PROPOSAL FORM

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS & TRANSPORTATION TOWSON, MARYLAND

Division of Construction Contracts Administration

IN CONJUNCTION WITH CONSENT DECREE ENTERED INTO BY AND AMONG THE UNITED STATES OF AMERICA, THE STATE OF MARYLAND AND BALTIMORE COUNTY, MARYLAND



Contract Number 21202 SX0 Gray Manor Interceptor Rehabilitation (from Wise Avenue to Trappe Road to I-695) Dundalk – District 12,15 c 7 Workday Number 010777308 Job Order Number 231-203-0077-7308

CONTRACT BASED ON SEPTEMBER 2023 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS AND STANDARD DETAILS FOR CONSTRUCTION

Bidders Information

A pre-bid meeting will be held on Wednesday, March 5, 2025 at 10:00 a.m. EST via WebEx. *Phone-In* (Audio Only) 1-415-655-0001, Meeting Number 2301 988 7868##. *Video Conference* go to <u>https://signin.webex.com/join</u> Meeting Number 2301 988 7868, Password **HcmPTAfK636**, for Webex link go to: <u>www.baltimorecountymd.gov/departments/public-works/engineering/contracts/current-solicitations</u>

Baltimore County Prevailing Wage and Local Hiring Affidavit, Wage Rates & Requirements see pages <u>254-261</u>

(Contract Disclosure): "Wage rates that are in effect as of the contract solicitation date will be the wage rates through the duration of the project"

MBE/WBE Requirements & Forms see pages 262-276

THIS PROPOSAL FORM INCLUDES AND INCORPORATES ALL DOCUMENTS AND INFORMATION REFLECTED, LISTED, AND/OR REFERENCED IN THIS TABLE OF CONTENTS, AND ALL SUCH DOCUMENTS AND INFORMATION ARE PART OF AND INCORPORATED INTO THE CONTRACT DOCUMENTS.

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SECTIONI

INFORMATION FOR BIDDERS

ELECTRONIC SUBMITTAL PROCESS

To be considered, Bids (Section IV – Proposal) shall be received by the bid closing date and time to the following email address <u>dpwbid@baltimorecountymd.gov</u>. The contract number and company name should be referenced in the Subject Line of the email. Bids may not be submitted by any other means. Bids that are mailed or otherwise delivered to the Purchasing Division (including emails which indicate links to locations where the bid may be downloaded) and/or emails sent to any other Baltimore County email address will not be accepted.

Late Bids will not be considered. Bidders are strongly encouraged not to wait until the last minute to submit bids. The time stated on the auto-receipt (described below) will be definitive of the time of receipt. Bids received after the deadline will not be accepted. Bidders are advised that the County cannot receive email attachments greater in size than twenty-five (25) megabytes and this size limitation may be further reduced by requirements of the Bidder's email provider which are beyond the control of the County. Bidder should consider separating any large bid attachment into multiple parts and emailing each part separately. In such case, Bidder will note that each email is 1 of 2, 2 of 2, etc. Multiple part bids will not be considered unless all parts are received by the bid closing date and time.

After submitting a Bid to <u>dpwbid@baltimorecountymd.gov</u>, and upon successful receipt by the County thereof, Bidder will receive an auto-receipt email. This receipt is proof that the bid has been received by the Division of Construction Contracts Administration and should be retained for Bidder's records. In the case of a bid submitted in multiple parts as described above, an auto-receipt email will be generated for each part. The County has no obligation to consider any Bid for which an auto-receipt was not generated.

As with any system, power outages or technology problems may arise that are outside of the County's control and could affect your submission. The County will not be held accountable for such issues that may delay the transmission of any Bid.

NOTE: Electronic copy of the Bid Bond will be accepted at bid opening. The apparent low bidder is required to submit the original Bid Bond within ten (10) days after the bid opening to the Division of Construction Contracts Administration, 111 West Chesapeake Avenue, Room 300B, Towson, Maryland 21204.

INSTRUCTIONS AND SPECIFICATIONS

Refer to the enclosed proposal sheets for quantities to be bid upon. All proposals submitted on the attached form must give the price in clear figures for each item of the proposed work and be signed by the bidder with his name and address. Bidders must not change any item in the proposal for which a price has been stipulated by the County. Any change will cause rejection of the proposal.

NOTE: STATEMENT UNDER OATH FORM TO ACCOMPANY BID as per Baltimore County Purchasing Act 65-98, Section 15-94 and 15-95 which requires that the enclosed affidavit (see Proposal Affidavit pages in Section IV) be completed and submitted as part of the sealed bid. Proposals made on any other than the attached form will not be considered. All papers included in, bound thereto, or attached to the Proposal Form are necessary parts thereof and shall not be detached, separated, or altered in their intent.

Changes in the phraseology of the proposal, additions, or limiting provisions will render the proposal informal or void and may cause its rejection.

All right is hereby reserved by the Purchasing Agent to reject any or all proposals and to waive formalities and technicalities as the interest of the County may require.

No successful bidder may withdraw his bid within <u>NINETY (90)</u> days after the opening thereof.

The successful bidder will be required to be bonded to Baltimore County, Maryland to the sum of One Hundred per Cent (100%) of the amount of his proposal or proposals according to the form of bond hereto attached for projects in excess of \$25,000.00.

This Proposal must be accompanied by a Bid Bond in an amount of 5% of the bid, the exact amount to be determined by the difference between the low bid and the next lowest bid if two or more bids are received, or 5% of the bid if one bid is received. This guarantees payment of the amount thus determined in case of a default in any matter specified as required before award or in any matter resulting in failure to execute and deliver an Agreement, together with Payment and Performance Bonds, after award. The Bid Bond must be in the form accompanying the Proposal executed by a Surety licensed in the State of Maryland. The Surety must be currently rated "B" or better by the A. M. Best Company, and the bid must be in an amount less than, or equal to, the underwriting limitation contained in Department of Treasury Circular 570 as amended at the time of the underwriting.

All work to be performed under this contract shall be done under strict compliance with Baltimore County Department of Public Works and Transportation September 2023 <u>Standard</u> <u>Specifications for Construction and Materials</u> and <u>Standard Details for Construction</u> and any and all proposed revisions thereto as of the date of advertisement and copies of which are available on the County's website at <u>www.baltimorecountymd.gov/departments/public-works/standards</u>, and all of which are made a part hereof and incorporated herein (collectively, the "Specifications").

If the bidder to whom an award is made shall fail to execute the contract and bond hereto attached and as herein provided, the award may be annulled and the contract awarded to the lowest responsible bidder who has consented to a time extension, and such bidder shall fulfill every stipulation embraced herein as if he were the original party to whom the award was made, or the Purchasing Agent may reject all of the bids as the interest of the County may require.

The Bid Bond of the three lowest bidders is deemed to be effective until the execution and delivery of the Contract Agreement, together with Payment and Performance Bonds for projects in excess of \$25,000.00 or until rejection of all bids, whereupon Surety is deemed relieved of all further obligations under the bid bonds provided.

Bidders must examine the drawings and specifications carefully and must 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 specification, inquiry shall be made of the Director of Public Works and Transportation at least five (5) days prior to the date of

bid opening. The submission of the Proposal shall indicate that the bidder thoroughly understands the drawings and the terms of the Specifications.

To better ensure fair competition and to permit a determination of the lowest bidder, unresponsive bids or bids obviously unbalanced may be rejected by the Purchasing Agent.

Bidders are required to fill out the total price column and total their proposals so that the result of the bidding, barring possible arithmetical errors, will be known at once. Any errors in computations will be corrected by the Engineer when the proposals are canvassed. Where the unit price and the total price are at variance, the unit price will prevail.

Bidders must be prepared to complete the work within the time stated in the proposal.

NOTE: ONLY CONTRACTORS FORMALLY PRE-QUALIFIED WITHIN THE ADVERTISED WORK CLASSIFICATION BY THE DIRECTOR OF PUBLIC WORKS AND TRANSPORTATON OF BALTIMORE COUNTY 10 CALENDAR DAYS PRIOR TO BID OPENING WILL BE ELIGIBLE TO SUBMIT BIDS.

Contracts for work under this proposal will obligate the contractors and subcontractors not to discriminate in employment practices. Bidders must, if requested, submit a compliance report concerning their employment practices and policies in order to maintain their eligibility to receive the award of the contract. Successful bidders must be prepared to comply in all respects with the Contract Provisions regarding nondiscrimination.

Baltimore County has adopted a Minority Business Enterprise (MBE) program and Women's Business Enterprise (WBE) Program. The percentage of participation applies to the contract amount awarded to the Contractor. Qualified minority subcontractors are those certified as being a Minority Business Enterprise by the following:

- 1. Maryland Department of Transportation Certification Committee (MDOT)
- 2. City of Baltimore, Minority Business Certification Council

Projects funded by the Federal Highway Administration are limited to the certification listed under #1 (MDOT).

More detailed information regarding the County's MBE/WBE Program can be obtained from the County MBE Office, telephone (410) 887-3407. See Executive Order dated December 6, 2022. MBE/WBE Participation Summary and Forms A, B, C, D and E enclosed in this proposal booklet.

NOTE: If you do not complete and submit the enclosed forms with your bid or offer to the County, the County may, in its sole discretion, deem your bid or offer **NON-RESPONSIVE** and accordingly the **COUNTY WILL NOT CONSIDER YOU FOR CONTRACT AWARD**.

The County reserves the right to require the low bidder to produce evidence indicating that the company's financial condition is equal to, or better than, that enjoyed by the company at the time of prequalification. This additional information may be in the form of a financial statement or other evidence satisfactory to the Office of Budget and Finance.

Bidders' attention is directed to the requirement that a permit must be obtained from the Baltimore County Bureau of Highways and Bureau of Traffic Engineering prior to cutting any County

road for the purpose of obtaining sub-surface soils information, and permission must be obtained from the State Highways Administration prior to making any openings in a State road.

Under no circumstances shall a bidder enter upon any property outside a County or State road for the purpose of securing sub-surface soils information until permission is received from the property owner. The fact that the County has obtained a utility easement does not give the bidder the right to enter upon the property.

Prevailing index price of asphalt cement/ton <u>\$640.00</u>.

INCLEMENT WEATHER POLICY: If Baltimore County <u>General Government</u> Offices are open or open with liberal leave the day the bids are due, the bids are due as stated in the bid documents (date and time). **ONLY** when the Baltimore County <u>General Government Offices</u> are **OFFICIALLY CLOSED** the day the bids are due, the bid date will be postponed and an Addendum will be issued the next business (or next day buildings are officially open) day the county offices are open with the new bid date and time.

<u>BID TABULATIONS</u>: All bid tabulations will be confidential until after final award, at which time the total bid amounts for all bidders, as well as the complete bid tabulations for the top three (3) bidders, can be inspected by others when requested in writing pursuant to the Maryland Public Information Act.

ALTERNATIVE SOURCES OF CONTRACT BONDS: In the event your company is unable to qualify for bonding through a traditional commercial surety company, you may qualify for the required bonds through the State of Maryland, Department of Commerce (DOC). The **Maryland Small Business Development Financing Authority (MSBDFA, pronounced Mis-Bid-Fa)**, an agency of DOC, operates a Surety Bond Program designed to assist small businesses, based in Maryland, that are unable to obtain adequate bonding on reasonable terms in the commercial marketplace. MSBDFA provides bid, payment and performance bonds for contracts funded by government agencies, regulated utilities and private entities. The penal sums of the bonds are limited to the aggregate amount of \$2,500,000 and companies may pre-qualify for multiple bonds within pre-approved terms and conditions. MSBDFA also provides lines of credit, term loans and loan guarantees to help qualified businesses purchase equipment and real property, make improvements to leased property, refinance existing debt and assist them with their working capital needs. For more information on how to apply, you may contact: Meridian Management Group, Inc. (MMG), (the Program's Manager), 826 E. Baltimore Street, Baltimore, Maryland 21202, Telephone: (410) 333-4270. Or visit their website at <u>www.mmgcapitalgroup.com</u> for information, applications and a checklist of required documents and reports that must accompany the application.

SECTION II

SPECIAL PROVISIONS

MAINTENANCE BOND

Per the Baltimore County Department of Public Works and Transportation September 2023 Standard Specifications for Construction and Materials, Section GP - 4.10 (C) states, the contractor is required to post a maintenance bond in the amount of five (5) percent of the total cost of the contract or withhold five (5) percent retainage for two (2) years from the date of Final Acceptance.

BALTIMORE COUNTY, MARYLAND

BOND NO.

CONTRACT NO.

MAINTENANCE BOND

THIS MAINTENANCE BOND is entered into or	n this day of
, 20, by and between	
as principal ("Principal") and	, a business entity
that is authorized to transact business in the State	of Maryland and is organized and existing
under the laws of the State of	, as surety ("Surety"), are held and
firmly bound unto Baltimore County, Maryland,	a body corporate and politic of the State of
Maryland ("County"), as Obligee.	

WHEREAS, the above-named Principal has entered into a written contract known as Contract Number _______ dated ______, 20____ with Obligee for

(the "Agreement"), the terms of which are hereby incorporated by reference; and

WHEREAS, Principal has completed construction under the Agreement; and

WHEREAS, the Agreement includes a warranty on the quality of the Work performed that runs for a period of two (2) years from the date of the County's final acceptance and that runs for two (2) additional years beyond the repair date if any repair is done during the warranty period; and

WHEREAS, Principal is required to cause this instrument to be executed and delivered to Obligee as security for maintenance during the warranty period in an amount equal to 5% of the total value of the Contract.

NOW, THEREFORE, the Principal and Surety are held and firmly bound unto the Obligee in the sum of \$_______ Dollars (\$_______), lawful money of the United States of America, for the payment of which sum of money the Principal and Surety do bind themselves and their personal representatives, legal representatives, successors, and assigns, jointly and severally, firmly by this maintenance bond.

The conditions of this bond are as follows:

1. The Principal shall, for a period of two (2) years from and after the date of completion and acceptance of same by Obligee, replace all defects arising in the Work, whether resulting from defective materials, equipment, design furnished or workmanship. After such period, this obligation shall be null and void; otherwise it shall remain in full force and effect.

- 2. In the event of a default on the part of the Principal that may be the subject of a claim under this bond, Obligee shall mail, by certified mail, to Surety at the address listed below, a written statement that a claim is being made under the bond and, with substantial accuracy, the amount of the claim. Surety shall have no obligation to Obligee under this bond until the notice of claim is mailed.
- 3. When the Obligee has satisfied the condition of Paragraph 2 that a notice of claim be mailed, the Surety shall promptly and at the Surety's expense send an answer to Obligee within 30 days after the date of the claim. The answer shall state the amounts that are undisputed and the basis for challenging any amounts that are disputed. The answer shall be accompanied by payment (or arrangements for immediate payment) of any undisputed amounts.
- 4. Surety expressly waives any right to receive notice of extensions of time or alterations or modifications to the Agreement that may be granted by Obligee and agreed upon by Principal, and any such extensions, alterations, or modifications shall not affect the obligation of the Surety under this bond.
- 5. This bond is a specialty governed by the twelve-year statute of limitations period set forth in the Annotated Code of Maryland Courts and Judicial Proceedings §5-102.

(Principal – Contractor Name)	
By:	
Type Name:	
Type Title:	
Date:	
(Surety)	
Ву:	
Type Name:	
Type Title:	
Type Address:	
Date:	

For Sanitary Sewer Rehabilitation Projects utilizing the County secure file transfer protocol site:

Existing CCTV and manhole inspections for this project will be located on Baltimore County's secure file transfer protocol (SFTP) site. Anyone who downloads the bid package can be provided a user name and password to access the SFTP site. To obtain login credentials to access the SFTP site, please email the request to <u>cidwebportalaccess@baltimorecountymd.gov</u>. The email request should include the contract name and number in the subject line. The body of the email should state "SFTP site login credentials are being requested" along with the Contractor's name, contact person, phone number and email address. The existing CCTV and manhole inspections may be downloaded for use in preparing bids. The SFTP site contains the CCTV and Manhole Inspections only. The Proposal Book and the Construction Drawings, along with the CCTV and Manhole inspections, constitute a complete bid package.

April 15, 2014 Revised 9/10/14 Revised 10/2/14 Revised 10/15/15 Revised 2/7/17 Revised 2/21/18 Revised 6/12/20

BALTIMORE COUNTY DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION SANITARY SEWER REHABILITATION SPECIFICATIONS

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Special Provisions

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- Section 1380 Preconstruction Video
- Section 1700 Completion, Cleanup and Guarantee
- Section 2731 Pipe Rehabilitation General Requirements
- Section 2732 Pipe Rehabilitation by Cured-in-Place Method (CIPP) (per ASTM F1216)
- Section 2733 Pipe Rehabilitation by Pulled-in-Place Glass Reinforced Plastic (GRP) CIPP Method (Per ASTM F2019)
- Section 2737 Manhole Rehabilitation
- Section 2738 Sanitary Sewer Pipe Joint and Service Connection Testing and Grouting
- Section 2740 Flow Control
- Section 2741 Sewer Line, Lateral, and Manhole Cleaning
- Section 2742 Television Inspection
- Section 2744 Point Repairs (Excavate and Repair)
- Section 2751 Sanitary Sewer House Connection Reinstatement and Lateral Replacement
- Section 2752 Sewer House Connection Lateral Seals

SPECIAL PROVISIONS PART A - GENERAL REQUIREMENTS

GENERAL

The Special provisions are hereby made a part of the Contract. In case of any conflict with the "Standard Specifications, General Provisions," latest edition, these Special Provisions shall govern.

All work to be performed under this Contract shall be done in strict compliance with the Baltimore County Standard Specifications for Construction and Materials, latest edition.

