of work which is specified. When at all possible, the equipment shall be a self-contained unit to handle all operations.

Upon completion of the cleaning operations, the Contractor shall clean all debris out of the manhole and from the ground around the manhole. The Contractor shall dispose of all debris in a sanitary landfill or other approved method of disposal. The Contractor shall protect downstream facilities from debris.

Cleaning will be done in a careful manner as to not damage the existing pipe. All damage to the sewer pipe structure flow characteristics due to the cleaning process shall be repaired by the Contractor at his expense.
If there is no manhole in the vicinity where the cleaning process is to commence, the Contractor shall excavate and provide adequate access to the pipe in order to carry out the required task. This work shall be performed at no additional cost to the County.

The Contractor shall televisethe sewer after the completion of the cleaning operations to determine the location of any conditions that may prevent proper liner installation. No relining shall be performed until the County has reviewed and approved the sewer to be lined. Lining shall be performed immediately following the pre-television operation and subsequent County approval.

The Contractor shall also clean all debris from the sewer prior to the performance of the post-construction television inspection.

Both the pre- and post-television inspection DVDs and logs shall be submitted to the County for final acceptance using software compliant with the County’s NASSCO coding requirement. Examples are: Flexidata, POSM, Pipetech, Granite, & DataCap 4.0.

This work shall be considered as part of the lining items in the Contractor’s proposal form.

B. Point Repairs / Line Obstructions

It shall be the responsibility of the Contractor to clear the line of obstructions, solids, dropped joints, protruding services, or collapsed pipe that will prevent the lining of the sewer line. If inspection reveals an obstruction (a badly dropped or misaligned joint, or service protrusion) that cannot be removed by conventional sewer cleaning equipment, the Contractor shall remove or repair the obstruction. The Contractor must have the equipment, experience, and labor available to make such repairs. It is the County’s intent to minimize point repair excavations to uncover and remove or repair the obstruction. The County encourages the use of remote or trenchless techniques wherever possible, such as remote trenchless internal protrusion removal equipment. The Contractor shall be solely responsible to make all repairs to existing facilities in order to allow for the satisfactory installation of his liner. The County takes no responsibility for stuck equipment.

When required and as authorized by the Owner, this work shall be paid through the allowance amount established in Contingent Item No. C.04 in the Contractor’s proposal form. The Contractor will submit a proposal prior to performing the work for approval by the County. Payment for this item will be on a time and material basis for work performed.

C. Bypassing Sewage

The Contractor shall bypass the sewage around the segment of the line to be reconstructed. The bypass shall be made by plugging an existing upstream manhole, if necessary, and pumping the sewage into a downstream manhole or adjacent system. The pump and bypass lines shall be of adequate capacity and size to handle the flow. In situations where bypass is not feasible, the Contractor, at no additional cost, shall provide tankers and/or vactor trucks as necessary to control sewage flows during rehabilitation.
The Contractor shall submit a plan to bypass the sections of line that are to be reconstructed for approval by the County three (3) weeks prior to beginning the reconstruction. The Contractor shall maintain back-up equipment in the form of spare pump(s) and other incidental equipment in order to ensure no interruption to the bypass operation in the event of equipment failure. The Contractor shall demonstrate to the County that this spare equipment is operable and capable of maintaining the bypass.

The Contractor shall not use flexible pipe as part of the bypass operation, except when authorized by the Engineer.

This work shall be considered as part of the lining bid items in the Contractor’s proposal form. No additional costs will be granted to the Contractor associated with the bypass piping or pumping, unless directed by the Engineer. As part of the site investigation, the Contractor shall evaluate and pre-plan the anticipated routing of bypass piping for this contract, recognizing that the lineal feet of required bypass piping may exceed the lineal feet of the sewer main to be lined.

Under no circumstances will the dumping of raw sewage on private property or on County or State roads be allowed.

The bypass system shall be tested and continuously monitored by the Contractor to ensure the system is operating as intended and leak-free. The Contractor shall report any sewage spills to the appropriate County and State agencies.

All provisions for the installation of bypass shall be considered as included in the base bid for this contract. Road, sidewalk, parking lot, and/or stream crossings (minor and major) shall be anticipated and included in the base bid. Contractor shall plan for these crossings and include appropriate bends, excavation, additional length of pipe and other appurtenances as required to successfully bypass line sections as acceptable to the County.

D. Installation

The liner shall be installed in accordance with the Liner Manufacturer’s recommended installation procedure and ASTM F1216 Section 7 or ASTM F1743 Section 6. The installation procedure shall be submitted by the apparent low bidder to the County for review no later than ten (10) calendar days after the bid opening. The installation procedure shall give a detailed description of all work and materials required for the liner installation. The description shall include, as a minimum, a detailed description of the following:

a. The work and material required to accomplish all required point repairs.

b. The work and material required to accomplish bypass pumping.

c. The work and material required to insert the liner into the existing sanitary sewer through an existing manhole or excavation. If the proposed method of inserting the liner requires the modification of a manhole, the cost to modify
and repair the manhole shall be included in the unit price bid for the actual lineal foot of structural rehabilitation liner installed. If the proposed method of inserting the liner requires excavation, a sketch of excavation must be provided and the cost to perform such work shall be included in the unit price bid line item for the lineal foot of pipe to be rehabilitated.

d. The work and material required to reform the liner until it fully forms within the existing pipe. The equipment shall be able to provide the temperatures and pressures required and as specified by the manufacturer to fully form the liner. The pressures and temperatures shall be monitored at each manhole where the liner is being formed to ensure that the recommended pressures and temperatures are available to fully form the liner over the entire length of the liner run.

e. The work and material to cool the liner (and relieve the pressure) and the recommended time to maintain the temperatures and pressures to fully form the liner.

f. The work and material required to reestablish service laterals.

g. Construction method used at bends in pipe shall permit full inner diameter (ID) of pipe liner to be maintained. If lining through the bends is not feasible to meet this requirement or if subsequent video inspection (by the Contractor) determines that there is buckling, folds or wrinkles in the liner, the Contractor shall be responsible for excavating and replacing the pipe segments as part of the Sanitary Sewer Lining, Bid Items 2 and 3 in the Contractor's proposal form.

The County will not reimburse the Contractor for any unused or defective liner.

Ultra violet cured lining products are acceptable for this item of work.

E. Sealing Liner at Manholes

Liners shall be sealed where the liner enters and exits each manhole. The annular space shall be sealed for a distance of at least one pipe diameter inside the host pipe. Foam sealant should not protrude into the manhole and should be finished over with a quick-set, non-shrink cement grout. Finishing inside the manhole shall be accomplished using a quick-set cement type grout to raise the manhole trough to the invert of the liner pipe. The entire surface of the trough shall be raised from the invert to the bench. Only the upstream seal should be made prior to connecting services.