CONTRACT DOCUMENTS - DESIGN INTENT

Baltimore County Department of Public Works and Transportation Standard Specifications for Construction and Materials and the Standard Details for Construction, latest edition, are hereby made a part of the Contract and these Special Provisions.

Contract Drawings to be followed for this Contract shall be those approved drawings on file at the office of the Engineer. The Contract Drawings contain information as to amount, location, dimension and detail of the work to be performed in accordance with the Specifications. No deviation shall be permitted from the Contract Drawings and Specifications unless authorized in writing by the Engineer. Deviation by the Contractor from the Contract Documents without the Engineer's prior written approval shall be at the Contractor's risk and expense, including the expense of removal and restoration if so ordered.

Any discrepancies found between the Drawings and Specifications or any inconsistencies in the Drawings or Specifications shall be immediately reported to the Engineer, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. Work done by the Contractor after his discovery of such discrepancies, inconsistencies or ambiguities prior to corrections directed by the Engineer shall be done at the Contractor's risk. In the case of discrepancy or omission, the Engineer will determine the intent of the design in issuing clarifying or corrective instructions.

In order to fulfill the requirements of the Contract, conformance is required with both the Contract Drawings and Specifications. The Contractor is not released from responsibility for performing work called for in the Contract Drawings but not in the Specifications or vice versa; mention of work in either part is sufficient to include it under the Contract. In all cases, the decision of the Engineer will be final.

REHABALITATION WITHIN STATE HIGHWAYS

Contractor shall be advised that several locations for rehabilitation shown on the plans are within Maryland State Highway Administration (SHA) right-of-way and/or may require bypass or other flow control within or across SHA right-of-way. Contractor shall comply with all requirements of the SHA Permit issued for this project. Contractor shall be responsible for developing a flow control plan, where required, that is in compliance with the SHA Permit and shall submit the plan for review. Traffic control, flow control, and compliance with all permit requirements shall be considered incidental to the rehabilitation work.

SEQUENCE OF CONSTRUCTION FOR PIPE AND MANHOLE REHABILITATION

Point repairs (excavate and repair) on sewer mains and sewer house connections (SHCs) shall be completed prior to rehabilitating the mainline pipe by grouting or cured-in-place pipe (CIPP) lining. SHC lateral seals and SHC grouting shall be performed after CIPP lining of the mainline pipe is completed. Where locations for SHC lateral seals or SHC grouting overlap CIPP spot repairs, the CIPP spot repair shall be installed prior to the SHC repairs. All manhole rehabilitation shall be completed after rehabilitation of the connecting mainline pipes and associated laterals is completed. Rebuilding of bench and channel and manhole adjustment shall be completed prior to manhole lining. Exterior cone refinishing and external manhole frame seals shall be installed after reset or replacement of the frame and cover and manhole adjustment is completed.

SURFACE PREPARATION FOR PREVIOUSLY LINED MANHOLES

Where the Contract Drawings indicate cementitious lining for previously lined manholes, the Contractor shall completely remove the existing lining prior to application of the new cementitious liner. Complete removal may require the use of high pressure fresh water blasting, abrasive blasting, hand grinders, chisels, etc. Surface preparation for these previously lined manholes only shall be paid for per vertical foot of manhole surface preparation.

SUBSURFACE CONDITIONS

The Contractor is warned that the alluvial soils below the water table are likely to be unstable under the unbalanced hydrostatic head caused by excavation and pumping of the trench. Unstable conditions, such as raveling of the excavation face and running sand, are possible; and trench support and/or groundwater control measures shall be designed to control these problems.

The Contractor will, in all likelihood, encounter groundwater above the trench bottom. Although it is anticipated that pumping from within the trench shall be sufficient to control the groundwater along most of the project length, the Contractor is alerted that the alluvial soils may contain some very permeable deposits of sand or gravel which allow large water inflows; and a trench shield and/or watertight sheeting may be necessary should large water inflows occur. The cost of the watertight sheeting and/or trench shield shall be included in the cost of the rehabilitation.

The Contractor shall diligently monitor ground, roadway paving, and existing structure elevations adjacent to, or reasonably proximate to, dewatering operations to detect surface subsidence or structure settlement. If these conditions occur, singly or together, the Contractor shall immediately cease dewatering operations and shall notify the Engineer.

Cost of all dewatering operations and activities related to protection of adjacent structures and ground surface will not be paid for separately but shall be considered as incidental to other items bid.

SITE INVESTIGATION

The Contractor's attention is directed to Section GP-2.04 of the Standard Specifications, which is amended as follows:

The Contractor shall satisfy himself as to the nature and location of the work, general and localized conditions which will affect the prosecution of the work, particularly transportation, materials handling, storage, and disposal. The Contractor shall satisfy himself as to the physical conditions of the site, including conformation and condition of the ground, character, quantity and quality of subsurface materials which will be encountered, surface and subsurface conditions, including the presence of rock and groundwater, and all other conditions which may affect the performance or cost of the work under the Contract. Failure of the Contractor to properly acquaint himself with all available information relevant to these conditions will not in any way be cause for adjustment to the cost or schedule of the work nor relieve the Contractor from his responsibility to successfully perform the work.

PROPERTY ACCESS

Completion of work for this project will require access to manholes and pipes located on private property. In all cases, the Contractor, in coordination with the County, is to contact the property owner prior to accessing private property. In some cases, vehicular access is not available and the Contractor will need to access manholes on foot. In most cases, access through private properties is through existing sanitary sewer easements. At some locations, the property owner has signed a right of entry agreement for access to their property. Contractor shall review all private property access as some of the rehabilitation work may involve access via a combination of existing easements and multiple right of entry agreements. Copies of the signed right of entry agreements and accompanying maps and table for the properties are appended to these special provisions. For properties with signed right of entry agreements, the property owner's name is shown within the parcel on the contract drawings. All work shall be completed within the existing right-of-way shown on the drawings or the access limits shown on the right-of-entry agreements. It should be noted that for all access through private properties whether via existing

easements or right of entry agreements, Contractor may need to remove landscaping, fences, and other surface features for proper access and shall restore them to existing or better condition after completion of work. Such work will not be paid for separately but shall be considered as incidental to other items bid.

For any private property without a right of entry agreement which in the Contractor's opinion is needed to complete the project construction, it shall be the responsibility of the Contractor to contact the property owners and negotiate access as needed to complete the work. All costs associated with land use outside of the right-of-way or right of entry agreements shall be the responsibility of the Contractor. The Contractor, in coordination with the County, shall contact property owners early in the project to minimize impact to the schedule for completion of the work.

SUBSTITUTION OF EQUIPMENT OR MATERIALS

Whenever a material, article or process is specified or described by using the name of a proprietary product or the name of a particular vendor or manufacturer followed by the phrase "or equal," the specific item mentioned shall be understood as establishing type, function, dimension, appearance and quality desired and is to be the basis upon which bids are prepared.

Equipment or materials, other than those specified, will be permitted provided that, in the opinion of the Engineer, such equipment is equal to or better than that specified. Any such decision of the Engineer with respect to approval or disapproval of any equipment or material proposed to be substituted as an "or equal" is final, and the Contractor shall have no claim of any sort by reason of such decision.

If the Contractor proposes to provide equipment or materials as "or equal" to those specified, it shall be his responsibility to furnish complete, specific, detailed information from the manufacturer or supplier of such equipment or material establishing conformance with the requirements of the Contract Specifications. This shall consist of an item-by-item comparison of the Contract Specification requirements with the equipment or material proposed to be furnished. In the event the Contract Specifications mention a model number or other designated manufacturer in lieu of the detailed description and manufacturer, an item-by-item comparison shall be furnished of the equipment specified under the Contract and that proposed to be substituted. The Contractor shall bear the burden of responsibility of demonstrating that the equipment or material to be substituted is equal to, or of higher quality than, that specified. Submission of incomplete, insufficient or irrelevant data as evidence of compliance with this provision shall be grounds for denial of the Contractor's request.

All requests for approval of equipment and materials other than specified shall be submitted by the bidders to the Baltimore County Department of Public Works and Transportation, Contract Division, in writing no less than fourteen (14) calendar days prior to the opening of bids for approval. If approved by the Department of Public Works and Transportation, all bidders will be notified through an addendum to these Specifications no less than seven (7) days prior to the opening of bids. Upon extension of the opening date of the bids, the deadline for approval of

equal or substitute equipment shall not be extended but shall remain fixed relative to the original date of the bid opening. Requests for changes to equipment or material must be made by the prime bidders, and requests for such changes by manufacturers or suppliers will neither be considered nor approved.

After the opening of bids, any request by the Contractor to substitute equipment or materials for those specified herein will be presumed to be for the purpose of saving money. If such a request is approved, the Contractor shall provide the County with a credit equal to the difference between the net cost to the Contractor of the article submitted and the lowest cost to the Contractor of the article specified. The Contractor shall submit these figures accompanying each substitute submittal; no request for substitution of equipment or materials will be considered without such figures.

The Engineer may, at his discretion, authorize use of substitute items or materials at greater, less or equal cost to those specified when required due to the Contractor's inability to obtain specified equipment or materials in a timely manner where unreasonable delays to the progress of the work may result.

In the case of the two aforementioned paragraphs, the Contractor shall submit a written request for permission to use substitute equipment or materials, furnishing full information as to the costs of the items or materials specified and the substitute item or material. Such information shall be of sufficient detail to permit verification by the Engineer of the costs submitted. If approved by the Engineer, written authorization for credit to the County or payment to the Contractor will be made based on the cost difference between the specified item and the substitute item.

All decisions of the Engineer with regard to credits to the County, payments to the Contractor or equipment and materials to be substituted, shall be final.

FIRE HYDRANT UTILIZATION

Fire hydrant permits must be obtained if water is required from a hydrant. No water is to be drawn from a public fire hydrant except through a meter. Applications are made through the Department of Permits Approval & Inspection (PAI). All costs are considered incidental to the cost of items bid. The Contractor is responsible for keeping water use records and providing this information to the Inspector. Failure to return the meter in good condition or utilization of the meter provided for any other purpose will be grounds for assessment of associated costs against the Contractor as liquidated damages.

ENVIRONMENTAL PROTECTION

The Contractor, and his subcontractors, in the performance of this Contract, shall comply with all applicable Federal, State and local laws and regulations concerning environmental pollution control and abatement as well as the specific requirements stated elsewhere in the Contract Documents.

The Contractor shall take all precautions necessary in order to avoid pollution of water in adjacent watercourses or water storage areas, including wells.

All earthwork, equipment movement, control of water in excavations and other operations that may create silting, shall be conducted in a manner to keep water pollution to an absolute minimum.

Water used during the Contract work which has become polluted with oil, harmful or objectionable chemicals, sewage or other pollutants, shall be disposed of in a manner that will not affect nearby waters and land. The Contractor shall not, under any circumstances, discharge pollutants into any watercourse.

The Contractor shall take all precautions necessary in order to avoid noise and air pollution during the course of the Contract.

The Contractor shall maintain all work areas free from dust that would contribute to air pollution. Approved temporary methods of stabilization consisting of sprinkling, chemical treatment, or similar methods will be permitted to control dust. Sprinkling, where used, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times. Dust control shall be performed as the work proceeds and whenever the dust nuisance or hazard occurs. The use of road oils and waste oils to control dust is prohibited.

The Contractor shall keep clean all streets, driveways and sidewalks affected by his operations. Trucks hauling excavated materials, cement, sand, stone, or other loose materials from or to the site shall be tight so that no spillage will occur. Before trucks start away from the site, their loads shall be carefully trimmed to prevent spillage.

The Contractor shall provide all labor, materials, equipment and services necessary for, and incidental to, the complete and satisfactory application of temporary sediment control measures throughout the time of the Contract as specified herein.

In order to prevent and to provide for abatement and control of any environmental pollution arising from the construction activities of the Contractor and his subcontractors in the performance of the Contract, the Contractor and his subcontractors shall comply with all applicable Federal, State and local laws and regulations concerning environmental pollution control and abatement.

It shall be the Contractor's responsibility to adhere to the "Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas" as approved and adopted by the State of Maryland, Department of Water Resources, an agency of the Department of Natural Resources; and furthermore, the Contractor also shall adhere to the provisions of the Standard Specifications, Section 308, and any revisions thereof or additions thereto and all sections referred to therein.

The Contractor shall notify the County's Project Engineer indicating the source of all borrow material and the disposal site for excess material. The Contractor shall be responsible for

obtaining sediment control permits from the appropriate agency for off-site disposal of excess material.

Surface drainage from cuts and fills within the construction limits, whether or not completed, and from borrow and waste disposal areas shall, if turbidity producing materials are present, be held in suitable sedimentation ponds or shall be graded to control erosion within acceptable limits. Temporary erosion and sediment control measures, such as berms, dikes, silt fences, drains or sedimentation basins, if required to meet the above standards, shall be provided and maintained until permanent drainage and erosion control facilities are completed and operative. The area of bare soil exposed at any one time by construction operations shall be held to a minimum. Fills and waste areas shall be constructed by selective placement of materials to eliminate silts or clays on the surface that will erode and contaminate adjacent rivers, streams, lakes, or ponds. Further protection of any excavation storage area, waste area, or fill area shall be provided by the Contractor by the installation and maintenance of a silt fence, as shown on the Contract Drawings, around the down slope perimeter of such areas.

The cost for any excavation and/or fill and incidentals involved in connection with the construction of erosion, sediment and pollution control devices required on this project shall be included in the prices bid in the Contract.

In general, the Contractor shall erect sediment control devices prior to beginning any other earthwork under the Contract. Areas through which vehicular access to and from the site will be gained shall be stabilized by the Contractor in accordance with the Standard for Stabilized Construction Entrance. Swales, ditches, stockpiles of earth and topsoil and other cleared or graded areas shall be temporarily stabilized with seed and mulch. All areas disturbed by the Contractor shall be seeded and sodded to the satisfaction of the Engineer.

Temporary Drainage

The Contractor shall conduct his work in such a manner that the efficiency of the existing surface drainage and pipe storm drain system will not be diminished.

The Contractor shall keep all drainage and water courses unobstructed, or provide equal courses effectively placed, to prevent accumulations of surface water.

Stream Flow Protection

The dewatering or pumping out of trenches, utility line structures, or newly excavated areas directly into a stream which causes turbidity and/or erosion of stream banks will be prohibited. The Contractor shall make use of sediment traps, filters or other methods a stated in "Erosion and Sediment Control Provisions," included in Section 308 of the Standard Specifications and Materials for Construction. The restrictions contained herein shall be strictly enforced, and the Contractor is cautioned to make every effort possible to comply with these regulations and shall conduct his operations in such a manner to keep to an absolute minimum the amount of sedimentation introduced into any stream.

Upon completion of the project and after such devices have served their purpose, such devices shall be removed from the project by the Contractor at his own expense.

The Contractor shall not allow the site of the work to become littered with trash and waste materials but shall maintain the site in a neat and orderly condition throughout the period of the work. Cleaning up, including the restoration of areas of construction, shall proceed as quickly as is practicable after the construction is completed in any given area. This period, between construction completion and final cleanup, normally shall not exceed two (2) weeks.

Within ten (10) days after completion of the work and before final acceptance, the Contractor shall, without charge, tear down and remove all temporary structures built by him, remove all rubbish of all kinds from any ground which he has occupied, and shall leave the work site in a clean and orderly condition.

If at any time during the course of the work, the cleanup operation in any given area should become delinquent in the opinion of the Engineer, he may order that construction be stopped until such delinquent cleanup is completed.

The Contractor shall not be entitled to any additional compensation or extension of time of completion should such stoppage of construction be ordered by the Engineer.

Burning will be allowed only if approved in writing by the Fire Marshal and authorized in writing by the Engineer. The specific time, location and manner of burning shall be subject to the approval of the Engineer. Fires shall be confined to a closed vessel, guarded at all times, and shall be under constant surveillance until they have burned out or have been extinguished. MI burning shall be so thorough that the materials will be reduced to ashes.

GUARANTEE

The Contractor shall guarantee all materials and equipment furnished and work performed for a period of two (2) years from the date of the Division of Construction Contracts Administration (DCCA) acceptance letter for that work. The Contractor warrants and guarantees that the completed work is free from all defects due to faulty materials, equipment and workmanship and is in every way fit for the use intended, including but not necessarily limited to, the following:

Against all faulty or imperfect materials and equipment, subsidence of fill, backfill and embankment, vegetative stabilization and against all imperfect, careless and/or unskilled workmanship

That work performed under this Contract, including all mechanical and electrical equipment, appurtenances and every part thereof, shall operate, with due care and maintenance, in a satisfactory and efficient manner in accordance with the requirements of these Contract Documents.

Where manufacturer's equipment warranties required elsewhere herein are in effect for a

period longer than the Contractor's guarantee period, the County shall be named beneficiary of said warranties; and the Contractor shall furnish the County with a copy of said warranty.

That all structures and equipment designed to hold or convey water or prevent the entrance of water shall be watertight and leakproof at every point in accordance with their intended use.

No use or acceptance by the County of any part of the work, nor failure to use same, nor any repairs, adjustments, corrections or replacements made by the County due to the Contractor's failure to comply with any of his Contract obligations, or other corrections made by the County shall modify in any way the guarantee obligations of the Contractor under the Contract Documents.

The Contractor shall promptly make corrections as necessary by reason of such defects, including damage to other parts of the work resulting from such defects. The Contractor agrees to replace with proper workmanship, materials and equipment, and to correct and repair without cost to the County, any work which does not operate satisfactorily nor performs as specified, does not conform to the Contract Documents or is otherwise improper or imperfect. Exceptions will be made only for damage resulting from direct negligence of County personnel or that due to normal wear and tear. In the event the Contractor fails to properly perform such repairs or corrections or other work made necessary by such defects, the County may do so and shall charge the Contractor for costs incurred.

PROGRESS MEETINGS

The Contractor shall hold monthly "progress meetings" at the site, at a time suitable to the Engineer, at which the progress of the work shall be reported upon in detail with reference to schedules. Each interested subcontractor shall be required to have present a competent representative to report the condition of his branch of the work and to receive instructions. Minutes of these "progress meetings" shall be taken by the Contractor who shall type them for distribution to members of the conference, the Bureau of Engineering and Construction and other interested persons. These minutes shall be received by all parties prior to the next scheduled "progress meeting." All cost to be included in other items bid.

PRESERVATION AND RESTORATION OF PROPERTY

The Contractor's attention is directed to Section GP-7.11 of the Standard Specifications which defines his responsibility for restoration of all public and private property affected by the prosecution of work.

DISPOSAL OF EXCESS SOIL AND DEMOLITION MATERIALS

All excavated material not required or unsuitable for backfill or other designated purposes shall be removed from within the limits of the work and disposed of by the Contractor at his own expense.

TEMPORARY MULCHING

- A. All non-paved areas disturbed (except wetlands) will receive temporary mulching. Temporary mulching will be placed after completion of sewer construction and before final restoration. Areas subject to redisturbance shall receive temporary mulching as directed by the Engineer. (Wetlands will be restored as noted on drawings and will not be redisturbed.)
- B. All cost for temporary mulching shall be included in the unit price bid for sewer pipe installation.

SITE VIDEO

The Contractor shall video tape the entire construction route prior to construction and shall provide two (2) copies of the video to the Chief, Construction Contracts Administration Division. Cost of the video will not be a pay item but must be included in other items bid, and no additional compensation to the Contractor will be considered.

EXCAVATION SUPPORT SYSTEM

- A. The Contractor shall support the sides and ends of all excavations with sheeting, shoring, stringers, trench boxes or other methods of the type, size and quality required for either temporary or permanent support. The Contractor shall submit details of his excavation support system and design computations prepared by and sealed by a Professional Engineer registered in the State of Maryland. The Engineer must approve the support concept, and the Contractor will be entirely responsible for the design and adequacy of the approved excavation support system.
- B. The temporary excavation support systems shall be removed as refilling proceeds in a manner so as not to damage any pipelines, structures, roadbed, fill or property. The Contractor shall be entirely responsible for the condition of all excavations made by him for the entire period of the Contract. All slides, caves or other unacceptable conditions shall be promptly corrected, whenever they may occur, without extra compensation.
- C. Cost of the excavation support system shall be included in the cost of pipe installed.

DEWATERING, DRAINAGE AND PUMPING

- A. The Contractor shall submit for approval his procedure for any dewatering. The Contractor shall design, furnish, install, maintain and operate all necessary dewatering equipment and structures at the Contractor's expense.
- B. The Contractor shall design his dewatering system to insure that trenches remain open and conform to OSHA standards for safety. Disposal of drainage water from dewatering devices shall be accomplished in a manner that conforms to Maryland Standards and Specifications for Soil Erosion. No water shall be discharged to a sanitary sewer.
- C. The Contractor shall design his dewatering system so that the dewatering is localized to the construction area. The Contractor shall be responsible for all damage and shall assume all expense for any buildings, structures, walls, poles, etc., that are affected by the dewatering.

REHABILITATION AT FORCE MAIN DISCHARGES

Many of the pipe and manhole assets that require rehabilitation work are located at or downstream of a force main discharge manhole. The Contractor must coordinate all work which may impact pump station flows with the Baltimore County Pumps Division (410-663-9362) 2-weeks before the start of any work. Refer to the notes within the Contract Drawings for additional information.

EXISTING UTILITY FACILITIES

Existing utilities shown in the Contract Drawings are from available records and are shown for the Contractor's convenience only. Baltimore County Department of Public Works and Transportation does not guarantee in any way the completeness or accuracy of the information given and shall be held harmless from any claims arising from damage to such facilities in the course of the work. The Contractor shall satisfy himself as to the presence of utilities and will take appropriate precautions to prevent damage and will maintain utility service during the performance of the work. The Contractor shall be liable for any damages to existing utilities caused by his operations as stipulated in Section GP-5.05.

ROAD REPAIR SPECIAL PROVISIONS

A. <u>Road Repair</u> — Compensation for road repair shall be based on actual trench width called for in the Standard Specifications. Any damage outside those limits caused by installation of the utility or construction traffic related to the project shall be repaired in kind at the Contractor's expense.

B. <u>Maintenance of Trench Repair</u> — All trenches shall be maintained and kept in as good as possible condition by the Contractor during construction, On projects where the trenches are backfilled with compacted native material, the Contractor will be paid under the appropriate line item(s) for the initial repair. If that repair fails due to "pumping" of the native material placed in the trench, the Contractor shall be compensated for his restoration. If the repair fails due to settlement of the trench, the repair shall be made at the Contractor's expense.

In trenches where borrow material is used, repairs shall be made and compensated for in accordance with the Standard specifications. Any failure or settlement of these repairs shall be restored at the Contractor's expense.

C. <u>Final Paving</u> - Final bituminous overlay in state roads shall be done by a prequalified contractor with an A-2 classification (at time of bid) as approved by the Baltimore County Bureau of Engineering and Construction. Temporary paving does not apply.

BORINGS AND TEST PITS

- A. If borings have been completed, the test boring logs presenting physical data on subsurface conditions are for information purposes only. Neither Baltimore County nor the Engineer warrants or guarantees that the conditions and/or any part thereof will be the same as shown by the test borings. If the Contractor relies for any purposes upon said information, he does at his own risk.
- B. Bidders are urged to make their own subsurface exploration upon approval of written application. The cost of this exploration shall be at their own expense.
- C. Soil borings, or test pits, for soil determination in improved roads are not to be excavated by the Contractor unless prior application is made by the Contractor and permit is issued by the Baltimore County Bureau of Highways and Traffic Operations.
- D. All known subsurface lines, pipes, conduits, and structures are shown on the plans and profiles. These lines are shown based upon the best available plans and maps. The locations have not been verified by test pits, and Baltimore County assumes no responsibility for the accuracy of the drawings. In any area where the Contractor must make connections to or cross existing lines, it shall be his responsibility to test pit the lines and to verify the locations to his satisfaction. In the event that lines are not found located as shown on the plans, the Contractor shall notify the Engineer so that an evaluation may be made to determine the magnitude and method of any adjustments made to the plans.

E. The Contractor solely shall be responsible for any damage to any underground or aboveground lines encountered in any manner during construction. When crossing and working in the vicinity of existing lines, it will be the Contractor's responsibility to properly support and maintain the operation of the lines. Extreme care must be exercised in excavation and refill operations. The Contractor will correct, at his own expense, any damage caused to existing lines.

STEEL PLATING AND SOLID SHEETING

- A. If steel plates are used, they shall be used to cover open trenches in roadways during nonworking hours. The cost for this work, material, labor, etc., shall be included in the lump sum price for Maintenance of Traffic.
- B. If steel plates are used, solid sheeting and shoring shall be used for the limits of the steel plating. The cost for this work, material, labor, etc., shall be included in the unit price bid for sanitary sewer pipe.

MAINTENANCE OF TRAFFIC

- A. A minimum single lane of traffic is required to be maintained at all times on all roadways. Single-lane operations will only be allowed between the hours of 9:00 a.m. until 3:00 p.m.on the following roadways: Wise Avenue, Lynch Road and North Point Road. There are no time restrictions for weekend lane closures.
- B. At the end of each workday, the Contractor is required to complete the following:
 - 1. Backfill and/or plate over all open excavations so that two lanes of traffic are maintained.
 - 2. Remove all equipment and material from the traveled portion of the roadway. Also, equipment and materials should not be stored in such a manner as to obstruct sight distance at any driveway or intersecting road.
 - 3. Cover or remove all signs referring to a single-lane operation. Also, it may be necessary for the Contractor to provide "STEEL PLATES AHEAD" signs on each approach to the construction area, if appropriate, or as directed by the inspector for the project.
- C. All existing driveway access must be maintained at all times.
- D. Work being proposed within SHA right-of-way, including North Point Boulevard (MD 151), must be reviewed by SHA District 4.

- E. The Contractor is to be responsible for the fabrication, installation and maintenance of all traffic control devices. Said devices shall be in accordance with the Manual on Uniform Traffic Control Devices. Also, the Contractor may be required to furnish additional signs should conditions warrant. Regarding the control of traffic through work areas, Part 6 "Temporary Traffic Control" of <u>The Manual on Uniform Traffic Control Devices</u> (Latest Edition) shall be utilized.
- F. Once the Contractor has received their notice to proceed, the Division of Traffic Engineering will inventory the existing permanent traffic control devices throughout the construction area. Should it be necessary for any devices to be removed by the Contractor, his personnel, or their subcontractor during construction, the Contractor shall be responsible for the safe storage of these devices. Should they become damaged, defaced, lost, etc., the Contractor will be billed for replacement of these permanent devices. The Contractor will also be responsible for the re-installation of any permanent devices removed during construction.

PROJECT SCHEDULING REQUIREMENTS

Within ten (10) working days after the date of award, the Contractor shall submit to the County for the County's review and approval the information identified in this contract as submittals following award. Failure to do so may be grounds for termination of contract. If this deadline is not met, the Contractor shall schedule a meeting with the County to discuss this failure. The **Contractor will not be able to begin any other aspect of the Contract Work, including, but not limited to, any physical portions of the Contract Work, until all Contract submittals are complete and approved by the County. Five copies of the Contract submittals are required. However•, Contract Time will begin to run within fifteen (15) working days from the date of Notice to Proceed, even if the Contractor has not yet completed all submittals and is therefore prevented from beginning any other Contract Work. No additional Contract Time will be awarded to the Contractor for any and all delays caused, directly or indirectly, by the Contractor's failure to complete and receive County approval for all Contract submittals.**

The following section shall replace and supersede Section GP-8.04 of the Baltimore ounty Standard Specifications for Construction and Materials.

Section GP-8.04: Prowess Schedule Requirements

A. GENERAL

1. Scheduling of construction is the responsibility of the Contractor. The Contractor must take all reasonable action to avoid or to mitigate the effects of delays including, but not limited to, rescheduling or resequencing the work, accepting other work, and reassigning personnel. When the Contractor is responsible for any delays, the County may order the Contractor to accelerate construction, work overtime, add additional shifts or manpower, work on weekends, or to do anything

else reasonably necessary to complete the work on time, at no additional cost to the County.

- 2. The Contractor shall submit to the County for review and approval a Baseline Schedule, Monthly Progress Schedules, and any required Recovery Schedules as outlined in paragraph (2) through paragraph (6) of this section.
- 3. Failure of the Contractor to comply with the requirements of this section shall be grounds for determination by the County that the Contractor is not prosecuting the work with due diligence as to ensure completion of the Work within the time specified in the Contract Documents or as agreed upon with the County after execution of the Contract. The County may terminate the Contractor's right to proceed with the work, or any separable part thereof, in accordance with Section GP-8.08 of these General Provisions.
- 4. The Contractor does not have the unilateral right to complete the work late and pay liquidated or other damages.

B. BASELINE SCHEDULE

- 1. The Contractor shall submit to Baltimore County a detailed Baseline Schedule indicating the time allocated by the Contractor for performance of each portion of the work. The schedule shall show commencement of work from the date the Notice to Proceed is issued. The schedule shall show completion of the work within the Contract time as specified in the Contract Documents or as agreed upon with the County after execution of the Contract.
- 2. The submitted Baseline Schedule shall be properly and reasonably sequenced to show the order of performing the various tasks of work. The schedule shall clearly identify the sequencing restraints and the critical activities necessary to complete the work on time and shall list proposed workdays, holidays and any special non-work days.
- 3. The submitted Baseline Schedule shall list the dollar value for each work item and shall show the Contractor's labor requirements for achieving each work item. The schedule shall also include a list of submittals related to material and equipment fabrication orders, permits, easements and any other work tasks requiring submittals. Each necessary submittal shall be shown on the schedule as a separate work activity with necessary dates of submittal, anticipated review and response time, anticipated dates of re-submittal if necessary, and anticipated dates for final review and approval.
- 4. Within 14 calendar days after the County reviews and rejects or conditionally approves the submitted Baseline Schedule, the Contractor shall make all necessary corrections and resubmit the corrected schedule. Baltimore County may decline to issue Notice to Proceed until the Contractor submits the required schedule and the County approves it.

C. SUBSEQUENT MONTHLY PROGRESS SCHEDULES

- 1. Within 30 days after the County issues Notice to Proceed, and on monthly basis thereafter, the Contractor shall submit a revised Monthly Progress Schedule accurately updated to reflect all revisions to the previously submitted schedule including actual commencement dates of listed work activities, actual work activities completed to date, and any sequence changes made or planned for the order of work activities and their effect on the critical path for completion of the whole project. The sequencing changes shall show extension of times granted by Baltimore County and any delays or early completion of work activities.
- 2. The Contractor shall meet with the County, or its designated attendee, at least once a month to discuss in detail the Contractor's updating of the Monthly Progress Schedule and the necessity for revision or correction in the schedule.
- 3. Within 10 calendar days after the County reviews and rejects or conditionally approves the submitted Monthly Progress Schedule, the Contractor shall make all necessary corrections and resubmit the corrected schedule.
- 4. The Contractor shall submit the required Monthly Progress Schedule whether or not the Contractor submits an application for payment each month. Baltimore County may decline to process any pending payment requests for this project until the Contractor submits the required schedule and the County approves it.

D. RECOVERY SCHEDULES:

- 1. Within 10 calendar days after the project falls behind schedule or is alleged by either party to be behind schedule, the Contractor shall furnish to the County, at no additional cost, a revised schedule hereinafter called a "Recovery Schedule". The Recovery Schedule shall show how the Contractor will finish the project by the Contract completion date.
- 2. The Recovery Schedule shall include all of the information required under paragraphs (2), (3), and (5).

E. LOGICAL SEQUENCING AND LAYOUT OF THE SUBMITTED SCHEDULES (CPM SCHEDULES):

1. Unless the Contract Documents expressly permit the Contractor to use a schedule other than a Critical Path Method (CPM) schedule, the submitted Baseline Schedule, the subsequent Monthly Progress Schedules, and any required Recovery Schedules shall all be CPM schedules.

- 2. CPM schedules are required to assure adequate planning and execution of the workand in evaluating the progress of the work and the impact on the schedule events, which could affect the completion date.
- 3. The submitted CPM schedules shall clearly designate the Substantial Completion Date of the project. This is the date when the construction project or specified part thereof is sufficiently completed, in accordance with the Contract Documents, such that the project or specified part thereof can be used to accomplish the purposes for which it was intended.
- 4. Logic or network diagrams shall show the order and interdependence of activities and the sequence in which work is to be accomplished as planned by the Contractor. These diagrams must show how the start of a given activity is dependent on preceding activities and how its completion restricts the start of the following activities.
- 5. At a minimum, the following information shall be furnished for each work activity:
 - (i) Activity number
 - (ii) Description of activity
 - (iii) Activity numbers for any predecessor and successor activities
 - (iv) Relationships with preceding activities
 - (v) Activity duration in Calendar days
 - (vi) Percent of activity completed
 - (vii) Early start date (by calendar date)
 - (viii) Early finish date (by calendar date)
 - (ix) Actual start date (by calendar date)
 - (x) Actual finish date (by calendar date)
 - (xi) Float or slack (by calendar date)
- 6. The Monthly Progress Schedules and any required Recovery schedules shall show the activities or portion of the activities completed during the reporting period and their total dollar value as basis for the Contractor's periodic request for payment. For each activity, the update shall state the percentage of work actually completed and the progress along the critical path in terms of days ahead or behind the allowable dates.
- 7. The Monthly Progress Schedules and any required Recovery schedules shall include a comments section summarizing the updated analysis for the project as a whole, describing problems with work activities, and explaining proposed corrective actions.
- 8. Approved change orders shall be reflected as new activities or as change in logic and/or time framing of existing activities. They shall be shown on the updated schedule that immediately follows a receipt of a Change Order Approval from the County.

F. FORM OF SCHEDULE SUBMITTAL:

All schedules, including the Baseline Schedule, the Monthly Progress Schedules, and any required Recovery schedules shall be submitted in three paper copies and one copy on CD.

FORCE MAJEURE AND DAMAGES

- A. "Force Majeure" means, for the purposes of this Contract, and event arising from causes beyond the control of the Contractor and County which delays or prevents the performance of any obligation under this contract. Unanticipated or changed financial circumstances of the Contractor shall not, in any event, be considered a Force Majeure event.
- B. The Contractor shall file written notice to the County within fifteen (15) calendar days after the Force Majeure event is known or should have been known to the Contractor, whichever is earlier. The Contractor's written notice shall include, but not be limited to, a description of the event and an explanation of the reasons for the delay, the anticipated duration of the delay, all actions taken or to be taken to prevent or mitigate the delay or the effect of the delay, the timetable by which those measures will be implemented, whether the Contractor claims that the delay should be excused as a Force Majeure event, and the Contractor's rationale for attributing such delay to a Force Majeure event if the Contractor intends to assert a claim. Furthermore, the Contractor is required to state what steps are being taken to ensure completion and shall supply any and all documentation available to show what steps have already been taken. Contractor shall also comply with all other County statutes, regulations and requirements in connection with any such manner.
- C. If a delay of performance is, or was, caused, in the sole discretion of the County, by a Force Majeure event, the time for performance of the construction shall be extended for a period to compensate for the delay resulting from such event. Extensions of a completion date based on a particular event shall not automatically extend any other completion date under this Contract. The Contractor shall make a showing of proof by a preponderance of the evidence that the Force Majeure event was the cause of the delay in performance for each requirement or completion date for which an extension is sought. In the event of a dispute regarding application of this Special Provision to a delay in performance, the Contractor shall comply with all County statutes, regulations, and requirements and shall have the burden of proving by preponderance of the evidence that the delay is, or was, caused by a Force Majeure event, and that the amount of additional time requested is necessary to compensate for that event.
- D. The Contractor is also notified that copies of any reports, plans, permits, and documents related to this Contract shall be maintained for a period of 5 years from the date of Award.