F. Failure of Structural Rehabilitation Liner

If the liner fails to form, the Contractor shall be required to remove the failed liner at no additional cost, and shall include all material, excavation, backfilling, cutting, concrete, bracing, pipe shoring, temporary pavement, permanent pavement, and any other incidental
work required to remove the liner from the existing pipe. There shall be no direct payment for this work. The Contractor shall be required to repair the existing pipe to a satisfactory condition before a second attempt is made to insert the structural rehabilitation liner. No additional bypass costs will be paid.

Corrections of failed new pipe or new pipe deemed unacceptable, as a result of the post video inspection, and/or test reports for structural values, thickness, chemical resistance, etc., shall always be the responsibility of the installer, at no extra cost to the Owner. Method of correction/repair shall be approved by the Engineer with prior field demonstration, if required. It shall be understood that minimum criteria of the specification shall not be lowered to compromise with lower than the required values, unless approved in writing.

Wrinkle & Fin Evaluation

Wrinkles and fins, in a CIPP, are a function of the host pipe’s variability in circumference along the reach of sewer that is being lined and the head pressure used by the installation team during installation of the CIPP. The generally accepted maximum height of a wrinkle or fin, in a CIPP, is 5% of the host pipe inside diameter. Wrinkle/fin material should be fully cured and solid throughout.

Wrinkles outside the flow line:

- Wrinkles/fins in height up to a maximum of 5% of the inside diameter of the host pipe, may be deemed acceptable by the Owner.

- Wrinkles/fins over 5%, particularly those of a longitudinal configuration, must be evaluated by the Engineer for acceptance, on a case by case basis. If the Owner or Engineer deems the wrinkles/fins are unacceptable and repair is required, the Contractor must repair at no additional cost to the County.

Wrinkles in the flow line:

- Wrinkles/fins projecting more than 5% into the flow that are generally longitudinal in their orientation may be deemed acceptable by the Owner or Engineer on a case by case basis by considering any potential operation and maintenance issues that would result from their being left in place. If the Owner or Engineer deems the wrinkles/fins are unacceptable and repair is required, the Contractor must repair at no additional cost to the Owner.

- Wrinkles/fins in the lower third (flow line) of the finished CIPP (based upon the depth of flow) that are generally circumferential in their orientation shall not exceed 3% of the host pipe I.D. or 0.5-inches, whichever is smaller. Acceptability of larger wrinkles/fins meeting this characterization shall be on a case by case basis by the Owner or Engineer with consideration given to potential operations and maintenance issues that would result from their being left in place. If the Owner or
Engineer deems the wrinkles/fins are unacceptable and repair is required, the Contractor must repair at no additional cost to the Owner.

**Repair when wrinkles/fins are removed:**

When wrinkles/fins are removed from the installed CIPP, the pipe wall should be fully cured and homogeneous and no further repair is required. If a repair is required, the manufacturer should be contacted and shall provide the recommended repair procedure. The Contractor shall make necessary repairs at no additional cost to the Owner.

To minimize wrinkles/fins, it is essential that the correct size liner be used for each pipe section. **The Contractor shall field measure all pipe to be lined prior to ordering of liner material.** Tapered liners are not required. Pipe shall be measured at the manhole of the pipe section to be lined. These measurements should be provided to the liner manufacturer so that the proper liner size is supplied. The Contractor shall submit a spreadsheet to the County showing pipe size for each segment and liner size being ordered for each segment. Spreadsheet shall be included in liner submittal.

**G. Lateral Reconnection**

After the structural rehabilitation liner has been installed, each existing active lateral connection shall be opened through the liner. The laterals shall be reconnected to provide a capacity not less than 90 percent. The opening shall generally be made without excavation from the interior of the pipeline by means of a television camera-directed cutting device. Where holes are cut through the liner, they shall be neat and smooth in order to prevent blockage at the service connections. All cut edges shall be completely free of all burrs frayed edges or other protrusions. All coupons must be captured and removed from the pipeline. The County Inspector will count coupons for each segment to confirm all are captured. Contractor shall have minimum of two (2) complete and functioning lateral cutters (including spare parts) on the jobsite before each installation or within a one hour travel radius of the jobsite.

In the event that an active service connection is missed, it shall be the Contractor's responsibility to reconnect said service with no additional payment above the unit price bid for reconnecting service laterals.

The cost of reconnecting service laterals shall be in accordance with the unit price for Bid Item 4: Re-Establish Existing Service or other Laterals.

If the Contractor must excavate to reconnect lateral service connections, the Contractor shall bear all costs for the work, including but not limited to material, excavation, backfilling, temporary pavement, permanent pavement, and any other incidental work required to restore service lateral connections back to service. No direct payment shall be made for the work described in this paragraph. Cost shall be included in the unit price bid for reconnecting service laterals.
The Contractor will notify the property owners of impending work and the approximate start and completion dates and times at least forty-eight (48) hours before commencement of the work. A notification form shall be attached to the front door of each home or building for which laterals will be reconnected. This notification to the occupant shall state that the lateral servicing this listed address will be reconnected as part of the lining process. The occupant will be directed to contact Anne Arundel County Department of Public Works if any blockage of sanitary flow occurs.

H. Manhole Rehabilitation

**MONOLITHIC LINER IN MANHOLES**

When directed by the Department of Public Works, the Contractor shall install one of the following materials in the manholes listed in Appendix F. The use of each of these methods is based upon the integrity of the manhole and the method will be as directed by the Department of Public Works. For each of the three methods described below, all materials, labor, equipment, and incidentals required for bypassing, correcting inflow and infiltration conditions, cleaning/surface preparation, patching, removing, and replacing manhole steps, etc. will be considered incidental to rehabilitation and will not be paid any additional compensation.

The following Submittals are required of the installer to be submitted to the Engineer. This Contract shall not be considered complete until receipt and acceptance of the following:

A. Contractor certification.
B. Material certification.
C. Product data.

1. **Permaform**: This is an internal forming system for placing new concrete 3-inches thick within the existing manhole structure, upon with a plastic liner is cast integrally onto the surface of the new concrete. This will form an impermeable barrier for corrosion protection of the manhole.