- E. The Contractor understands that TIME IS OF THE ESSENCE UNDER THIS CONTRACT. In the event the Contractor fails to achieve Final Completion and Final Acceptance (as defined in the Specifications) as required by this Contract, then the Contractor shall pay the County the sum of Two Thousand Dollars (\$2,000.00) for each Calendar Day (day 1 through 30) after the expiration of the Contract Period; and Three Thousand Five Hundred Dollars (\$3,500.00) for each Calendar Day (day 31 through 60) after the expiration of the Contract Period; and Six Thousand Five Hundred Dollars , (\$6,500.00) for each Calendar Day (day 61) and thereafter until the Contractor achieves Final Completion and Final Acceptance of the Project. The Contractor agrees that:
 - 1. These Liquidated Damages are a reasonable estimate of the County's damages solely due to the public's loss of use of the Project during the delay period and are not a penalty.
 - 2. It is very difficult, if not impossible, to accurately measure the damages to the County due to the public loss of use of the Project during the delay period.
 - 3. Notwithstanding GP8.09 of the Baltimore County Standard Specifications for Construction, in addition to the damages due to the public's loss of use of the Project during the delay period, the County is likely to incur additional direct costs during the delay period, including but not limited to, costs for construction management, consultants, architectural services, office trailer and supplies, utilities, County employees' time, County vehicles, and such other costs that the County will incur to continue administration of the construction and the Contract during the delay period, all which will be monitored by the County, and if so required by the County, the Contractor shall pay such actual damages incurred during the delay period. THE PARTIES HERETO UNDERSTAND AND AGREE THAT CONTRACTOR'S OBLIGATION TO PAY THE COUNTY FOR ACTUAL DAMAGES DURING THE DELAY PERIOD SHALL BE EN ADDITION TO THE CONTRACTOR'S OBLIGATION TO PAY THE LIQUIDATED DAMAGES DUE TO THE PUBLIC'S LOSS OF USE OF THE PROJECT.
 - 4. The County shall have the right, but not the obligation, to deduct the Liquidated Damages due to the public's loss of use of the Project, and the County's actual costs and costs to continue administration of the construction and the Contract, from any monies due or any monies that may become due to the Contractor.

WORK ON BALTIMORE COUNTY PUBLIC SCHOOLS GROUNDS

For all work on the grounds of Baltimore County Public Schools, the following Contractor criteria must be met.

A. DRUG, TOBACCO, AND ALCOHOL

- 1. All Baltimore County Board of Education and BCPS properties are "drug, tobacco, and alcohol free zones" as designated by federal, state and local laws and by Board of Education policy. Neither the Contractor nor any of the Contractor's employees, subcontractors or agents will be permitted to have any illegal drugs; tobacco products; or alcohol products while performing their duties under this Contract and while working on Board of Education and BCPS property. Use or possession of illegal drugs, tobacco products, or alcohol products on school property will result in immediate removal of the offending individual(s). BCPS reserves the right to issue, at a minimum, a verbal directive to the offending individual(s) to comply with this prohibition and to cease use. The Contractor will be notified in writing of any violation(s).
- 2. Any subsequent offense by any individual or individuals may result in a permanent ban from the project for the offender(s), with appropriate formal notice to the Contractor. BCPS reserves the right to document any offenses in the Contractor's file maintained by the Office of Purchasing. BCPS further reserves the right to address any substance use infraction by any means it deems necessary, up to and including termination of the Contract. In the event that a Contract is terminated as a result of a substance abuse infraction, BCPS will provide an "unsatisfactory" reference when references are requested.

B. CRIMINAL BACKGROUND CHECK

- 1. Award Bidder shall be responsible for ensuring that all employees assigned to BCPS sites, either employed by Award Bidder or their Sub-contractor(s), have successfully passed a criminal background check and fingerprinting. The Award Bidder shall advise the BCPS of the intention to use any employees, including sub-contractor employees that are hired or obtained from any penal pre-release or work-release programs. In the event such employees are used, notification to BCPS shall include name and violation for each individual. The contractor shall take reasonable precautions when selecting such individuals and provide whatever safeguards are necessary for effective supervision. Such employees are not permitted inside school buildings when the nature of the contract is for outside work. Please see accompanying forms for information and process.
- 2. Bidder's employees that have unsupervised or direct access to children or that are assigned duties in a school where unsupervised contact with children is likely, are required to be fingerprinted by BCPS and will complete the Background Investigation process with the exception of the I-9 form. The cost will be borne by

the Award Bidder and all records will remain in the control and custody of the school system. The school system reserves the right to reject the Bidder's employees based on information received from said background investigations.

- 3. Bidder's employees who will work at facilities where no contact with children is anticipated are not required to be fingerprinted, however, such employees will complete the Background Check Application form and Authorization and Release for the Procurement of an Investigative Consumer Report. A Consumer Investigative Report (Commercial Background Check) will be prepared on each of these employees. The cost will be borne by the Award Bidder. Further instructions for this process will be provided to the Award Bidder.
- 4. Due to the many before and after-school activities, which occur at all BCPS schools, contractors shall assume that it is likely that each of their employees working on the BCPS school site may have unsupervised or direct access to children.
- 5. Refer to attachment following this section for additional information including cost and scheduling information.

C. EMPLOYMENT OF CHILD SEX OFFENDERS

Maryland Law requires certain child sex offenders to register with the State and with the local law enforcement agency in the county in which they will reside, work and/or attend school. Section 11-722(c) of the Criminal Procedure Article of the Annotated code of Maryland states, "A person who enters into a contract with a County Board of Education or a non-public school may not knowingly employ an individual to work at a school if the individual is a registrant. A person who violates this section is guilty of a misdemeanor and on conviction is subject to imprisonment not exceeding five years or a fine not exceeding \$5,000 or both." If a child sex offender, as determined by the definitions contained in the Criminal Law Article of the Annotated Code of Maryland, is employed by the Award Bidder, the Award Bidder is prohibited from assigning that employee to perform management, delivery, installation, repair, construction or any other type of services on any BCPS property, including the project property. Violation of this provision may result in Termination for Cause.

D. INTERRUPTIONS OF BUILDING SYSTEMS

- 1. The contractor shall contact "MISS UTILITY" to have any and all utilities marked in the affected areas of the site prior to any excavation to avoid interruptions of utility service to the facility.
- 2. Interruptions to the domestic water service, fire alarm system, electrical service an/or systems, intercom system, or any other system required to sustain the school's normal program and activities must be scheduled when the school is not occupied by students and staff. Such interruptions shall be scheduled a minimum

of seven calendar days in advance of the interruption. All services must be operational when the school is occupied by students and staff. The heating system must be in operation between October 15 and April 15 and the cooling system must be in operation between April 16 and October 14 for occupied areas.

- 3. Contractor is responsible for assuring the proper operation of all systems in occupied areas during any interruptions.
- 4. To minimize disruptions to the school, the work to replace/retrofit the various electrical panels (as indicated on the drawings) should occur when the school is not occupied by students and/or staff.
- 5. The Contractor is responsible to re-light all pilots which are extinguished during any interruption to the building gas services. BCPS will inform the Contractor as to the location of these pilots.

E. SCHOOL CALENDARS

- 1. The following days are total system closure without custodial coverage available:
 - a. New Year's Day
 - b. Martin Luther King Jr.'s Birthday
 - c. Presidents' Day
 - d. Good Friday
 - e. Easter Monday
 - f. Memorial Day
 - g. July Fourth
 - h. Labor Day
 - i. Rosh Hashanah
 - j. Yom Kippur
 - k. Thanksgiving
 - 1. Christmas Eve
 - m. Christmas Day
 - n. New Year's Eve
 - o. Election Day
 - Contractors are not permitted on school property after 4 PM the day before Election Day.
 - Contractors are not permitted on school property on Election Day.
 - Contractors are not permitted on school property before 7 AM the day after Election Day.
 - Contractor must verify the space(s) being used for election activities are accessible (including parking and access to the voting space and restrooms) and have utilities available to perform election functions.
- 2. The current school calendar for the academic years are found on the BCPS website. Please note these calendars are subject to change by the Board of Education.

- 3. Ending or extension date of the school term may occur depending on the number of emergency closing days required during the school calendar year.
- 4. For updated information, please visit: <u>https://www.bcps.org/calendars</u>.

BALTIMORE COUNTY PUBLIC SCHOOLS

Darryl L. Williams, Ed.D. • Superintendent • 6901 North Charles Street • Towson, MD • 21204

August 21, 2019

To All Contractors:

This letter is to remind you of your responsibility to comply with Section 11-722 of the Criminal Procedures Article, Annotated Code of Maryland, regarding sex offenders, and asking you for a letter of assurance that your work force is in compliance with the law. Thank you in advance for sending the information as requested.

Effective July 1, 2015, amendments to §6-113 of the Education Article of the Maryland Code further require that a contractor or subcontractor for a local school system may not knowingly assign an employee to work on school premises with direct, unsupervised and uncontrolled access to children, if the employee has been convicted of, or pled guilty or nolo contendere to, a crime involving:

a) A sexual offense in the third or fourth degree under §3-307 or §3-308 of the Criminal Law Article of the Maryland Code or an offense under the laws of another state that would constitute an offense under §3-307 or §3-308 of the Criminal Law Article if committed in Maryland;

b) Child sexual abuse under §3-602 of the Criminal Law Article, or an offense under the laws of another state that would constitute child sexual abuse under §3-602 of the Criminal Law Article if committed in Maryland; or

c) A crime of violence as defined in §14-101 of the Criminal Law Article, or an offense under the laws of another state that would be a violation of §14-101 of the Criminal Law Article if committed in Maryland, including: 1) abduction; 2) arson in the first degree; 3) kidnapping; 4) manslaughter, except involuntary manslaughter; 5) mayhem; 6) maiming; 7) murder; 8) rape; 9) robbery; 10) carjacking; 11) armed carjacking; 12) sexual offense in the first degree 13) sexual offense in the second degree; 14) use of a handgun in the commission of a felony or other crime of violence; 15) child abuse in the first degree; 16) sexual abuse of a minor; 17) an attempt to commit any of the crimes described in items 1 through 16 of this list; 18) continuing course of conduct with a child under §3-315 of the Criminal Law Article; 19) assault in the first degree; 20) assault with intent to murder; 21) assault with intent to rape; 22) assault with intent to rob; 23) assault with intent to commit a sexual offense in the second degree. In addition to the above, Baltimore County Public Schools considers the following felony crimes as permanent barriers: 1) burglary first degree; and 2) burglary second degree.

The amendments to §5-561 of the Family Law Article of the Maryland Code mandate that each contractor and subcontractor shall require that any individuals in its work-force must undergo a criminal, fingerprint-based, background check if the individuals will work at a Baltimore County Public Schools (BCPS) property. The term "work-force" refers to all of the contractor's employees that the contractor uses to perform the work required by the contract. Prior to undergoing a criminal, fingerprint-based background check, any individual potentially being sent to work on BCPS property, should be made aware of the criminal history in §6-113 of the Education Article of the Maryland Code which would prohibit the employee from working on BCPS property. If an employee has criminal history as described in the Maryland Code, they may not work on BCPS property and should not be sent for fingerprinting.

These requirements will be implemented immediately beginning with all new contracts and provisions to this effect will be incorporated into all BCPS procurement bids and requests for proposals. These requirements will apply to all BCPS contractors working on BCPS property.

All individuals in your work-force who meet these criteria are required to be fingerprinted for BCPS at CJIS-Central Repository located at 6776 Reisterstown Road, Suite 102, Baltimore Maryland 21215 or at one of the approved private providers, which can be found at: https://www.dpscs.state.md.us/publicservs/fingerprint.shtml. The contractor's employees will need to request to be fingerprinted for "childcare" and use the code 9000017493. The contractor will provide to BCPS (within 10 business days of fingerprinting), a copy of the Response Form for Required Criminal Background Checks which lists the names of any individuals in the contractor's work-force who have been fingerprinted to Baltimore County Public Schools. Office of Investigations and Records Management, 6901 N. Charles Street, Building B, Towson, Maryland 21204, or fax to 410-296-2158. A contractor's employee may not begin to work until final clearance by BCPS. BCPS will issue fingerprint clearance cards, which will be sent to the contractor for distribution to the contractor's employees. If after review of the criminal history reports BCPS determines that the contractor's employees are ineligible to work on BCPS property as a result of criminal history, the contractor will be notified by BCPS. BCPS may, in its discretion, deny a member of the contractor's workforce for criminal history as set forth in §6-113 of the Education Article of the Maryland Code, as well as for habitual or recent criminal activity, pending criminal charges or probation that has not yet been fully satisfied.

Thank you for understanding why this requirement is so critical to the safety of all of our students.

Sincerely,

Merril E. Plait, P.E., Director Office of Facilities Construction and Improvement

BACKGROUND CHECK REQUIREMENTS FOR CONTRACTORS SUMMARY DOCUMENT

BACKGROUND CHECK REQUIREMENTS for CONTRACTORS of Baltimore County Public Schools (BCPS)-COMPLETE INSTRUCTIONS with attachments (*8 attachments)

Attached and below please find the information for printing contractors who will work on BCPS property:

- Letter to Contractors* This letter explains the law and information related to fingerprinting of contractor employees.
 - Fingerprinting Providers –All individuals in your work-force who will work on BCPS property are required to be fingerprinted for BCPS at

CJIS-Central Repository located at 6776 Reisterstown Road, Suite 102, Baltimore Maryland 21215

or at one of the approved private providers, which can be found at: <u>https://www.dpscs.state.md.us/publicservs/fingerprint.shtml</u>

- **Fingerprinting Flyer*** *This form must be given to each employee to be taken with them to the fingerprint provider so that BCPS will receive the criminal record reports.*
- **COMAR Barrier Crimes (English and Spanish)*** Anyone with any of the crimes listed on the COMAR Barrier Crimes list will not be permitted to work on BCPS property. Also, anyone with **pending** criminal charges or anyone **currently** on probation will not be permitted to work on BCPS property.
- **Response Form For Required Criminal Background Checks*** This form should be filled out and sent to BCPS **right** <u>after</u> your employees have been sent to be fingerprinted. The form may be faxed, scanned and emailed to Melinda Basler (<u>mbasler@bcps.org</u>) or mailed to the Office of Investigations and Records Management. It should contain the names of each employee that has been sent to be fingerprinted to work on BCPS property.
 - RESPONSE FORMS SHOULD ONLY LIST NAMES ALREADY FINGERPRINTED AND MUST BE RECEIVED WITHIN 10 BUSINESS DAYS OF SENDING EMPLOYEES TO BE PRINTED.
- Authorization and Release Affirmation *-along with the Response Form, you must also include a completed, signed release form for each employee who is fingerprinted. We cannot accept any criminal reports without a signed release affirmation.
 - The attached NONCRIMINAL JUSTICE APPLICANT'S PRIVACY RIGHTS * and PRIVACY ACT STATEMENT* must be distributed to each listed employee. (receipt to be indicated on affirmation form):

Please note the following documents need to be returned to Baltimore County Public Schools, Office of Investigations and Records Management, <u>scan and email</u> to Melinda Basler (<u>mbasler@bcps.org</u>) or fax: 410-296-2158:

- Response form listing all employees who have been printed
- Signed Authorization and Release Affirmation for each listed employee



FINGERPRINT AUTHORIZATION NUMBER: 9000017493 ORI CODE (FOR CHILDCARE): MD 004455Y

This flyer must be taken with you when you go to be fingerprinted for BALTIMORE COUNTY PUBLIC SCHOOLS

All contractors being fingerprinted for Baltimore County Public Schools (BCPS) need to present this flyer when being fingerprinted by the Maryland Criminal Justice System (CJIS) or an approved provider. These codes will allow BCPS to receive a copy of the background check. Once the background check has been received by BCPS and reviewed, a fingerprint card will be mailed to the contractor company. *No contractor's employee is cleared to work on BCPS property until this fingerprint card is received by the contractor company.* PRESENT TO PRIVATE PROVIDER TO BE FINGERPRINTED FOR :

BALTIMORE COUNTY PUBLIC SCHOOLS

DIVISION OF HUMAN RESOURCES

EMPLOYMENT DISPUTE RESOLUTION

OFFICE OF INVESTIGATIONS AND RECORDS MANAGEMENT





COMAR BARRIER CRIMES UNDER MARYLAND LAW, BALTIMORE COUNTY PUBLIC SCHOOLS CANNOT HIRE ANYONE WHO HAS EVER BEEN CONVICTED OF THE FOLLOWING CRIMES:

- Abduction
- Armed carjacking
- Arson
- Assault in the first degree
- Assault with intent to commit a sexual offense in the 2nd degree
- Assault with intent to murder
- Assault with intent to rape
- Assault with intent to rob
- Carjacking
- Child abuse in the 1st degree
- Child abuse of a minor
- Handgun in the commission of a felony or other crime of violence
- Kidnapping
- Maiming
- Manslaughter (except involuntary manslaughter)
- Mayhem
- Murder
- Rape
- Robbery
- Sexual abuse of a Minor
- Sexual offense in the 1sT, 2ND or 3rd degree



The Baltimore County Public Schools

CRÍMENES DE BARRERA COMAR BAJO LA LEY DE MARYLAND, LAS ESCUELAS PÚBLICAS DEL CONDADO DE BALTIMORE NO PUEDEN CONTRATAR A NADIE QUE HA SIDO CONDENADO POR LOS SIGUIENTES CRÍMENES:

- Rapto
- Secuestro armado de vehículo
- Incendio provocado
- Asalto de primer grado
- Asalto con intención de cometer una ofensa sexual de 2ndo grado
- Asalto con intención de asesinar
- Asalto con intención de violar
- Asalto con intención de robar
- Secuestro de vehículo
- Maltrato infantil de 1er grado
- Maltrato infantil de un menor
- Uso de una pistola para cometer un delito mayor u otro crimen de violencia
- Secuestro
- Mutilación
- Homicidio (con la excepción de homicidio involuntario)
- Caos
- Asesinato
- Violación
- Robo
- Abuso sexual de un menor
- Ofensa sexual de 1er, 2ndo o 3er gra





BALTIMORE COUNTY PUBLIC SCHOOLS DIVISION OF HUMAN RESOURCES

Employment Dispute Resolution Office of Investigations and Records Management 6901 Charles Street, Building B Towson, MD 21204 Phone: 443-809-8941; Fax: 410-296-2158

Response Form for Required Criminal Background Checks

PLEASE COMPLETE AND RETURN AS SOON AS YOUR EMPLOYEES HAVE BEEN FINGERPRINTED TO: BALTIMORE COUNTY PUBLIC SCHOOLS Office of Investigations and Records Management Confidential Fax to: 410-296-2158

Under Maryland law (§6-113 of the Education Article of the Maryland Code) enacted in July 2015, any contractor or member of the contractor's workforce who will be working on Baltimore County Public Schools (BCPS) property must undergo a criminal background check, including fingerprinting. This law is in conjunction with the Maryland law stating that contractors may not knowingly employ a registered sex offender to work on school property.