   A. Concrete shall be Type I Portland cement mix with a 5/8” coarse aggregate producing a minimum 4,000 PSI compressive strength at full cure.
   B. A high-strength, quick setting cement grout shall be used for positioning and sealing the form at the manhole base and for maintaining active flows.
   C. The plastic liner shall be a white, ribbed or studded high-polymer vinyl chloride sheeting that is capable of being cast into the new concrete. The liner shall have a minimum thickness of 65 mils, and shall be capable of resisting strong acid, alkaline and salt solutions. The liner shall be Amer-Plate 95Y T-Lock.

**Installation**

Install in accordance with the manufacturer’s recommendations.
**Preparation:** The Contractor shall employ adequate cleaning to remove loose material and debris from the manhole. Existing steps which might interfere with the erection of the forms shall be removed. Precautions shall be taken to prevent foreign material from entering the active lines. Infiltration which may adversely affect placement of the concrete shall be eliminated or reduced to an acceptable level.

**Equipment:** Segmented, stackable steel forms shall be bolted together in cylindrical and conical sections with either eccentric or concentric cones or flat top ceilings and conform generally to the interior shape of the existing manhole.

**Installation procedure:**

A. Pipe extensions shall be placed through the new concrete wall at the base and at higher points of entry, such as drop inlets, to maintain flows during the procedure.

B. The form shall be sized and erected to conform to the existing interior dimensions and shape. The space between the forms and the existing wall shall be of a sufficient thickness, minimum of 3 inches. The finished opening shall have a minimum diameter of 20 inches.

C. The form shall be positioned, sealed, and finished at the manhole base to ensure concrete does not enter the sewer.

D. The concrete shall be carefully placed from the bottom up in such a manner as to prevent segregation of the cement and aggregate. The concrete shall be consolidated to fill all pockets, seams, and cracks within the existing wall.

E. When the concrete has sufficiently cured to preclude slump or damage, the form shall be disassembled and removed.

F. The plastic shall be fitted securely to the exterior of the steel forms during their erection within the manhole. When the forms are removed, any joints in the liner shall be welded and tested.

G. The bench shall receive an overlay of concrete or MS-10,000 as directed by the engineer at a thickness of three inches at the wall tapering to 1/2" at the edge of the invert channel. For corrosion resistance, the bench shall receive a coating of COR+GARD® 100% solids epoxy.

Prior to the overlay, a hydrophyllic sealing strip shall be placed around the circumference of the bench where it meets the vertical wall and around all pipe penetrations to form a water stop.
H. At the frame and cover, the plastic lining may be folded under the frame and reset with butyl mastic.

- OR -
The plastic liner may extend 1/4" above the finished concrete at which time COR+GARD® epoxy is poured into such space against the plastic liner to seal any exposed concrete.

- OR -
A flexible chimney seal may be attached or applied to the upper 3" portion of the plastic liner and the lower 3" portion of the prepared frame.

I. Sealing at all pipe penetration shall be accomplished using one of the following procedures:

a. If the penetrating pipe is PVC and the liner is PVC or if the penetrating pipe is PE and the liner is PE, a fusion or extrude weld shall be made at their jointure with the new plastic lined wall.

b. If the penetrating pipe is clay (VCP), cast iron, ductile iron or other material, a flat square section of the plastic liner approximately 1.5 times the pipe diameter shall be fitted over the penetrating pipe and fastened with a stainless steel hose clamp. Then it shall be folded back over the hose clamp and flush with the plastic liner embedded into the wall. A weld strip or an extrude bead shall be welded along each edge of this flashing.

**Finish:** The resultant concrete interior wall shall be smooth and free of honeycomb and areas of segregated aggregate.
Approved Installers

The Contractor must be certified by AP/M Permaform to install the Permaform system. The Contractor shall provide documentation verifying that they are Certified Applicators.

Warranty

The installation Contractor shall warrant the installation for a period of two years from Conditional Acceptance by the Owner.

2. **SEWPERCOAT® 2000 HS**: Sewpercoat® is made of 100% calcium aluminate cement and is a pre-packaged fiber reinforced, high strength wet shotcrete material. This product does not contain crystalline silica. Application thickness shall be in 1/2"-3/4" lifts to reach the original manhole wall thickness + 1/8" for additional manhole protection.
Technical Data for SEWPERCOAT® 2000 HS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressive Strength (ASTM C109)</td>
<td>&gt; 5,500 psi</td>
<td>24 hours</td>
</tr>
<tr>
<td>Flexural Strength (ASTM C293)</td>
<td>&gt; 1,200 psi</td>
<td>24 hours</td>
</tr>
<tr>
<td>Splitting Tensile Strength (ASTM C496)</td>
<td>&gt; 800 psi</td>
<td>24 hours</td>
</tr>
<tr>
<td>Slant Shear test (ASTM C882)</td>
<td>&gt; 1,200 psi</td>
<td>24 hours</td>
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<tr>
<td>Shrinkage at 28 days (ASTM C596)</td>
<td>&lt; 0.08% cured @ 90% relative humidity</td>
<td></td>
</tr>
<tr>
<td>Freeze/Thaw after 300 Cycles (ASTM C666)</td>
<td>No visible damage after 300 cycles</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sieve Analysis</th>
<th>Min (% retained)</th>
<th>Max (% retained)</th>
</tr>
</thead>
<tbody>
<tr>
<td># 4 (4.75 mm)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td># 8 (2.36 mm)</td>
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<td>12</td>
</tr>
<tr>
<td># 16 (1.18 mm)</td>
<td>23</td>
<td>46</td>
</tr>
<tr>
<td># 30 (600 µm)</td>
<td>40</td>
<td>65</td>
</tr>
<tr>
<td># 50 (300 µm)</td>
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<td>72</td>
</tr>
<tr>
<td># 100 (150 µm)</td>
<td>57</td>
<td>76</td>
</tr>
<tr>
<td># 200 (75 µm)</td>
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<td>79</td>
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<tr>
<td>Pan (passing #200)</td>
<td>20</td>
<td>40</td>
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</table>

Biogenic Corrosion Resistance: Sewpercoat® shall withstand corrosive environments containing H2S gas, which show strong Thiobacillus bacterial activity. Due to its high neutralization capacity, Sewpercoat® has been shown to locally raise the surface pH found on the surface of wastewater structures and prevents the successful colonization of the most aggressive strains of bacteria.

Chemical Composition: Sewpercoat® contains no calcium sulfate, calcium chloride, tricalcium aluminate, lime hydrates or aggressive agents that attack reinforcing steel. The high-performance properties of Sewpercoat® are achieved through a blend of mineral elements.

Installation
Sewpercoat® shall be applied according to the manufacturer’s recommendations. Clean, potable water should be used for mixing. The water requirement is provided on each individual bag and is critical to obtain the specified performance properties. Always stay within the recommended specifications for mixing water. Sewpercoat® shall be applied with dry gunite equipment.
Preparation of the surface to be coated should be performed in accordance with applicable industry standards. Sandblasting and/or hydro-demolition with high-pressure water may be used to remove existing deterioration and debris. The immediate bonding surface should be rough, damp, and free of any existing coatings, sewer residue, and running water. The structure itself should be fully saturated prior to a Sewpercoat® installation.

Sewpercoat® products are to be used as packaged. Under no circumstances should any substance other than water be added to Sewpercoat® products. Sewpercoat® shall not be used in conjunction with or adjacent to any inert or organic coatings, including but not limited to epoxy, polyurethane, polyurea, and fiberglass. Curing should be implemented as soon as the surface begins to harden and dry (as early as one hour after application). Several layers of ASTM C309 liquid membrane curing compound or a 100%-humid moisture cure shall be used.

Equipment used must always be clean and free of portland cement build-up to avoid accelerated set.

Generally accepted concreting practices (water ratio per bag, compaction, curing, etc.) should be employed to obtain the best quality installation with respect to mechanical strength and corrosion resistance.

If inflow or infiltration is observed within the structure after surface preparation is complete, a rapid setting crystalline enhanced hydraulic cement product specifically formulated for infiltration control shall be used to stop minor infiltration flows in accordance with the manufacturer’s recommendations. The material shall meet the following strength requirements:

- Compressive Strength (ASTM C597B) - 600 psi @ 24 hours; 1,000 psi @ 7 days
- Bond Strength (ASTM C321) - 30 psi @ 1 hour; 80 psi @ 1 day

The material shall be Preco Plug, Octocrete, Burke Plug, or Engineer approved equal. Where infiltration flows are more severe, pressure grouting may be required at no additional cost to the County. The material for pressure grouting shall be Avanti A-220, DeNeef, or Engineer approved equal installed in accordance with the manufacturer’s written instructions.

Approved Installers
The Contractor must be certified by Kerneos Aluminate Technologies to install the Sewpercoat system. The Contractor shall provide documentation certifying that they are Certified Applicators.

Warranty
The installation Contractor shall warranty the installation for a period of two years from conditional acceptance by the Owner. The manufacturer warranty from
Kerneos shall warranty the Sewpercoat system for a period of ten (10) years from date of installation.

3. **PerpetuWall™**: PLS-650 PerpetuWall™ is a fiberglass cloth and epoxy liner designed to protect concrete and masonry structures from corrosion and stop transmission of fluids also known as infiltration or exfiltration. When installed, the liner forms a monolithic liner that is completely bonded to the host structure. The liner conforms to the structure regardless of shape or size. The liner can be used as primary protection barrier to protect structures or as part of a secondary containment system.

**Technical Data for Infrastructure Rehabilitation PLS-650.**

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>TEST METHOD</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardness</td>
<td>ASTM D-2240</td>
<td>72 Shore D</td>
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<tr>
<td>Tensile strength</td>
<td>ASTM D-638</td>
<td>29,200 PSI</td>
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<tr>
<td>Tensile modulus</td>
<td>ASTM D-638</td>
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<td>Compressive strength</td>
<td>ASTM D-695</td>
<td>16,800 PSI</td>
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<tr>
<td>Compressive modulus</td>
<td>ASTM D-695</td>
<td>12.65 mpsi</td>
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<tr>
<td>Flexural strength</td>
<td>ASTM D-790</td>
<td>34,300 PSI</td>
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<tr>
<td>Ultimate Elongation</td>
<td>ASTM D-638</td>
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<tr>
<td>Bond</td>
<td>ASTM D-4541</td>
<td>Substrate Failure</td>
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<tr>
<td>Flexural modulus</td>
<td>ASTM D-790</td>
<td>1,590,000 PSI</td>
</tr>
<tr>
<td>Shear Strength</td>
<td>ASTM D-2344</td>
<td>4,060 PSI</td>
</tr>
</tbody>
</table>

Color: Gray
VOC: None
Cure time: Approx. 4 hours at 70 degrees F
Typical Installation Thickness: 125-180 mils

Resistant to all chemical attack from all substances typically found or permitted in municipal sanitary or storm sewer systems.

<table>
<thead>
<tr>
<th>CHEMICAL</th>
<th>Concentration*</th>
</tr>
</thead>
<tbody>
<tr>
<td>H2S</td>
<td>0.4%t</td>
</tr>
<tr>
<td>H2SO4</td>
<td>33%</td>
</tr>
<tr>
<td>Petroleum Hydrocarbons</td>
<td>100%</td>
</tr>
<tr>
<td>HNO3</td>
<td>50%</td>
</tr>
<tr>
<td>HCl</td>
<td>33%</td>
</tr>
<tr>
<td>NaOH</td>
<td>10%</td>
</tr>
<tr>
<td>Soaps / Detergents / Surfactants</td>
<td>1 %</td>
</tr>
</tbody>
</table>

*Aqueous Solution unless 100% or noted otherwise.
  * Maximum soluble in an aqueous solution
Environmental Installation Requirements

a. The ambient temperature and surface temperature must be above freezing and it is recommended the temperature be between 45º to 110º F.

b. There shall be no active infiltration. Surface moisture can be tolerated, but it should be kept to a minimum.

c. Splash from sewer flow must be controlled to prevent surface contamination. This surface contamination can result in issues with adhesion.

Surface Preparation

a. The surface shall be thoroughly cleaned with a 3000-psi pressure wash to remove all dirt, sand, grease and surface contaminants. The condition of the structure may require the use of an acidic solution and/or a detergent solution. If an acid or detergent solution is used, the surface shall be thoroughly rinsed prior to the installation of the liner system. If the structure requires removal of weak surface concrete or of the addition of a profile, sandblast the surface after initial cleaning. Rinse thoroughly after sandblasting. All large debris shall not be allowed to pass into the sewer system. All coatings must be removed from the host structure.

b. Remove all steps and unnecessary hardware from wall (unless notified by the Owner to the contrary). Stop all active leaks using Standard Cement Speed Plug or equal. If cementitious products cannot stop leaks use a hydrophilic grout to stop the leak that is designed for such purposes.