RESPONSE FORMS SHOULD <u>ONLY LIST NAMES ALREADY FINGERPRINTED</u> AND MUST BE RECEIVED <u>WITHIN 10 BUSINESS DAYS</u> OF SENDING EMPLOYEES TO BE PRINTED. IF NOT RECEIVED IN THAT TIME FRAME RE-PRINTS AT CONTRACTORS EXPENSE MAY BE REQUIRED.

Only list names for which you are including a signed Authorization and Release Affirmation form.

SECTION 1: CONTRACTOR INFORMATION – to be completed for new contracts and current contract extensions.

Company Name:	
Contact Name:	Phone Number:
Complete Mailing Address:	
Email:	Date employees were printed:

BCPS Work Location: _

SECTION 2: NAMES OF CONTRACTOR'S EMPLOYEES WHO HAVE BEEN FINGERPRINTED

The following individuals have undergone a criminal fingerprint-based background check, specifically for childcare:

Name	Date of Birth	_/	_/
Name	Date of Birth	/	_/
Name	Date of Birth	_/	_/
Name	Date of Birth	_/	_/

SECTION 3: SIGNATURE & RELEASE REQUIREMENTS

THIS FORM MUST BE ACCOMPANIED BY A SIGNED Authorization and Release Affirmation for each name listed.

This documentation confirms that the company's direct employees, and those of any subcontractors and/or independent contractors assigned by this company to perform work on BCPS property under the contract, meet the criminal fingerprint-based background check obligation as specified in Maryland Law, §6-113 of the Education Article of the Maryland Code and are legally authorized to work in the United States in accordance with the U.S. Citizenship and Immigration Services standards of employment eligibility.

Signature:		Date://
Title:	Printed Name:	
		revised 09/20/2019



BALTIMORE COUNTY PUBLIC SCHOOLS DIVISION OF HUMAN RESOURCES Employment Dispute Resolution Office of Investigations and Records Management 6901 Charles Street, Building B Towson, MD 21204 Phone: 443-809-8941; Fax: 410-296-2158

Response Form for Required Criminal Background Checks

Continued: NAMES OF CONTRACTOR'S EMPLOYEES WHO HAVE BEEN FINGERPRINTED

Name	Date of Birth//
Name	Date of Birth//
Name	_Date of Birth//
Name	Date of Birth//
Name	Date of Birth//
Name	Date of Birth//
Name	Date of Birth//
Name	Date of Birth//

revised 09/20/2019

AUTHORIZATION AND RELEASE FOR THE PROCUREMENT OF A **INVESTIGATIVE REPORT FOR CONTRACTOR**

I, (print full legal name clearly) do

hereby authorize **BALTIMORE COUNTY PUBLIC SCHOOLS**, by and through the fingerprint provider to procure a fingerprint-based investigative criminal history records report on me.

The above-mentioned reports include Federal Bureau of Investigation (FBI) and State of Maryland criminal records reports.

I further authorize any person, business entity or governmental agency who may have information relevant to the above to disclose the same to BALTIMORE COUNTY PUBLIC SCHOOLS, including, but not limited to, any courthouse, any public agency, and any and all law enforcement agencies, regardless of whether such person, business entity or governmental agency compiled the information itself or received it from other sources.

I hereby release **BALTIMORE COUNTY PUBLIC SCHOOLS**, as well as my current employer, (PRINT EMPLOYER NAME CLEARLY), and any and all persons, business entities and governmental agencies, whether public or private, from any and all liability, claims and/or demands, of whatever kind, to me, my heirs or others making such claims or demands on my behalf, for procuring, providing and/or assisting with the compilation or preparation of the investigative report hereby authorized.

*PLEASE NOTE THAT **BALTIMORE COUNTY PUBLIC SCHOOLS** MAY RECEIVE ALERT NOTICES WHEN FUTURE ARRESTS / COURT DATES / CRIMINAL INFORMATION IS POSTED TO THE FBI AND/OR THE STATE OF MARYLAND.

My initials below affirm that I have received copies of the following documents as required by the FBI: NONCRIMINAL JUSTICE APPLICANT'S PRIVACY RIGHTS: PRIVACY ACT STATEMENT: _____

Signature _____ Date of Birth _____

Date signed

Amended 02/12/2018

NONCRIMINAL JUSTICE APPLICANT'S PRIVACY RIGHTS

As an applicant who is the subject of a national fingerprint-based criminal history record check for a noncriminal justice purpose (such as an application for employment or a license, an immigration or naturalization matter, security clearance, or adoption), you have certain rights which are discussed below.

- You must be provided written notification¹ that your fingerprints will be used to check the criminal history records of the FBI.
- You must be provided, and acknowledge receipt of, an adequate Privacy Act Statement when you submit your fingerprints and associated personal information. This Privacy Act Statement should explain the authority for collecting your information and how your information will be used, retained, and shared.²
- If you have a criminal history record, the officials making a determination of your suitability for the employment, license, or other benefit must provide you the opportunity to complete or challenge the accuracy of the information in the record.
- The officials must advise you that the procedures for obtaining a change, correction, or update of your criminal history record are set forth at Title 28, Code of Federal Regulations (CFR), Section 16.34.
- If you have a criminal history record, you should be afforded a reasonable amount of time to correct or complete the record (or decline to do so) before the officials deny you the employment, license, or other benefit based on information in the criminal history record.³

You have the right to expect that officials receiving the results of the criminal history record check will use it only for authorized purposes and will not retain or disseminate it in violation of federal statute, regulation or executive order, or rule, procedure or standard established by the National Crime Prevention and Privacy Compact Council.⁴

If agency policy permits, the officials may provide you with a copy of your FBI criminal history record for review and possible challenge. If agency policy does not permit it to provide you a copy of the record, you may obtain a copy of the record by submitting fingerprints and a fee to the FBI. Information regarding this process may be obtained at https://www.fbi.gov/services/cjis/identity-history-summary-checks.

If you decide to challenge the accuracy or completeness of your FBI criminal history record, you should send your challenge to the agency that contributed the questioned information to the FBI. Alternatively, you may send your challenge directly to the FBI. The FBI will then forward your challenge to the agency that contributed the questioned information and request the agency to verify or correct the challenged entry. Upon receipt of an official communication from that agency, the FBI will make any necessary changes/corrections to your record in accordance with the information supplied by that agency. (See 28 CFR 16.30 through 16.34.)

¹ Written notification includes electronic notification, but excludes oral notification.

² https://www.fbi.gov/services/cjis/compact-council/privacy-act-statement

³ See 28 CFR 50.12(b).

⁴ See 5 U.S.C. 552a(b); 28 U.S.C. 534(b); 42 U.S.C. 14616, Article IV(c); 28 CFR 20.21(c), 20.33(d) and 906.2(d).

PRIVACY ACT STATEMENT

Authority: The FBI's acquisition, preservation, and exchange of fingerprints and associated information is generally authorized under 28 U.S.C. 534. Depending on the nature of your application, supplemental authorities include Federal statutes, State statutes pursuant to Pub. L. 92-544, Presidential Executive Orders, and federal. Providing your fingerprints and associated information is voluntary; however, failure to do so may affect completion or approval of your application.

Social Security Account Number (SSAN). Your SSAN is needed to keep records accurate because other people may have the same name and birth date. Pursuant to the Federal Privacy Act of 1974 (5 USC 552a), the requesting agency is responsible for informing you whether disclosure is mandatory or voluntary, by what statutory or other authority your SSAN is solicited, and what uses will be made of it. Executive Order 9397 also asks Federal agencies to use this number to help identify individuals in agency records.

Principal Purpose: Certain determinations, such as employment, licensing, and security clearances, may be predicated on fingerprint-based background checks. Your fingerprints and associated information/biometrics may be provided to the employing, investigating, or otherwise responsible agency, and/or the FBI for the purpose of comparing your fingerprints to other fingerprints in the FBI's Next Generation Identification (NGI) system or its successor systems (including civil, criminal, and latent fingerprint repositories) or other available records of the employing, investigating, or otherwise responsible agency. The FBI may retain your fingerprints and associated information/biometrics in NGI after the completion of this application and, while retained, your fingerprints may continue to be compared against other fingerprints submitted to or retained by NGI.

Routine Uses: During the processing of this application and for as long thereafter as your fingerprints and associated information/biometrics are retained in NGI, your information may be disclosed pursuant to your consent, and may be disclosed without your consent as permitted by the Privacy Act of 1974 and all applicable Routine Uses as may be published at any time in the Federal Register, including the Routine Uses for the NGI system and the FBI's Blanket Routine Uses. Routine uses include, but are not limited to, disclosures to: employing, governmental or authorized non-governmental agencies responsible for employment, contracting licensing, security clearances, and other suitability determinations; local, state, tribal, or federal law enforcement agencies; criminal justice agencies; and agencies responsible for national security or public safety.

Additional Information: The requesting agency and/or the agency conducting the applicationinvestigation will provide you additional information pertinent to the specific circumstances of this application, which may include identification of other authorities, purposes, uses, and consequences of not providing requested information. In addition, any such agency in the Federal Executive Branch has also published notice in the Federal Register describing any systems(s) of records in which that agency may also maintain your records, including the authorities, purposes, and routine uses for the system(s).

Method of Submitting Information (Applicable to Submittals for All Phases)

Initial submittals may be made electronically or as hard copies; the Contractor shall coordinate with the County's Project Engineer and Construction Inspection to determine the appropriate method of submittal. The Contractor is responsible for providing three hard copies of **all** final approved submittals **EXCEPT** for CCTV inspections and site videos; all videos shall be submitted electronically only.

Electronic copies of small files (less than 10 MB) may be sent by email to addresses provided by the County's Project Engineer; larger electronic files shall be uploaded to the County's FTP site (<u>https://ftp</u>.baltimorecountymd.gov). Credentials for using the FTP site shall be provided by the County to the Contractor upon request.

Standard Contractor Submittals Required Within 10 Days After Award of Contract

The following submittals, applicable to all sewer rehabilitation projects, are the minimum a contractor must submit within 10 contract days after award of contract. Failure to comply with these requirements could result in the Director of Public Works and Transportation proceeding with the annulment of the award and forfeiture of the Proposal Guarantee. There could be additional submittals required, depending on each individual job.

- Baseline Schedule, Monthly Progress Schedules, and any required Recovery Schedules as outlined in Section GP-8.04, paragraph (2) through (6)
- Submit subcontractor(s) information, see Section 2731.01.13
 - Submit Safety Plan, see Section 2731.01.14(i)(1)

Refer to Section 2731.01.16 for submittal requirements regarding the following:

- Pipe liner literature and data, see Section 2731.01.16(a)
- Supplier's letter of certification, see Section 2731.01.16(b)
- Independent test report, see Section 2731.01.16(c)
- Verification of Contractor liner license, see Section 2731.01.16(d)
- The manufacturer's certification, see Section 2731.01.16(e)
- Documentation of Contractor's experience, see Section 2731.01.16(f)
- Documentation of Product experience, see Section 2731.01.16(g)
- References for the project superintendent, see Section 2731.01.16(h)
- Report outlining the rehabilitation/replacement process, see Section 2731.01.16(i)
- Manufacturer's recommended cure method, see Section 2731.01.16(j)
- Crewmembers performing the lining, see Section 2731.01.16(k)
- Calculations for liner thicknesses, see Section 2731.01.16(l)
- Product Warranty and Certification Form, see Section 2731.01.16(m)
- Sample Written Notification for Residents, see Section 2731.01.16(n) and 2731.03.02 (b)

Refer to Section 2732.01.03 for submittal requirements regarding the following:

- Description of inversion process lubricant, see Section 2732.01.03(a)
- Certification of resin volume, see Section 2732.01.03(b)

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- Certification regarding approval of resin dye, see Section 2732.01.03(c)
- Tensile Stress information, see Section 2732.01.03(d)
- Shop drawings and product data, see Section 2732.01.03(e)
- Description of proposed wet-out procedure, see Section 2732.01.03(f)
- Tube stresses & elongation information, see Section 2732.01.03(g)
- Temperature monitoring system, see Section 2732.01.03(h)

Refer to Section 2733.01.03 for submittal requirements regarding the following:

- Certification documentation, see Section 2733.01.03(a)
 - Certification regarding approval of resin dye, see Section 2733.01.03(b)
 - Tensile Stress information, see Section 2733.01.03(c)
- Shop drawings and product data, see Section 2733.01.03(d)
- Description of the proposed wet-out procedure, see Section 2733.01.03(e)
- Tube stresses & elongation information, see Section 2733.01.03(f)
 - Description of monitoring system, see Section 2733.01.03(g)

Refer to Section 2734.01.06 for submittal requirements regarding the following:

- Pipe bursting plan, see Section 2734.01.06(a)
- Bursting head vibrations measurements, see Section 2734.01.06(b)
- Approval(s) from private utility companies, see Section 2734.01.06(c)
- Verification of licensed installer, see Section 2734.01.06(e)
- Documentation of Contractor's experience, see Section 2734.01.06(f)
- Documentation of Product experience, see Section 2734.01.06(g)
- Logs verifying insertion rates and forces, see Section 2734.01.06(h)
- Product Warranty and Certification Form, see Section 2734.01.06(i)

Refer to Section 2737.01.10 for submittal requirements regarding the following:

Shop drawings and product data, see Section 2737.01.10(a)
Samples of all proposed materials, see Section 2737.01.10(b)
Measurements verifying manhole information, see Section 2737.01.10(c)
Manhole rehabilitation literature and data, see Section 2737.01.10(d)
Supplier's letter of certification for installers, see Section 2737.01.10(e)
Independent test report, see Section 2737.01.10(f)
The manufacturer's certification, see Section 2737.01.10(g)
Documentation of Contractor's experience, see Section 2737.01.10(h)
Documentation of Product experience, see Section 2737.01.10(i)
Proof of federal, state, or local permits or licenses, see Section 2737.01.10(j)
Calculations for liner/wall coverage thicknesses, see Section 2737.01.10(k)

- Manhole Patching Mix, see Section 2737.01.10(1)
- Manhole Infiltration Control Mix, see Section 2737.01.10(m)
- Manhole Sealer, see Section 2737.01.10(n)
- Manhole Cementitious or Epoxy Liner, see Section 2737.01.10(o)
- Internal and External Manhole Frame Seals, see Section 2737.01.10(p)
- Manhole Frame and Cover, see Section 2737.01.10(q)
- Manhole Inserts, see Section 2737.01.10(r)
 - Product Warranty and Certification Form, see Section 2737.01.10(s)

Refer to Section 2738.01.03 for submittal requirements regarding the following:

- Chemical Grouting Materials, see Section 2738.01.03(a)

- Chemical Root Inhibitor, see Section 2738.01.03(b) Proof of experience conducting method to be used, see Section 2738.01.03(c)
- Notice of proposed testing schedules/procedures, see Section 2738.01.03(d)
- Verification of approved installer, see Section 2738.01.03(e)
- Certificates of training, see Section 2738.01.03(f)
- Manufacturer's Safety Data Sheets, see Section 2738.01.03(g)
- Manufacturer's certification & material information, see Section 2738.01.03(h)
- Manufacturer's recommended procedures, see Section 2738.01.03(i)
- Product Warranty and Certification Form, see Section 2738.01.03(j)

Refer to Section 2740.01.04 for submittal requirements regarding the following:

- Bypass pumping schedule, see Section 2740.01.04(a)
- Drawings showing staging and access locations, see Section 2740.01.04(b)
- Bypass pump information, see Section 2740.01.04(c)
- Calculations – static lift/friction losses/flow velocity, see Section 2740.01.04(e)
- Road crossing details, see Section 2740.01.04(f)
- Sewer plugging methods, see Section 2740.01.04(g)
- Suction and discharge piping information, see Section 2740.01.04(h)
- Sections – suction and discharge pipe depth, see Section 2740.01.04(i)
- Method of noise control, see Section 2740.01.04(j)
- Standby power generator size and location, see Section 2740.01.04(k)
- Downstream discharging plan, see Section 2740.01.04(1)
- Methods of protecting manholes/structures, see Section 2740.01.04(m)
- Restraining lengths for piping, see Section 2740.01.04(n)
- Temporary pipe supports and anchoring, see Section 2740.01.04(o)
- Location of fuel tank(s), see Section 2740.01.04(p)
- Reliability methods, see Section 2740.01.04(q)

Overflow Prevention, Contaminant & Cleanup Plan, see Section 2740.01.04(r)

Procedures to monitor upstream mains, see Section 2740.01.04(s)

Pumping setup & breakdown operations procedures, see Section 2740.01.04(t)

Emergency plan, see Section 2740.01.04(u)



Refer to Section 2741.01.06 for submittal requirements regarding the following: Submit disposal plan, see Section 2741.01.06

Refer to Section 2742.01.03 for submittal requirements regarding the following:

Submit sample of previous TV work, see Section 2742.01.03(b)

Submit PACP Operator Certification, see Section 2742.01.03(d)

Refer to Section 2743.01 for submittal requirements regarding the following:

- Product Experience documentation, see Section 2743.01.05
- Contractor Experience documentation, see Section 2743.01.06
- Description of lubricant, see Section 2743.01.07(a)
- Certification of resin volume, see Section 2743.01.07(b)
- Certification regarding approval of resin dye, see Section 2743.01.07(c)
- Tensile Stress information, see Section 2743.01.07(d)
- Product Warranty and Certification Form, see Section 2743.01.07(e)

Refer to Section 2751.01.04 for submittal requirements regarding the following:

- Shop drawings & product data, see Section 2751.01.04(a)
- Schedule of anticipated duration of service interruptions, see Section 2751.01.04(b)
- Product Warranty and Certification Form, see Section 2751.01.04(c)

Refer to Section 2752 for submittal requirements regarding the following:

- Infrared spectrum for proposed resin, see Section 2752.01.03(a)
- Confirmation of the resins meeting ASTM D5813, see Section 2752.01.03(a)

Certification of resin volume, see Section 2752.01.03(b) Certification regarding approval of resin dye, see Section 2752.01.03(c)

- - Tensile Stress information, see Section 2752.01.03(d)
- Documentation of Installer's Experience, see Section 2752.01.03(e)
- Documentation of Manufacturer's Experience, see Section 2752.01.03(f)
- Product Warranty and Certification Form, see Section 2752.01.03(h)
- Submit design method, see Section 2752.02.03(b).