Liner Installation

a. Inspect the surface of the host structure to ensure that all leaks have been stopped, all voids have been filled, and the surface is clean.

b. A layer of PLS-61X Series Epoxy shall be applied approximately 100 mils thick by hand. The layer should be uniform and smooth. The individual conducting the installation shall determine the area of epoxy applied. At no time shall the epoxy be allowed to cure before all steps are completed. At all times a “wet” uncured edge must be maintained until installation is complete.

c. A sheet of PLS-818 or PLS-811 fiberglass (18 oz. and 11 oz. respectively) shall be cut to size and then placed on and pressed in to the first layer of epoxy. PLS-811 is preferred unless the liner needs to be excessively stiff. The County will make the determination on whether PLS-818 or PLS-811 will be used.
d. A second layer of PLS-61 X Series Epoxy shall then be applied to the top of the fiberglass cloth completely encapsulating it in epoxy.

e. To maintain a monolithic structure, only an overlap joint where the sheets of fiberglass cloth overlap each other by a minimum of 1.5 inches shall be used. The fiberglass cloth should be arranged so that an upper layer is on top of lower layers in an arrangement similar to shingles on a roof.

f. The installation shall include everything from the manhole frame down.

g. The liner shall be allowed to cure until the surface has set up and resists compression by hand before fluid is allowed to flow over the liner, this to prevent the liquid from eroding the curing epoxy.

h. The liner shall be installed without letting the edges cure. A “wet” edge shall be maintained at all times until the liner installation is complete. If a “wet” edge can not be maintained, then the existing liner shall be abraded to a rough surface and an overall overlap of 2” must be made. This dry edge process should be followed when making repairs to the liner.

i. The liner shall not be exposed to loads until properly cured, 4 hours for all loads and 24 for loads over 200 pounds (20 psi ground pressure)

Approved Installers

The Contractor must be certified by Protective Liners Systems, Inc. to install the PerpetuWall™ system. The Contractor shall provide documentation certifying that they are Certified Applicators.

Warranty

The installation Contractor shall warranty the installation for a period of two years from conditional acceptance by the Owner. The manufacturer warranty from Protective Liner Systems, Inc. shall warranty the PerpetuWall™ Liner System to stop groundwater infiltration and further deterioration of the surfaces that are lined, in normal service conditions of wastewater collection systems, for a period of five (5) years from date of installation when installed by a Certified Applicator.

I. Emergency Situations

At 3:30 p.m. on every contract day, the Contractor’s night person shall call the County (410-222-8400), providing his name and cell phone number. He shall also request that the County personnel call his cell phone so that he and they can confirm it is working.
During an emergency situation, as determined by the County, the Contractor shall respond with personnel and equipment on-site within four (4) hours of the Department call. If the Contractor does not respond within four (4) hours as ordered by the County, the County shall have the option to remedy the problem and to deduct the costs from any monies due or to become due the Contractor under this Contract. The Contractor shall report to the Department via phone when the emergency situation is resolved. For example, customer complaints concerning blockages shall be handled as follows:

- The customer calls Anne Arundel County Department of Public Works and provides his name, address, and telephone number.
- The Department of Public Works will contact the Construction Manager, who will contact the Contractor.
- The Contractor shall respond to the call with personnel and equipment on-site within four (4) hours of the Department call.
- The Contractor shall report to the Construction Manager via phone when the blockage is cleared.

**SP-24 PAYMENT**

The following refer to the pay items in the pricing schedule. These items represent the total of the work involved in this contract:

**Item 1: Mobilization**

When a Contractor has established the necessary facilities as expressed in Section 01100 Mobilization, an allowance of 50% of the lump sum price will be payable as part of the first monthly estimate. The remaining 50% will be prorated monthly over the remaining duration of the Contract. The price bid shall include all labor, materials, equipment, tools, and incidentals necessary to complete the work. Staging area use/rental is included under this item. This item will only be paid in full once.

Contractor may invoice for mobilization following the Engineer's approval and visible/substantial evidence of said mobilization to the construction jobsite. Costs to be included under this item shall be for items such as bonds, insurance, shop drawings, submittals, temporary facilities, signs, permits, and other costs and incidentals associated with initiating the Work.

The cumulative value of this bid line item shall not exceed ten (10%) percent of the total bid submitted by the Contractor.

**Items 2 and 3: 18” and 24” Sewer Main Lining**

The quantity of liner measured for payment shall be the actual number of lineal feet of liner installed, complete and approved. The quantity measured for payment shall be
measured along the centerline of the pipe being lined from the centerline of the entrance manhole to the centerline of the exit manhole. If the liner extends through an intermediate manhole, payment will include the width of the intermediate manhole.

The unit price bid shall include the cost of all labor, equipment, submittals, and materials to clean the gravity sewer mains, perform all necessary television inspections, furnish and install structural rehabilitation liner (as recommended by the manufacturer), treatment at ends, trim protruding service connections, test the complete work, provide guarantee, and any other work necessary and incidental required to complete the work as specified and as directed by the County. The lineal foot cost established as part of Bid Items no. 2 and 3 shall also include all costs associated with the necessary Traffic Control in-field, submission and approval of Traffic Control Plan(s), and bypass piping and pumping.

The unit price for Bid Items 2 and 3 includes cleaning by hydraulically propelled, high-velocity jet (hydrocleaning), and mechanically powered cleaning methods. No additional payment will be made to the Contractor for mechanical cleaning required for root removal or grease deposits. The lineal foot cost established as part of Bid Items 2 and 3 shall also include all costs associated with any necessary Traffic Control in-field, submission and approval of Traffic Control Plan(s), and bypass piping and pumping. The bypass piping and pumping will include bypass of the segment of the line being worked on from the beginning of cleaning operations to the completion of lining work.

Any clearing required for the Contractor’s forces to complete this item of work will not be measured for payment but will be incidental to the work item.

**Bypass Sewer Over Piping**

The unit price for sanitary sewer lining shall also include all necessary attributes of the planning, establishment, activation, installation, maintenance, and dismantling of bypass piping and pumping for this contract. No additional costs will be granted to the Contractor associated with the bypass piping or pumping for the lining contract. As part of the site investigation, the Contractor shall evaluate and pre-plan the anticipated routing of bypass piping for this contract, recognizing that the lineal feet of required bypass piping may exceed the lineal feet of the sewer main to be relined.

Contractor shall submit a detailed, engineered, bypass pumping plan to the County for review two (2) weeks prior to proceeding with installation of bypass system onsite. The bypass system shall include a backup pump that is onsite and tied into the system, ready for activation should the primary bypass pump fail. Bypass pumping plan shall include provisions for 24 hours 7 days a week monitoring of the system in operation by a trained individual who is located onsite. The use of remote operators, dial-up, or mobile phone alert systems will not be considered as a sufficient primary monitoring method. The on-site person shall be trained and qualified in monitoring the system for failures, leaks, and capable of switch-over from primary to backup bypass pumping as needed. The on-site person shall walk the entire length of the bypass at a minimum
of once an hour to inspect for problems.

Items of work not specifically included in the measurement and payment items as described herein will not be measured for payment but the cost thereof will be considered as incidental to the Contract, and therefore already included in the unit price per linear foot for lining. This shall include but not be limited to the following Items of work:

   a. Maintenance of traffic.
   b. Clearing and grubbing.
   c. Unclassified trench excavation and backfilling.
   d. Sediment and erosion control
   e. Removal and disposal of debris off-site.
   f. Temporary trench surface, above graded aggregate subbase
   g. Topsoil, seeding, and mulching.
   h. Transitions or adaptors that might be needed to connect all sewer piping.
   i. Dewatering.
   j. Grading.
   k. Embankments.
   l. Permits
   m. Manhole Connections
   n. Paving, including patching (cold & therm)
   o. Striping
   p. Curb & Gutter
   q. Sheeting and shoring

Traffic Control

The unit price for sanitary sewer lining shall also include all necessary attributes of traffic control, including securing applicable permits, that will be required of the Contractor in order to comply with County and State regulations as applicable for this Contract. The number of days of traffic control that will be required is contingent on the Contractor’s proposed schedule and efficiency of work and impact on roads, street crossings, and other areas that may dictate the need for appropriate traffic control. A suggested Traffic Control Plan (TCP) has been provided in this contract. The Contractor may use or change this plan, or develop a new one. If the Contractor elects not to use the TCP provided, the Contractor is responsible for the any generation, submission, and approval of another Traffic Control Plan (TCP) thru coordination with the County and the Bureau of Engineering’s Traffic Dept two (2) weeks prior to start of work. No additional payments will be authorized to the Contractor for multiple re-submissions, revisions, or other required efforts necessary to obtain TCP approval from the governing dept(s). Use of the provided TCP or creation of a project-specific TCP(s) shall be assumed by the Contractor and included in the base bid. The submission of or reference to standard MSHA details may not be sufficient to satisfy the requirements for TCP approval.
Item 4: Re-establish Existing Service or Other Laterals

The number of existing service connections actually requiring reconnection shall be the number used for payment at the Bid Item No. 4 unit price bid. The unit price bid shall include the cost of all labor and equipment to reconnect the existing sewer and other laterals.

Item 5: Manhole Lining - Single and Additional Layer

Contractor shall fully clean, prepare, and reline the manholes listed in Appendix F in accordance with County Standard Specifications. The price bid shall include cleaning the manhole, preparing the manhole surface for coating, applying pre-coating materials, point repairs as needed, installation of the manhole lining material, bypass on the specific manhole affected, and traffic control as specified below. Lining material thickness included in Item 5.a includes the 1/8” thickness for additional manhole protection, plus the ½” thickness specified. Item 5.b includes only the ½” additional thickness, as directed by the County.

Bypass Sewer Over Piping

The unit price for manhole rehabilitation shall also include all necessary attributes of the planning, establishment, activation, installation, maintenance, monitoring, and dismantling of bypass piping and pumping for this contract.

Traffic Control

The unit price for manhole rehabilitation shall also include all necessary attributes of traffic control that will be required of the Contractor in order to comply with County and State regulation as applicable for this Contract. The number of days of traffic control that will be required is contingent on the Contractor’s proposed schedule and efficiency of work and impact on roads, street crossings, businesses, scheduled activities, and other areas that may dictate the need for appropriate traffic control. A Traffic Control Plan (TCP) and permit have been provided in this contract. The Contractor may use or change this plan, or develop a new one. If the Contractor elects not to use the TCP provided, the Contractor is responsible for the any generation, submission, and approval of another Traffic Control Plan (TCP) thru coordination with the County and the Bureau of Engineering’s Traffic Dept. No additional payments will be authorized to the Contractor for multiple re-submissions, revisions, or other required efforts necessary to obtain TCP approval from the governing dept(s). Use of the provided TCP or creation of a project-specific TCP(s) shall be assumed by the Contractor and included in the base bid. The submission of or reference to standard MSHA details may not be sufficient to satisfy the requirements for TCP approval.
CONTINGENT ITEMS

The following items are Contingent Items that the County may direct the Contractor to perform as additional work during the progression of the contract:

**Item C.01: Miscellaneous Equipment (Blue Book)**

Payment for miscellaneous equipment will be per hour for equipment used, based on current Blue Book rates. This item is only to be used for activities performed not included in the Scope of Work, or when specialized equipment or tools are necessary for additional work as directed by the County. Use and hours must be verified by the Engineer in writing.

**Item C.02 Miscellaneous Material**

Payment for miscellaneous material will be for the raw cost of the material(s), plus fifteen percent (15%), plus the prevailing Maryland State Sales Tax. Payment shall be substantiated by the suppliers' invoices and written acknowledgment of the Engineer. This item is only to be used for activities performed not specifically listed in the scope of work.

**Item C.03: Overhead & Profit**

The Contractor's Overhead and Profit on labor and materials in case a subcontractor is needed for additional work assigned by the County.

**Item C.04 Point Repairs**

As authorized by the Owner, the Contractor may be required to perform one or more point repairs to include excavation and restoration of a section or sections of pipe that are beyond rehabilitation using CIPP. The cost for such work shall be negotiated between the Owner and the Contractor to cover the actual labor and materials costs, as well as any additional maintenance of traffic or by-pass necessary to perform such work. Payment shall be substantiated by the Contractor's invoices and written acknowledgment of the Owner, and shall not exceed the total allowance amount established in Contingent Bid Item No. C.04.

**Item C.05 Additional By-Pass Pumping**

As authorized by the Owner, the Contractor may be required to extend the duration of by-pass pumping during pipe cleaning operations. If and when there is concern that the cleaning process could compromise the integrity of the existing sewer pipe, the Contractor shall be paid by Contingent Item C.05 for additional by-pass pumping during the cleaning process. This additional by-pass cost only includes an extension to the duration of the by-pass pumping already required during the lining process, therefore; it shall not include mobilization/demobilization expenses.
**Item C.06 Inspector Directed TV Inspection**

As directed by the County, the Contractor may be required to perform television inspection of additional sewer pipe segments as needed. This item shall not be used to pay for television inspection of line segments already specified as part of the contract. Payment includes the technical equipment and operator, plus NASSCO report and DVD or digital video. Each unit of payment will include one set up and TV inspection at one location of varying length. The diameter of the pipe will be similar to the lines in the base bid items.