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Contractor Submittals Required Following Notice to Proceed

The following submittals, applicable to all sewer rehabilitation projects, are the minimum a contractor must submit *following* notice to proceed. There could be additional submittals required, depending on each individual job.

Refer to Section 1380 for submittal requirements regarding the following:

Pre-construction video

Refer to Section 2731.01.17 for submittal requirements regarding the following:

- Verified pipe length and diameter measurements, see Section 2731.01.17(a)
- Infrared spectrograph chemical fingerprint, see Section 2731.01.17(b)(1)
- Shipping Manifest, see Section 2731.01.17(b)(2)
- Product manufacturer's QA/QC information, see Section 2731.01.17(c)
- Procedure for disposal of any superheated water, see Section 2731.01.17(d)
- Hydrophilic waterstop, see Section 2731.01.17(e)
 - Samples of the liner material, see Section 2731.01.17(f)

Refer to Section 2732.01.04 for submittal requirements regarding the following:

- Liner documentation, see Section 2732.01.04(a)
- CIPP liner curing sample report, see Section 2732.01.04(b)
 - Product Warranty and Certification Form, see Section 2732.01.04(c)

Refer to Section 2733.01.04 for submittal requirements regarding the following:

- Operations protocol, see Section 2733.01.04(c)
- Product Warranty and Certification Form, see Section 2733.01.04(d)

Refer to Section 2734.03.01 for submittal requirements regarding the following:

Submit the list of structures/residences to be inspected, see Section 2734.03.01(h)(2)

Submit report for each surveyed structure, see Section 2734.03.01(h)(2)iii

Refer to Section 2737.03.10 for submittal requirements regarding the following:

Submit repair method for damaged manhole, see Section 2737.03.10(1)

Refer to Section 2738 for submittal requirements regarding the following:

- Submit equipment list, see Section 2738.02.01(a)
- Submit mixtures (and quantities) for gel/foam, see Section 2738.02.06(f)
- Submit Incident Report as needed, see Section 2738.03.01(a)
- Submit video of line cleaning operations, see Section 2738.03.02(c)
- Submit video of sealing operation, see Section 2738.03.04(g)(9)
 - Submit records for completed sewer sections/service connects, see Section 2738.03.10(a)

Refer to Section 2740 for submittal requirements regarding the following:

Submit Incident Report as needed, see Section 2740.01.03(c)

Refer to Section 2741 for submittal requirements regarding the following:

Submit Incident Report as needed, see Section 2741.03.02(c)

Refer to Section 2742 for submittal requirements regarding the following:

Submit two copies of the DVDs, database, and inspection logs, see Section 2742.02.03(a) Resubmit previous poor quality video, see Section 2742.03.02(a)(14)

Refer to Section 2744.01.11 for submittal requirements regarding the following:

Detailed plan for point repairs, see Section 2744.01.11(a)

- Pipe material and fittings, see Section 2744.01.11(b)
- Bedding and backfill material, see Section 2744.01.11(c)
- Sewage flow bypass plan, see Section 2744.01.11(d)

Contractor Submittals Required Prior to Final Payment

The following submittals applicable to all sewer rehabilitation projects are the minimum a contractor must submit *prior* to final payment. Final payment will not be issued until all of the listed information has been reviewed and approved by the County.

Refer to Section 2731.01.18 for submittal requirements regarding the following:



The curing log of temperatures, see Section 2731.01.18(a)

Testing results for materials, see Section 2731.01.18(b)

- Two complete sets of DVDs, see Section 2731.01.18(c)
- Post Installation, see Section 2731.01.18(d)

Refer to Section 2732 for submittal requirements regarding the following:



CIPP liner curing reports, see Section 2732.01.04(b)

- Submit curing log of CIPP temperatures, see Section 2732.03.01(o)

Submit laboratory information, see Section 2732.03.02(d)

Submit laboratory results, see Section 2732.03.02(j)

Refer to Section 2733.03.04 for submittal requirements regarding the following:

Wet-out forms, see Section 2733.01.04(a)

Curing reports, see Section 2733.01.04(b)

- Submit laboratory information, see Section 2733.03.04(c)
- Submit laboratory results, see Section 2733.03.04(i)

Refer to Section 2734 for submittal requirements regarding the following:

Submit post televising of completed sections, see Section 2734.03.04(b)

Refer to Section 2737 for submittal requirements regarding the following:

- Submit negative air pressure, exfiltration, and/or discontinuity test results, see Section 2737.03.22(a)
- Submit alternate water tightness test method, see Section 2737.03.23

Refer to Section 2738.01.04 for submittal requirements regarding the following:

- Records of all test results performed, see Section 2738.01.04(a)
- DVDs for joint and/or service connection, see Section 2738.01.04(b)

Refer to Section 2742.03.03 for submittal requirements regarding the following:

- Submit post-installation TV inspection DVDs, see Section 2742.03.03(a)(1)
- Submit Television Inspection Logs, see Section 2742.03.03(a)(3) and 2742.03.04(a)(3)
- Submit Digital Photographs, see Section 2742.03.03(a)(5) and 2742.03.04(a)(5)
- Submit Final Acceptance TV inspection DVDs, see Section 2742.03.04(a)(1)

<u>Warranty</u>

Submit shop drawing for method of repair, see Section 2743.03.06

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SECTION 1380

PRECONSTRUCTION VIDEO

1380.01 DESCRIPTION

1380.01.01 Reference. All applicable requirements of other portions of the Contract Documents apply to the Work of this Section.

1380.01.02 Description of Work.

- (a) The Work of this Section includes, but is not limited to, Preconstruction Video consisting of color recording, with audio description, of surface features along the entire length of the project. Recording includes all work areas, easements, and storage areas and all access roadways, and, prior to audio-video-recording, visual investigation of all areas to be inventoried with notations made to items not readily visible by recording methods including, but not limited to, size, type and condition of roadway, driveway, culverts, headwalls, etc. Audio-video-recording shall be done prior to commencement of the construction or delivery of any equipment, material, or supplies to the site of Work.
- (b) The purpose of the color audio-video-recording of the project is to provide the necessary information for restoration of surface features after completion of the project. This recording must, therefore, cover the project area in its entirety to assist in replacing those areas affected by construction to their original condition with as little controversy as possible. Video-recording shall be performed no more than two (2) weeks prior to construction in the area, and any areas taped more than two (2) weeks prior to the construction shall be redone at no additional cost to the County.
- (c) Special attention must be given to recording existing home/residential areas to ensure adequate recording of pre-existing conditions. Digital Video Disc(s) (DVDs) must be approved by the Baltimore County Department of Public Works and Transportation prior to the beginning of any cleaning, inspection, and/or construction work.
- **1380.01.03 Qualifications.** Color audio-video-recording must be compiled by a competent videographer actively engaged in color-video recordings of similar type projects for municipal agencies.

1380.01.04 Ownership of DVDs.

(a) All DVDs produced will become the permanent property of the County. The Contractor shall deliver all DVDs to the County prior to the beginning of any construction Work. (b) Any portion of the video coverage deemed unacceptable by the County must be re-televised by the Contractor at no additional cost to the County, prior to the beginning of any construction Work.

1380.02 MATERIALS

1380.02.01 Electronic Requirements. All video-recording shall be provided on DVD. DVDs shall be equipped with an appropriate viewer, to be supplied by the Contractor, at no additional cost to the County.

1380.03 CONSTRUCTION REQUIREMENTS

1380.03.01 Coverage of Recording.

- (a) The area to be taped shall include, but not be limited to, all existing driveways, sidewalks, curbs, ditches, streets, landscaping, trees, culverts, catch basins, headwalls, retaining walls, fences, visible utilities including telephone and electrical poles with any overhead lines crossing the site, and all buildings located within the zone of influence of construction. Of particular concern are any existing faults, fractures, defects, or other imperfections exhibited by the above-mentioned surface features. Audio description shall be made simultaneously with and support the video coverage.
 - (1) **Streets.** Streets shall be recorded from the travel lane adjacent to the work areas where the sewer is located and runs along one side of the street except where specifically noted otherwise by the County.
 - (2) **Easement Areas.** Easement areas shall be recorded for the full width of the permanent and temporary easements and all other adjacent areas lying within the zone of influence of "SURFACE" construction as directed by County. The size and locations of all easements to be taped shall be shown on the plans or otherwise supplied by the County.
 - (3) Access Ways and/or Routes. Any access ways and/or routes, regardless of whether they are located within a right-of-way or not, shall be recorded for the full width of the access way and/or route and all other adjacent areas lying within the zone of influence of "SURFACE" construction as directed by County. The size and locations of all ways and routes to be taped shall be shown on the plans or otherwise supplied by the County.
 - (4) **Building Exteriors.** The Contractor shall record all exterior surfaces of buildings specifically identified by the County to receive such coverage. At a minimum, any structure or building shall be videotaped if located above the sewer and within any permanent easement. Buildings so identified may include houses, apartments, factories, warehouses, retail stores and other structures. Exterior building coverage shall include, but not be

limited to, walls, visible foundations, chimney, porches, carports, and trim.

1380.03.02 Location Information.

- (a) All DVDs (DVDs and cases) shall be properly identified by DVD number, location and project name in a manner acceptable to the County.
- (b) A record of the contents of each DVD shall be supplied on a run sheet identifying each segment in the DVD by location, i.e., street or easement number and viewing direction, traveling direction, sewer stationing, and all referenced by DVD counter numbers and date.
- (c) A brief report and inventory of all DVDs completed, referenced by location and DVD number, shall be furnished to the County upon completion of the Work and delivery of the DVDs.
- (d) All video recordings shall begin with the date and time of recording, the project name, the sheet numbers or engineering stationing as shown on the Plans, the name of the street, easement number or building address being taped, the direction of travel, and the viewing side.
- (e) Houses and buildings shall be identified visually by house or building number, when possible, in such a manner that the progress of the recording and the proposed system may be located by reference to the houses and buildings.
- (f) Unless an alternate format is proposed by the Contractor and approved by the County, the Contractor shall provide the following information, in the format specified. The engineering stationing numbers must be continuous and correspond to the project sewer stationing and include the standard engineering symbols. This information must appear in the lower half of the viewing screen. Below the engineering stationing shall appear the name of the project, name of the area covered, direction of travel, viewing side, date, time, etc.
- (g) In easements, local landmarks on the route or other recognizable features off to the side of the sewer routes shall be visually and audibly noted at frequent intervals to identify the camera location.
- **1380.03.03** Entering Property. If it becomes necessary to enter onto private property, the Contractor shall notify the owner of such property at least 24 hours in advance of the planned entry to obtain his permission to do so. Should the owner of the property refuse to give permission for said entry, the Contractor shall notify the County. The Contractor is advised that they shall not enter any private property before permission is granted to do so or the County notifies the Contractor that they have gained the legal right to do so. The Contractor shall be held liable for entry made other than stated above. The Contractor shall, at their own expense, repair or restore any areas damaged during the Work of this Item.

1380.03.04 Site Recording Conditions.

- (a) All recording shall be done during times of good visibility. No outside recording shall be done during periods of visible precipitation or when the ground area is covered with snow, leaves, or debris unless otherwise authorized by the County.
- (b) In order to produce the proper detail and perspective, adequate auxiliary lighting will be required to fill in shadow areas caused by trees, utility poles, road signs, and other such objects, as well as other conditions requiring artificial illumination.
- (c) The average rate of speed in the general direction of travel of the conveyance used during recording shall not exceed 48 feet per minute. Panning rates and zoom-in/zoom-out rates shall be controlled sufficiently such that playback will produce adequate clarity of the objects being viewed.
- (d) When conventional wheeled vehicles are used as conveyance for recording, the distance from the camera lens to the ground shall not be less than 8 feet to insure proper perspective. In instances where coverage will be required in areas not accessible to conventional wheeled vehicles, such coverage shall be obtained by walking or by special conveyance approved by the County, but with the same requirements for DVD quality and content as specified herein except as may be specifically exempted by the County.
- **MEASUREMENT AND PAYMENT.** This item will not be measured.
 - (a) **Basis of Payment.** Payment for the preconstruction video, on DVD, will be included in the prices bid for items in the proposal and as defined in these Specifications.

END OF SECTION

SECTION 1700

COMPLETION, CLEANUP AND GUARANTEE

1700.01 DESCRIPTION.

- **1700.01.01 Reference.** All applicable requirements of other portions of the Contract Documents apply to the Work of this Section.
- **1700.01.02 Description.** The work will include the cleanup, stabilization, restoration, and disposal to maintain a safe and well-kept job site and properly repair disturbed areas of the site to a condition acceptable to the County during and upon completion of the project. The Contractor shall furnish all labor, materials, equipment and supplies to perform all work herein described.

1700.02MATERIALS. Not Used

1700.03 CONSTRUCTION REQUIREMENTS.

1700.03.01 Site Restoration.

- (a) The Contractor shall restore all surfaces removed, damaged, or disturbed by his operations to the condition in which they existed prior to the commencement of the work, except as otherwise noted.
- (b) Pipe drains, headwalls, catch basins, and all incidental drainage structures shall be restored using like materials and details.
- (c) Grassed surfaces shall be restored to pre-construction conditions by sodding or seeding.
- (d) All drainage ditches shall be restored to their existing grade line and cross section. When grading operations begin, remove conflicting facilities and store in manner to keep them clean and in existing condition.
- (e) All pavement, walks, curb and gutter, and entrances removed or damaged by the Contractor shall be replaced to equal or better conditions.
- (f) Gravel surfaces and roadway shoulders shall be restored to their pre-construction (or better) condition. Do not reuse shoulder material if contaminated by foreign material. Replace with new material of same quality and gradation. Follow jurisdictional requirements and applicable permits secured for this Contract. The Contractor shall also restore surface areas adjacent to shoulders, if left unstable by construction, with stabilized gravel or other acceptable stabilizing material.

- (g) The Contractor shall disassemble and remove all temporary construction facilities.
- (h) All public and private signs, markers, guardrails, and fences shall be preserved and maintained in existing locations and condition unless written permission is obtained for removal and restoration or replacement.
- (i) The contractor shall repair or replace damaged items when directed, at no cost to the County.

1700.03.03 Cleanup During and on Completion of Project.

- (a) The Contractor shall, on a continuous basis throughout the course of the project, provide cleanup and restoration of lawns, streets, drainage facilities, and adjacent properties within the project limits. All trash, debris, and other foreign matter shall be disposed of in accordance with the specifications herein.
- (b) On completion of the work covered by any of the sections of this project, the Contractor for said section shall cleanup the entire premises occupied by his operations. This area shall be left neat and clean of trash, debris, piles of earth, waste materials or equipment. All surplus materials and equipment, trash, debris, and other foreign matter shall be properly disposed of. The entire project or sections thereof shall be made ready for the County's use, and the Contractor shall assist as may be necessary in placing any equipment furnished under the Contractor's Contract in proper operating condition.