**Items C.07-C.11 Labor and Equipment**

The County may call for the Contractor to apply his crew and equipment for utility construction activities that are independent of and not already included in the original base contract scope of work. These will be paid for on an hourly basis to the nearest quarter hour as documented by the County Inspector. A daily work ticket for payment must include operators’ names, equipment, and hours worked submitted to Engineer.

**Item C.12 Additional Paving**

As directed by the Engineer, the Contractor may be asked to expand the road restoration area on either side of the planned excavation to capture and repair defects in the existing surface. The standard paving depth will apply and preparation includes saw cutting the perimeter and striping. This item can also be used to pay for asphalt driveway repairs as necessary. Also see Item U.11 Test Pits.

**Item C.13 CR-6**

If and when additional paving is called for by the Engineer, this item will be paid for by the supplied ton to be incorporated into the paving as compacted base material.

**Item C.14 Additional Concrete for Sidewalks/Driveways**

The County may direct the Contractor to go beyond the typical limits of restoration in driveways and sidewalks. The County will pay the cost for concrete removed and replaced to match the existing concrete abutting the disturbed area. This item does not apply to restoration or disturbances made by the Contractor during the performance of the contract work.

**Item C.15 Re-Cut / Enlarge Existing Lined Pipe Taps**

The Contractor may be required to re-cut or enlarge laterals of previously lined gravity sewer pipelines. The location of these repairs will be County-wide and will be provided by the County during the project. All costs including, but not limited to, mobilization, traffic control, temporary bypass, etc. to re-cut/enlarge laterals shall be included in Contingent Item No. 07. This contingent item can only be used to tap cut laterals in previously-lined pipe. Any missed or obstructed laterals on the newly lined
pipe in this contract shall be corrected by the Contractor at their expense. The Contractor is responsible for locating all connections prior to lining, then cutting out for each one after lining.

**Item C.16 Manhole Rehabilitation - PerpetuWall™**

As directed by the County, work under this item includes fully cleaning, preparing, and relining manholes in accordance with County Standard Specifications. The price bid shall include cleaning the manhole, preparing the manhole surface for coating, applying pre-coating materials, point repairs as needed, installation of the manhole lining material and all ancillary materials listed in the manhole rehabilitation specification in these Special Provisions, bypass on the specific manhole affected, and traffic control as specified below. The cost of both the 11 oz. and 18 oz. fiberglass option will be included in this item.

**Bypass Sewer Over Piping**

The unit price for manhole rehabilitation shall also include all necessary attributes of the planning, establishment, activation, installation, maintenance, monitoring, and dismantling of bypass piping and pumping for this contract.

**Traffic Control**

The unit price for manhole rehabilitation shall also include all necessary attributes of traffic control that will be required of the Contractor in order to comply with County and State regulation as applicable for this Contract. The number of days of traffic control that will be required is contingent on the Contractor’s proposed schedule and efficiency of work and impact on roads, street crossings, businesses, scheduled activities, and other areas that may dictate the need for appropriate traffic control. No additional payments will be authorized to the Contractor for multiple re-submissions, revisions, or other required efforts necessary to obtain TCP approval from the governing dept(s). Project-specific TCP(s) shall be assumed by the Contractor and included in the base bid.

**Item C.17 Manhole Rehabilitation - Permaform**

As directed by the County, work under this item includes fully cleaning, preparing, and relining manholes in accordance with County Standard Specifications. The price bid shall include cleaning the manhole, preparing the manhole surface for coating, applying pre-coating materials, point repairs as needed, installation of the manhole lining material and all ancillary materials listed in the manhole rehabilitation specification in these Special Provisions, bypass on the specific manhole affected, and traffic control as specified below.

**Bypass Sewer Over Piping**

The unit price for manhole rehabilitation shall also include all necessary attributes of
the planning, establishment, activation, installation, maintenance, monitoring, and
dismantling of bypass piping and pumping for this contract.

Traffic Control

The unit price for manhole rehabilitation shall also include all necessary attributes of
traffic control that will be required of the Contractor in order to comply with County
and State regulation as applicable for this Contract. The number of days of traffic
control that will be required is contingent on the Contractor’s proposed schedule and
efficiency of work and impact on roads, street crossings, businesses, scheduled
activities, and other areas that may dictate the need for appropriate traffic control. No
additional payments will be authorized to the Contractor for multiple re-submissions,
revisions, or other required efforts necessary to obtain TCP approval from the
governing dept(s). Project-specific TCP(s) shall be assumed by the Contractor and
included in the base bid.

UNIT PRICE ITEMS

Items U.01 through U.11 are Unit Price Line Items. The quantities are approximate
and not meant to include any work included in the Base Bid Items or Contingent Items
above. The purpose of these Unit Price Line Items is to establish a unit price for the
item of work in case the County directs the Contractor to perform that item of work.

Item U.01-U.03: Select Backfill Material and Disposal of Unsuitable Material

There may be found unsuitable material for replacement in the sewer lateral trench.
The Engineer may condemn the re-use of such objectionable material and call for its
replacement. This situation entails trucking in from an acceptable quarry, select
material that will be paid for based on the compacted volume as measured by the
Engineer. Included in the payment under this Item is the Contractor’s labor and
equipment to dispose of this material to an acceptable dump for such material. (No
materials of any kind may be given to customers for their private use.)

Item U.04: Reinforced Silt Fence

If directed by Engineer or Sediment & Erosion Control Inspector, the Contractor shall
furnish, install, maintain, remove, and restore for the price per lineal foot any
additional silt fence that is directed to be installed.

Item U.05: Excelsior Matting

If directed, typically on hard-to-maintain slopes, this fabric-like landscape material
shall be applied and paid for by the square yard. The cost to secure the matting is
included under this item.
**Item U.06 Temporary Seed**

As directed by the Engineer, the Contractor shall furnish, install, and maintain temporary seeding until final restoration is complete. The cost of watering is included under this item.

**Item U.07 Earth Dike**

Contractor will furnish materials and install an earth dike as required for Sediment and Erosion Control, per Soil Conservation Service standards, and as approved by the Engineer.

**Item U.08: Stone No. 2 - Sediment Control Devices**

As directed, temporary inlet protection devices using filter cloth fabric, boards and crushed rock will be constructed and paid for based on the cubic yards applied to accomplish the prevention of sediments into tributaries of the Chesapeake Bay.

**Item U.09: Calcium Chloride Application for Dust Control**

If directed, 100-pound bags of this dust reducer shall be stored on the site and spread uniformly when required at 12 pounds per square yard. Payment will be made per ton of applied material.

**Item U.10: Miscellaneous Concrete**

Unspecified usage as directed by engineer shall be paid for by cubic yard of placed material. Forming cost is included under and is incidental to this item.