1700.03.03 Guarantee.

- (a) The Contractor shall deliver the work to the County complete and in first class condition in every respect, and shall guarantee the material and workmanship for a period of 12 months from the time the construction is completed, unless a longer period is specified in another section of these specifications.
- (b) If, during the specified time, any defects show up due to defective material and/or equipment negligence, or want of proper care on the part of the Contractor, the Contractor shall furnish such new materials as are necessary, and repair said defects and put the work in proper order at his own expense on receipt of notice from the County. The contractor warrants and guarantees that the completed work is free from defects that shall include, but not necessarily be limited to the following:
 - (1) Against all faulty or imperfect materials and equipment, subsidence of backfills, fills and embankments, vegetation stabilization, and against all imperfect, careless and/or unskilled workmanship.
 - (2) That the structures shall be watertight and leak proof at every point and in every joint.
 - (3) No use or acceptance by the County of the work or any part thereof, nor any

failure to use same, nor any repairs, adjustments, replacements, or corrections made by the County due to the Contractor's failure to comply with any of his obligations under the Contract Documents, or other corrections made by the County shall impair in any way the guarantee obligations assumed by the Contractor under these Contract Documents.

- (c) The Contractor shall promptly make such corrections as may be necessary by reason of such defects in 1700.03.03(b) including the repairs of any damage to other parts of the work resulting from such defects and agrees to replace with proper workmanship, materials, equipment, and re-execute, correct, or repair without cost to the County, any work which may be found to be improper or imperfect and/or which does not operate in a satisfactory manner and fails to perform as specified, or in any other way does not conform to the Contract Documents, unless such damage is the direct result of negligence on the part of County personnel, or fair wear and tear. The County will give notice of observed defects with reasonable promptness. In the event that the Contractor fails to make such repairs, adjustments, or other work that may be made necessary by such defects, the County may do so and charge the Contractor the cost thereby incurred.
- (d) The guarantee provisions specified herein shall not limit the County's right to recover damages for the Contractor's refusal to repair defective work after the expiration of the guarantee provisions specified herein.
- (e) Included in this Contract is an express duty for the Contractor to complete a reinspection of all line sections which have undergone rehabilitation or replacement. This work item will be initiated by the County at their discretion, within the two (2) year time period, after the completion of the work. THIS INFORMATION WILL BE USED TO DETERMINE GUARANTEE COMPLIANCE. Internal inspection will be completed as described in Section 2742, Television Inspection. This reinspection is in addition to the Post-Installation and Final Acceptance TV inspections completed for the project.

1700.04MEASUREMENT AND PAYMENT. This item will not be measured.

(a) **Basis of Payment.** Payment for completion, cleanup and guarantee will be included in the prices bid for items in the proposal and as defined in these Specifications.

END OF SECTION

SECTION 2731

PIPE REHABILITATION - GENERAL REQUIREMENTS

2731.01 DESCRIPTION

- **2731.01.01 Reference.** All applicable requirements of other portions of the Contract Documents apply to the Work of this Section.
- **2731.01.02 Description of Work.** These specifications include requirements for all design, materials, transportation, equipment and labor necessary to rehabilitate deteriorated sections of sewer listed in the Contract Documents. This specification is intended to identify the minimum requirements of the County.
- **2731.01.03** This Section shall supplement and amend the Baltimore County Department of Public Works and Transportation Standard Specifications, and Maryland State Highway Administration Standards and cover the materials and methods of application for the rehabilitation of existing pipelines through the use of the Cured-in-Place and/or Pulled-in-Place technologies.
- **2731.01.04** The Contractor shall furnish all material, labor and special equipment required to accomplish the work in accordance with these specifications. The installation shall affect the complete interior relining of the existing sanitary sewer piping and shall result in a smooth, hard, strong and chemically inert interior finish, and closely following the contours of the existing piping. The Contractor shall provide a completed watertight system with mainline sewer and all active lateral connections in operational condition.
- **2731.01.05** Sequencing: Lateral repairs, including reconnection/replacement, identified in the contract documents shall be completed prior to rehabilitation of the main sewer line.
- **2731.01.06** The Contractor shall perform all required permanent landscape restoration and site restoration of disturbed areas on private property and within County rights-of-way upon completion of pipe rehabilitation, to the satisfaction of the County.
- **2731.01.07** The Contractor shall be responsible for all work pertaining to the abandonment and/or removal of existing manholes and sewer lines, as shown or specified by the County.
- **2731.01.08** The Contractor shall obey applicable environmental regulatory requirements.
- **2731.01.09** For any ASTM standard referenced, the Contractor shall use the most current active version. If requested by the County, the Contractor shall provide a copy of the current ASTM standard.

2731.01.10 Contractor Experience.

(a) The prospective Contractor must be approved, in writing, by the County prior to the award of contract. The Contractor shall provide any information or documentation, which the County may require as proof of the Contractor's competency to perform work of the type herein specified.

- (b) The Contractor for the pipe rehabilitation of sewers must have a minimum of three years experience using the proposed product and have installed at least 50,000 linear feet of the proposed product. All workers performing work on the pipe rehabilitation of sewer must be certified by the pipe rehabilitation system supplier as qualified to perform work with the proposed product and method.
- (c) The superintendent for the job must have supervised jobs in which at least 50,000 feet of pipe has been rehabilitated using the product and method proposed in the bid. The superintendent for the job shall be on-site during all phases of the work involving the insertion and processing of the liner pipe. The superintendent must be an employee of the lining contractor.
- (d) The Contractor shall be licensed by the liner process manufacturer.
- **2731.01.11** Product Experience. The product proposed for the pipe rehabilitation of sewers must have been in use for at least three years in this country, and a minimum of 60,000 linear feet of the product must have been installed to date in this country.
- 2731.01.12 Water Use. Potable water to be used for pipe lining and cleaning processes may be obtained from the County fire hydrants. The Contractor shall be responsible for obtaining all necessary fire hydrant permits. No water shall be drawn from a public fire hydrant except through a Baltimore County issued water meter. *Applications are made through the Bureau of Utilities Fullerton Complex 4421 Bucks Schoolhouse Road, Suite 100, Baltimore, Maryland 21237 email: utilities@baltimorecountymd.gov Phone: 410-887-1885 Fax: 410-887-1886.* A deposit is required for the meter. The Contractor shall provide all piping, hoses, valves, or connections necessary to complete the work. All vehicles involved with water use operations shall be inspected by the Bureau of Utilities. The Contractor shall install a backflow device either on the hydrant or downstream of the meter. Access to fire hydrants for the purpose of fire protection shall be maintained at all times.
- **2731.01.13** Access. The Contractor is not permitted to cross private property without authorization from both the affected property owner and the County. The rehabilitation system used must be capable of being installed through existing manholes. Excavation will be allowed for the replacement of individual services and if the County directs that point repairs be made to the main line. All work for this project shall be confined to the public right-of-way areas and easements as shown on the plans. The Contractor shall obtain written permission from individual homeowners prior to accessing the sewer system across private property. Proof of written permission shall be supplied to the County upon request.
- **2731.01.14 Subcontractors.** Not more than fifty (50) percent of the work (total bid amount) shall be subcontracted. The Contractor shall submit the subcontractor(s) name(s), contact information, and proposed percentage of work (as a percentage of the total bid amount) to the County prior to the notice to proceed.

2731.01.15 Safety.

(a) Contractor shall ensure public safety and worker safety during progress of the rehabilitation work.

- (b) Contractor shall use employees who are properly trained and who are aware of possible work, materials, and job site related hazards.
- (c) It shall be the responsibility of the Contractor to provide adequate measures to protect pedestrian and vehicular traffic on streets. Signals and barricades shall conform to requirements of federal, state and local laws, rules, regulations, precautions, orders and decrees.
- (d) Contractor shall report to the County any condition that may pose a threat to the health and welfare of the project inspectors, contractor's employees, or the general public.
- (e) Provide proper ventilation and personal protective equipment as required to ensure worker safety. Perform work in adherence to statutes of appropriate local, state, and federal health and labor laws, including OSHA confined space entry requirements.
- (f) Contractor shall have available on the job-site current manufacturer's Material Safety Data Sheets.
- (g) Contractor shall keep the working area clean, safe, appropriately barricaded, and properly lighted.
- (h) The Contractor shall conduct operations in accordance with applicable OSHA standards, including those safety requirements involving entry into a confined space. Make suitable precautions to eliminate hazards to personnel near construction activities.
- (i) The following plans shall be on-site for the duration of the project and be made available to County personnel as requested:
 - (1) Safety Plan: The Safety Plan shall identify all competent persons, a description of the daily safety program for the job site, and all emergency procedures to be implemented in the event of a safety incident. All work shall be conducted in accordance with the Contractor's submitted Safety Plan.
 - (2) Emergency Plan: The Emergency Plan shall detail procedures to be followed in event of health and safety emergencies, pump failures, overspray, chemical spills, sewer overflows, service backups, and sewage spillage. Address dangers associated with sewer rehabilitation work (i.e. working with large boiler trucks).
 - (3) Health and Safety Plan: The Health and Safety Plan shall identify a health and safety officer (i.e. crew chief) responsible for providing health and safety oversight of personnel participating on the project team, performing and documenting routine work area inspections, conducting safety meetings, and providing safety orientations for team members.

- (4) Equipment: The Contractor shall maintain a list of critical rehabilitation equipment to be inspected on a daily basis. Monthly maintenance logs and noise attenuation logs shall also be maintained.
- (5) Odor Control Plan: The Contractor shall develop an odor control plan that will ensure that project specific odors will be minimized at the project site and surrounding area.

2731.01.16 Submittals.

The Contractor shall have ten (10) contract days after the date of award to submit the following information to the County for review and approval. Failure to do so may be grounds for termination of contract.

- (a) Manufacturer's published literature and published data for the proposed pipe liner systems, including MSDS sheets for all materials.
- (b) The pipe rehabilitation system supplier's letter of certification for the workers who will perform pipe rehabilitation work. The workers must have completed training in handling, insertion, trimming, reinstatement of laterals, and finishing pipe liner.
- (c) Independent test report showing that the physical properties and chemical resistance of the proposed pipe system meet the respective ASTM requirements, requirements of these specifications, and the requirements published in the manufacturer's literature.
- (d) Written verification confirming that the Contractor is licensed by the liner process manufacturer.
- (e) The manufacturer's certification that the proposed pipe system for the project meets the respective ASTM requirements, requirements of these specifications, and will meet or exceed the physical properties given in the manufacturer's published literature submitted as required by Part (a) of this subsection.
- (f) Documentation of Contractor's experience. This shall include references for all jobs within the last three years that were either completed or under construction using the proposed rehabilitation product and method. References for a minimum of ten jobs shall be provided. The jobs submitted shall show that the contractor has installed at least 50,000 linear feet of the proposed product. Information provided shall include a description of the job (including rehabilitation product and method used and related diameters and footages), the location of the job, the value of the job, and the Owner's contact for the job including name, title, address, and phone number.
- (g) Documentation of Product experience. This shall include references for jobs completed with the proposed pipe rehabilitation product and method. The jobs submitted shall show that at least 60,000 linear feet of the product, using the proposed method, has been installed by the Contractor or other Contractors. The documentation shall include at least ten jobs which have been completed, preferably within the last two years. Information provided for each job shall include a description of the job (including rehabilitation product and method used

and related diameters and footages), the location of the job, the value of the job, the Owner, and the contact for the job including name, title, address, and phone number.

- (h) References for the project superintendent documenting experience as required by these specifications. If a change in superintendent is made prior to or during construction, the Contractor shall provide references documenting experience as required by these specifications, for the County's review and approval.
- (i) A report outlining the process and product to be used in the rehabilitation and/or replacement of the sewer line. The report shall also include information specific to the job, such as a project schedule, coordination issues, access, set-up locations, timing, manufacturer's installation instructions (including recommended procedures for curing, handling, and storing), traffic control, maintaining service to customers, and flow control. This report shall describe the methods that will be taken to avoid liner stoppage due to conflict and friction with manhole entrances and bends into pipe entrances. The Contractor shall document plans for dealing with liner that is stopped by snagging within pipe. The Contractor shall submit two copies of this report: one for the County Engineering Department and one for the County Inspector.
- (j) Manufacturer's recommended cure method for each diameter and thickness of liner to be installed. Include curing procedures detailing the curing medium and the method of application.
- (k) Letter identifying the crew members performing the lining. If any of the crew members are not identified on the original certification letter received during the pre-qualification process, then a new certification letter listing the crew member(s) must be received from the rehabilitation system supplier prior to initiation of the work.
- (I) Calculations supporting recommended liner thicknesses, assuming a fully deteriorated host pipe condition, based on ASTM F1216. The data shall include both the sealed calculated thicknesses and the thicknesses proposed to be installed. Upon review and approval by the County, the proposed installed thicknesses will be considered the contracted design thicknesses. The thickness test results, addressed in this Specification, will be compared against these proposed installed thicknesses, not the minimum design thicknesses. The calculations shall be sealed by a registered Professional Engineer and an executed copy of the following form shall be provided:

Professional Eng	ineer Certification Form
	es that he/she is a Professional Engineer yland and that he/she is employed by:
he/she has performed the design of t and that the design is in conformanc codes, rules, and regulations. It Professional Engineer stamp will	(Name of Contractor) ents. The undersigned further certifies that the specified liner diameters and thicknesses e with all applicable local, state, and federal is further certified that the signature and be affixed to all calculations and drawings sulting from the design. ake all original design drawings and
	within seven (7) days following the Owner's
Professional Engineer Stamp	
	<i>By</i>

- (m) Product Warranty and Certification Form: To insure that all products and materials proposed for use on this project are of the highest quality and specifically designed and manufactured for the intended installation or use, a Product Warranty and Certification Form shall be completed by the rehabilitative product manufacturer(s), manufacturer's representative or vendor as well as the Cured-In-Place Pipe (CIPP) liner installer certifying that the product(s) they are proposing to use is specifically designed for the intended application, installation and/or function. Failure to complete this form may prevent the product(s) from being used on this project.
- (n) Sample of the written resident notification that is to be provided to affected homes and businesses in accordance with Section 2731.03.02 (b).

PRODUCT WARRANTY AND CERTIFICATION FORM

REFERENCE (PROJECT NAME AND CONTRACT NUMBER):_____

THE UNDERSIGNED HEREBY ATTESTS THAT HE HAS EXAMINED ALL THE REFERENCED PROJECT INFORMATION, PROJECT INSTALLATION REQUIREMENTS AND THE CONTRACT SPECIFICATIONS AND HEREBY WARRANTS AND CERTIFIES THAT THE REHABILITATION PRODUCTS THAT THEY PROPOSE TO FURNISH, DELIVER AND INSTALL FOR THIS PROJECT MEETS OR EXCEEDS THE REQUIREMENTS OF THESE CONTRACT SPECIFICATIONS, IS SUITABLE FOR THE INTENDED PURPOSE AND INSTALLATION, AND WILL SATISFACTORILY PERFORM TO THE CRITERIA SPECIFIED. THIS WARRANTY SHALL BE IN ADDITION TO, AND NOT IN LIEU OF, ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED.

PRODUCT:_____

MANUFACTURER:_____

Address:

By:_____

(Typed Name and Title)

(SEAL)

_____/s/ _____

The Product Warranty and Certification must be signed by a Principal Person (President, Vice-President, etc.) of the Product's Manufacturer. In the event the manufacturer is not the Supplier then a Principal Person of the Supplier must <u>also</u> sign this form.

MANUFACTURER'S REPRESENTATIVE/VENDOR:

Address:

By:

(Typed Name and Title)

(Signature)

_____/s/ _____(Date)

(Date)

The Product Warranty and Certification must be signed by a Principal Person (President, Vice-President, etc.) of the Installation Contractor. In the event the manufacturer is not the Installation Contractor then a Principal Person of the Installation Contractor must also sign this form.

INSTALLATION CONTRACTOR:_____

Address:

By:____

(Typed Name and Title)

(SEAL)

(SEAL)

(Signature)

(Date)

_____/s/ ____

- 2731.01.17 Submittals Following the Notice to Proceed the Contractor shall submit the information listed below for review and approval. These items may be submitted prior to the notice to proceed for review and approval. Once the notice to proceed is issued, contract days will start being counted, regardless of the submittal status. It is, therefore, in the Contractor's best interest to provide complete submittals in a timely and organized manner. The Contractor shall also make every effort to submit all submittals within each grouping (i.e. Pipeline Liner submittals, Manhole Lining submittals, Flow Control submittals, etc.). In addition, the County will review up to two submittals for each item. The Contractor shall not commence construction activities (i.e., point repairs, mainline lining, and manhole lining) until all of the listed information has been reviewed and approved by the County. Mark all submittals with mainline pipe identification number, work order number, Contractor's name, operator's name, and date of test readings, if applicable.
 - (a) All measurements made by the Contractor to verify length, ovality, and diameter of host pipe prior to ordering of material. These submitted measurements will be considered final. If measurements are revised just prior to or at the time of the liner installation, the Contractor is responsible for any related expenses to accommodate the measurements and ensure a liner and installation in accordance with these Specifications, at no additional expense to the County. Material includes all material used in the manufacture of the liner system, including at minimum, as applicable, the resin and fabric tube. The measurements shall be submitted a minimum of seven days prior to each liner installation.
 - (b) Documentation:
 - (1) Infrared spectrograph chemical fingerprint and Certificate of Analysis for each lot of material:

Lot number Product name Manufacturer Brookfield Viscosity Thix Index Gel time at cure temperature Peak temperature for failure Percent of non-volatile solids Specific Gravity Catalyzed Stability time at optimum temperature Catalyst to resin ratio Analysis signature Date tested Batch ticket for each resin-catalyst-colorant batch made up and impregnated into felt liner material.