**Item U.11: Test Pits**

Accommodation for careful excavations around utility conflicts, as directed by the Engineer, are paid for in accordance with the size and type of excavation. Nondestructive refers to vacuum procedures in 12"-18" shafts. Paving for said test pits that are outside of the trench area will be paid for under C.12 Additional Paving. Payment for test pits performed for the convenience of the Contractor are not included under this item and are incidental to the item of work for which they were performed.

**SP-25 SUBMITTALS**

Modifying General Provisions article GP 5.04.1: ADD

A. Submit ten (10) copies of show drawings for review prior to commencement of work. Two (2) copies will be returned to the Contractor following review period.

B. The time required to process submittals is included in the Contractor's contract duration as specified in calendar days. No additional contract days will be
granted in association with the submittal review and approval process.

C. Initial shop drawing submission(s) will be accepted at the Pre-Construction meeting or within seven (7) days following Notice to Proceed.

Modifying General Provisions article GP 5.04.6: CHANGE

D. Modify second sentence to state “Failure to comply with this Specification and to submit the necessary shop drawings within ten (10) days of Notice to Proceed shall be sufficient reason to suspend progress payment(s).

SP-26 CUSTOMER RELATIONS

The Contractor shall conduct all work with the utmost attention to detail and focus on customer satisfaction. In addition to the requirements set forth in Appendix A “Contractor Customer Service Program” the additional contract specific requirements apply:

- Distribution of County provided flyers or door hangers to customer residences prior to work commencing; frequency and timing of notification materials will be as coordinated thru the County’s representative

- All trucks or vehicles used for conducting the Work shall be clearly marked with the Contractor’s company name or a sign indicating that the Contractor is “Working for Anne Arundel County” or a “Subcontractor to Anne Arundel County”. In some cases, the Engineer may require both signs be displayed on all vehicles.

- Sign shall include bold letters that are a minimum of 3” in height

- Workers shall present themselves in a professional manner; especially while working in close proximity to children and customers.

- When approached by the public they shall be able to communicate with the customer and provide only limited information about the work they are performing on behalf of Anne Arundel County. Where possible, only the Site Superintendent or Lead Person shall communicate with local residents or customers, through coordination and notification to the County Engineer, Inspector, and/or designated representative.

- Each worker shall have some form of identification on their person at all times. At a minimum, the identification shall include their name, supervisor’s name, emergency contact phone number, and the name of the company they work for.

- Workers shall either wear a T-Shirt or other form of clothing that includes the name of their company or ID badge may be worn and displayed for the customer to easily identify the person as a Contractor or subcontractor working for Anne Arundel County.
Any costs associated with these tasks or requirements shall be included in the individual lines for each type of work conducted. No additional costs or change order requests relevant to public or customer relations will be considered for review.

**SP-27 REFERENCE INFORMATION**

Anne Arundel County DPW Engineering  
- Standard Details for Construction  
- Standard Specifications for Construction  
  - General Provisions for Construction  
  - Technical Requirements  
GIS Infrastructure Information for Anne Arundel County  
Engineering Records Reference  

*End of Special Provisions*
Unless otherwise required by Special Conditions the Successful Bidder will be required to purchase and maintain during the life of the Contract Comprehensive General Liability Insurance, Comprehensive Automotive Liability Insurance, and Worker’s Compensation Insurance with limits of not less than set fourth below:

1. **COMPREHENSIVE GENERAL LIABILITY INSURANCE**
   At least $1,000,000 combined single limit coverage on an occurrence basis Covering all premises and operations and including Personal Injury, Independent Contractor, Contractual Liability and, where applicable to the project as determined by the Purchasing Agent, Product and Completed Operations. The general aggregate limit is to apply per project.

2. **COMPREHENSIVE AUTOMOBILE LIABILITY INSURANCE**
   At least $1,000,000 Combined Single Limit to include owned, non-owned, and hired vehicles, as well as coverage for business use of vehicles.

3. **WORKER COMPENSATION INSURANCE**
   Statutory benefits as required by Maryland law and, when required, the U. S. longshoremen’s and Harbor Worker’s Compensation Act, including standard Other States coverage; Employers Liability coverage with limits of at least $100,000 each accident/$100,000 each employee disease/$500,000 disease policy limit.

4. On all Comprehensive General and Comprehensive Automobile Liability Insurance policies, Anne Arundel County, Maryland, its agents, servants, and employees shall be named as an additional insured’s, which shall be shown on the insurance certificates of insurance furnished to the County under this section.

5. The successful Bidder shall provide the County with certificates of Insurance evidencing the coverage required above: Such certificates shall provide that the County be given at least thirty (30) days prior written notice of any cancelation of, intention not to renew, or material change in coverage. The successful Bidder must provide certificates of insurance before commencing work in connection with the Contract.
APPENDIX D
INSURANCE REQUIREMENTS

6. Contractor’s “Legal Name” and matching the State of Maryland’s SDAT listing shall be listed there.

7. Legal name of County – shall be listed in areas as “ANNE ARUNDEL COUNTY, MARYLAND”.

Failure to provide and continue in force insurance as required herein shall be deemed a material breach of any resulting Contract and shall operate as an immediate termination thereof.
Large Diameter Relining - Phase 3
PROPOSAL NO. X7388168
PROJECT NO. X738800

Appendix “E”

LINING LOCATIONS, 40-SCALE DRAWINGS, & TV CAMERA FOOTAGE
<table>
<thead>
<tr>
<th>Work Order</th>
<th>Address</th>
<th>Map</th>
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<th>City</th>
<th>US MH</th>
<th>DS MH</th>
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<th>Road Type</th>
<th>Length</th>
<th>Laterals</th>
<th>Problems/Details</th>
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Deale Road and Deale Churchton Road are MD Route 256
Appendix “F”

MANHOLE REHABILITATION LOCATIONS,

40-SCALE DRAWINGS,

AND AS-BUILTS
## Large Diameter Relining 3

### Work Order

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### APPENDIX F
MH 16936

Map created with CountyView

08/23/2012
a. New Year's Day (January 1st or nearest weekday)
b. Dr. Martin Luther King, Jr.’s Birthday (3rd Monday in January)
c. Washington's Birthday
d. Good Friday
e. Memorial Day (last Monday in May)
f. Independence Day (July 4th or nearest weekday)
g. Labor Day (1st Monday in September)
h. Veteran's Day
i. Thanksgiving Day
j. Thanksgiving Friday
k. Christmas Day (December 25th or nearest weekday)
l. Days of general and congressional elections, not including primary elections, throughout the State.