(2) Shipping Manifest:

Date shipped Origination and delivery locations Shipping method and carrier Shipping order number Purchase order number

- Shipped item Stock number Lot number Manufacturer Any shipping, storage, or safety requirements Received by, and date Signature of Receiver
- (c) Quality assurance and quality control information from product manufacturer including recommended installation procedures (including any heating and cooling temperatures at specified time intervals, pulling speed, ultraviolet light intensity, rate of travel of the ultraviolet assembly, pressures, etc.) from the rehabilitation system supplier.
- (d) Procedure for disposal of any superheated water.
- (e) Hydrophilic waterstop, or equal, proposed for sealing the mainline connection at the manhole.
- (f) Samples of the liner material shall be provided for prior approval of the County.
- **2731.01.18 Submittals Prior to Payment.** The Contractor shall submit the information listed below for review and approval. Final payment will not be issued until all of the listed information has been reviewed and approved by the County.
 - (a) The curing log of temperatures at the upstream and downstream manholes during the curing process, rate of travel of the ultraviolet assembly (if used), pressures maintained, and any other documentation used to verify the completion/adequacy of the curing process (Sections 2732 and 2733).
 - (b) Results of testing for materials provided for this job, as specified in the respective rehabilitation Specification Sections (Sections 2732 and 2733).
 - (c) Two complete sets of DVDs from each of the television inspections performed (Pre-Installation, Post-Installation, and Final Acceptance TV Inspection), as specified in Section 2742, Television Inspection. All work, including manhole rehabilitation and connection grouting and/or lining shall be completed prior to Final Acceptance inspection. Main line rehabilitation line item will not be compensated until rehabilitation work is complete and Post-Installation CCTV inspections showing completion of work have been submitted to the County. Related rehabilitation tasks, including manhole rehabilitation and service connection grouting, lining, and/or replacement may be compensated upon completion and approval; however, final acceptance of all work and final payment under this contract will not be made until the Final Acceptance TV Inspection has been received, reviewed, and accepted by the County as described in Section 2742.
 - (d) Post Installation: If repairs need to be made to the liner, as a result of defects caused during manufacturing, transporting and/or installation, the Contractor shall prepare calculations supporting the recommended repair liner thickness(es), assuming a fully deteriorated host pipe condition. The calculations shall be sealed by a registered Professional Engineer. The data shall include both the sealed calculated

thicknesses and the thicknesses proposed to be installed. Upon review and approval by the County, the proposed installed thicknesses will be considered the contracted design thickness. The thickness test results will be compared against these proposed installed thicknesses, not the minimum design thicknesses.

2731.01.19 The on-site person-in-charge shall have good verbal communication skills, and shall be able to communicate clearly with the County's inspectors.

2731.02 MATERIALS

- 2731.02.01 Accuracy of the Plans. To the greatest practical extent, the plans accurately depict the details of the work, including the locations and numbers of all manholes, etc. However, the Contractor shall determine the locations of all structures and verify all dimensions, including lengths between manholes, by field measurement. The Contractor shall also be aware that minor variations in pipe diameter and circumference and joint offsets will occur, that it is not intended that such minor variations be indicated on the plans and that such variations will not be considered as grounds for additional claims for compensation. Prior to initiating the project, the Contractor shall thoroughly review pre-lining CCTV inspection logs and/or videos of all piping to be relined. Available DVDs/video tapes and/or inspection logs of piping to be lined will be made available to the Contractor for inspection prior to initiation of the project. The Contractor shall note the dates of the television inspections and make reasonable assumptions about deterioration and root growth/intrusion in the line since the inspections. The County will not accept responsibility, nor incur additional costs for unanticipated deterioration or root growth/intrusion in the line.
- **2731.02.02** All materials and equipment used in the lining and in the insertion process shall be of their best respective kinds, without multiple patches (vacuum, repair or other patches), and shall be as approved by the County. Any materials not approved by the County prior to insertion into the piping shall be rejected and shall be removed and replaced with approved materials at the Contractor's expense.
- **2731.02.03 Design Thicknesses.** The County reserves the right to change specified thicknesses based on new information.
- **2731.02.04** Flow Capacity. Maintenance of flow capacity of existing pipes is essential. Rehabilitated pipe shall have minimum of no change in capacity. An increase in flow capacity following rehabilitation is preferred, and in no case shall the flow capacity of rehabilitated pipes be reduced.
- **2731.02.05 Liner Sizing.** The liner shall be fabricated to a size that when installed will neatly fit the internal circumference of the pipe to be lined. The Contractor shall make allowance for longitudinal and circumferential stretching of the liner during installation.
- **2731.02.06 Length.** The length of the liner shall be that which is deemed necessary by the Contractor to effectively carry out the insertion, provide test samples, and seal the liner at the inlet and outlet of the manhole. Individual inversion runs may be made over one or more manhole to manhole sections as determined.

- **2731.02.07** The Contractor shall provide a liner exhibiting the properties described in these Specifications. Prior approval of shop drawings related to any or all materials or methods of installation shall not relieve the Contractor of this responsibility.
- **2731.02.08 Manufacture Information.** It shall be necessary for the Contractor to obtain the County's prior approval for all materials or processes and the County shall have the power at any time to order the Contractor to modify or discontinue any practice. All such orders shall be given in writing.
- **2731.02.09** Wall Color. The wall color of the interior pipe surface of the rehabilitated pipe after installation shall be a light reflective color so that a clear detailed examination with closed circuit television inspection equipment may be made.

2731.03 CONSTRUCTION REQUIREMENTS

2731.03.01 Inspections.

- (a) Prior to beginning insertion of the liner, the Contractor shall inspect the cleaned line by use of closed-circuit T.V. cameras, and shall confirm to his own satisfaction the condition of the line and confirm that the lines are adequately cleaned. Insertion of the liner by the Contractor shall serve as evidence of his acceptance of the condition of the piping and the suitability of the liner insertion within the host pipe. Failure of the liner system due to inadequately cleaned host pipes shall be repaired by the Contractor at no cost to the County.
- (b) During the process of manufacture and impregnation, the County shall have reasonable opportunity to examine all operations where the manufacture and impregnation (when applicable) of the liner is being carried out. The Contractor shall give appropriate prior notice in order that the County's inspector may be on hand to observe the various processes.
- (c) No work shall be performed by the Contractor except in the presence of the County inspection personnel, unless otherwise approved. The Contractor shall coordinate his work schedule and give 48 hours (2 working days) prior notice regarding his intentions to perform any and/or all parts of the work, in order that the County's inspector may be on hand. Any work performed in the absence of the County's inspector is subject to removal and replacement at the Contractor's expense.
- (d) Upon substantial completion of the work the Contractor shall, in the presence of the County's inspector, inspect the line using closed-circuit television equipment. The video file thus produced shall be accompanied by a simultaneously produced, narrated sound file. The sound narration and visual inspection shall draw attention to all recognizable defects, imperfections, etc., and the location along the length of the piping shall be accurately noted. Also, the locations and all pertinent details regarding the entrance of service laterals into the main trunk sewer shall be accurately noted on the sound file. Electronic copies of the files shall become the property of the County. Televising shall be performed as specified in Section 2742, Television Inspection.

2731.03.02 Preparatory Procedures.

- (a) Coordination with the County: The Contractor shall provide a minimum of seven days advanced notice to the County, prior to initiating the work specified.
- **(b)** Notification of Residents: Prior to starting any and all Work, including cleaning and/or television inspection, it is the responsibility of the Contractor to notify all residents that could be affected by the Work. This notification shall consist of written information and verbal communication that outlines the tasks associated with the Work (i.e. cleaning and televisions inspection) and specific information regarding the rehabilitation and/or repair process, as well as timing of the project. The written information shall be delivered to each affected home or business at least 72 hours prior to the start of any and all work, and at minimum shall describe the work, schedule, how it affects the home/business, the project manager's name, crew foreman's name, emergency contact number, and detail how to identify crew The Contractor shall communicate verbally with the members/vehicles. homeowners/business owners the day prior to the beginning of any tasks being conducted on the section relative to the homeowners/business owners. The system being cleaned, inspected, rehabilitated and/or replaced is an active system and service must be maintained during the course of construction.
- (c) The Contractor shall implement necessary erosion and sediment control measures prior to initiating any work. These measures shall be in accordance with the most current federal, state, and local regulations.
- (d) The utilities must be marked by "Miss Utility" prior to construction layout.
- (e) The Contractor shall provide water and sewer to affected property owners in the event of extended service interruption, at no additional cost to the County. No property shall be without sewer service for more than eight (8) hours.
- (f) When necessary and approved by the County and all resident and commercial properties affected, the Contractor shall install appropriate access roads. The access road and all related items shall be removed at the end of the job. Final payment will not be made until the site is restored to original or better conditions, including removal of all gravel.
- (g) The actual sizes, lengths and materials of the pipes to be relined shall be as indicated on the plans, but shall be verified by the Contractor prior to commencing with the work, including prior to ordering of materials.
- (h) Cleaning: Cleaning of sewer lines and manholes shall be performed as specified in Section 2741, Sewer Line, Lateral, and Manhole Cleaning.
- (i) TV Inspection: Inspection of sewer lines shall be performed as specified in Section 2742, Television Inspection.
- (j) Flow Control: When required for acceptable completion of an insertion process, the Contractor shall provide for adequate flow control including but not limited to required pumping and bypassing as stipulated in Section 2740, Flow Control, of the Contract Documents.

- (k) Point Repairs: When required before lining process, point repairs shall be performed as specified in Section 2744, Point Repairs.
- (I) Intruding service connections shall be cut flush with the host pipe prior to liner installation. These connections shall be removed using remote robotic cutter equipment specifically designed for this purpose. The internal cutter shall be capable of cutting cast iron, PVC, vitrified clay pipe, and ductile iron pipe. All materials/cuttings shall be removed from the sewer and properly disposed of. NOTE: Point repairs shall be made only after remote intruding service removal methods were performed and shall be approved in advance by the County.
- (m) Material Removal: Refer to Section 2741, Sewer Line, Lateral, and Manhole Cleaning, for material removal.
- (n) Disposal of Materials: Refer to Section 2741, Sewer Line, Lateral, and Manhole Cleaning, for disposal of materials.
- (o) Visible Leaks: The Contractor shall seal all leaks and infiltration that will prevent the liner from curing properly and meeting the requirements of Specification Sections 2732 and 2733. Infiltration control is considered incidental and shall be included in the cost of the project.

2731.03.03 Sealing at Manholes Immediately Prior to Lining.

- (a) Contractor shall install hydrophilic end seals at all manhole penetrations prior to mainline rehabilitation, to form a watertight seal between the pipe liner and host pipe. The end seals must be composed of hydrophilic rubber and molded as a one-piece, 3-inch wide cylinder which when installed will form a 360 degree seal between the host pipe and the newly installed liner. The use of caulking, rope or band type of an end seal will not be allowed. Acceptable End Seals are the Insignia[™] End Seal Sleeve by LMK, or pre-approved equal.
- (b) The Contractor shall repair any manhole benches and inverts that have been damaged during the liner installation.

2731.03.04 Internal Drops.

(a) Internal drops shall be fully reinstated and fully cut out to original diameters and the Contractor shall brush each opening upon reinstatement.

2731.03.05 Service Connections.

- (a) Refer to Section 2751, Sanitary Sewer House Connection Reinstatement and Lateral Replacement for service connection reinstatement and replacement and to Section 2738, Sanitary Sewer Pipe Joint and Service Connection Testing and Grouting for grouting.
- (b) Connection of Service Laterals to the Rehabilitated Main: Tests for compliance shall be as specified in the Category 1000 of the County's Standards and Sections 2742, Television Inspection, 2738, Sanitary Sewer Pipe Joint and Service

Connection Testing and Grouting, and 2751, Sanitary Sewer House Connection Reinstatement and Lateral Replacement.

2731.03.06 Manhole, Cleanout and Pipeline Abandonment.

- (a) When underground utilities are to be abandoned in place, permanently plug, cap, or seal with concrete at the "construction limits" or at points shown.
- (b) Remove underground utilities as specified, and backfill resulting excavation with suitable material compacted as specified in the County's Standards. Permanently plug, cap, or seal utilities with concrete at the "construction limits" or at points shown or specified.
- (c) Sanitary sewer pipeline segments to be abandoned shall be securely plugged to the satisfaction of the County. Sewer lines to be abandoned that do not terminate at a manhole and/or are connected to a manhole to remain active, shall be excavated at the main, broken off, and plugged with concrete. The concrete shall extend a minimum of 2-feet into the pipeline. Sewer lines to be abandoned under buildings shall be filled with an approved flowable fill material.
- (d) Manhole and Cleanout Abandonment: Work includes the removal of the top 2-feet of the structure below final grade including casting and cover, punching a hole at the bottom of the manhole or cleanout, filling the rest of manhole or cleanout with an approved flowable fill, mortar plugging the lines at the manhole or cleanout (prior to fill), and permanent right-of-way restoration. Casting and covers shall be properly disposed of by the Contractor.
- (e) Backfill and surface restoration shall be in accordance with the County Standards and these Specifications.
- **2731.03.07 Defective Work.** Any defects, which, in the judgement of the County, will affect the integrity or strength of the lining, impede flow or operations and maintenance (O&M) equipment, or allow leakage into the lined pipe shall be repaired or the liner replaced at the Contractor's expense. Obtain approval of the County for method and length of repair, including open cut point repairs, which may require field or workshop demonstration. Prior to and following any repairs, the Contractor shall clean and television inspect the respective pipeline section(s), from manhole to manhole, at the Contractor's expense.
- **2731.03.08** Final Cleanup. Upon completion of rehabilitation work and testing, the Contractor shall clean and restore the project area affected by the Work, per Section 1700 of these Specifications.

2731.03.09 Payment and Final Acceptance.

- (a) Payment shall detail quantities by line item and shall have backup materials, including the breakdown of billable work for each line item.
- (b) Main line rehabilitation may be compensated once rehabilitation work is complete and post-installation CCTV inspections showing completion of work have been submitted to the County. Related rehabilitation tasks, including manhole rehabilitation and service connection grouting, lining, and/or replacement may be

compensated upon completion and approval of work and submission of required post-installation CCTV inspections. If defects are observed during the post-installation CCTV inspection, the Contractor shall make the repairs as specified herein. See individual sections for descriptions of items and basis of payment. Payment for an item does not indicate final acceptance of that item.

- (c) Upon completion of all work on each pipe segment, including repairs for defects observed during the post-installation CCTV inspections, the Contractor will reinspect the rehabilitated and/or repaired pipeline, including all related manhole and service connection/lateral work, by the use of closed-circuit TV cameras and shall submit a Final Acceptance CCTV Inspection, including color DVD and inspection log, of the work on each segment to the County for approval/acceptance of the work in accordance with Section 2742, Television Inspection. If the County deems the rehabilitated pipeline section is not clean enough for proper viewing and approval of the work, the Contractor shall clean the pipeline section in accordance with Section 2741, Sewer Line, Lateral, and Manhole Cleaning, and reinspect the respective pipeline section in accordance with Section 2742, Television Inspection, at no additional expense to the County. Payment for the Final Acceptance CCTV Inspection item will only be made once for each main-line section on which any rehabilitation, replacement, and/or repair work is performed. Payment of this item for a section indicates acceptance by the County of lining and lateral work on that section. Payment will only be made for Final Acceptance CCTV inspection footage reviewed and approved by the County.
- (d) Final completion of the contract will not be given until all defects are repaired, television inspected, and a Final Acceptance CCTV Inspection is submitted and approved in accordance with Section 2742 for each pipe segment and associated work included in the contract. Final Payment will only be made after the County has received and approved all required submittals and requested field data including, but not limited to, Final Acceptance Inspection Video Files, TV logs, curing logs, grouting logs, and inspector's reports for the entire rehabilitated section.
- (e) The Contractor shall be responsible for repairing all damage that is caused during the completion of the work. This includes, but is not limited to, repair of damaged water meters, sidewalks, driveways, landscaping and all other public and private property. All repairs shall be completed and the site restored to its original or better conditions before final payment is made. All repairs and site restoration shall be approved by the County Inspector before final payment is made. Damage caused as a result of negligence of the Contractor, in the opinion of the County, will not be compensated for and will be considered incidental to existing, approved bid items.
- **2731.03.10** Warranty Inspection. The Contractor may be required to clean and televise any sections (from manhole to manhole) that have been repaired as a result of defects in the work product, at the end of a two year warranty period to assure quality. The lines shall be cleaned and televised in accordance with Section 2741, Sewer Line, Lateral, and Manhole Cleaning and Section 2742, Television Inspection. This warranty inspection shall be included in the cost of the project.

2731.04 MEASUREMENT AND PAYMENT

- **2731.04.01 Removal of Protruding Service Connections.** Removal of protruding service connections will be paid for at the unit price bid for each protruding connection removed.
 - (a) **Basis of Payment.** Price per each shall include all labor, materials, equipment, tools and incidentals for removal of protruding service connections. Protruding connections are considered connections that protrude more than ½-inch into the main pipeline. The protruding connections shall be removed by remote methods, without excavation, unless otherwise approved by the County. Materials shall include all appurtenances necessary to complete the work as specified.
- **2731.04.02 Abandonment of Existing Sanitary Sewer Manholes.** Abandonment of existing sanitary sewer manholes shall be measured in units of each abandoned.
 - (a) **Basis of Payment.** The unit price per each shall be full compensation for excavating, removal and disposal of the top 2-feet of the structure below final grade including the manhole frame and cover, punching a hole at the bottom of the structure, plugging of any pipes, flowable fill, compacting, pavement removal and disposal, site cleanup, disposing of surplus or unsuitable material, and for furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work as specified.
- 2731.04.03 Abandonment of Existing Sanitary Sewer Force Mains, Gravity Sanitary Sewer Mains and Laterals. Abandonment of existing sanitary sewer force mains, gravity sanitary sewer mains and laterals shall be measured in units of each line abandoned.
 - (a) **Basis of Payment.** The price per each line abandoned shall be full compensation for excavating, breaking, plugging, concrete, pavement removal and disposal, site cleanup, disposing of surplus or unsuitable materials, and for furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work as specified.
- **2731.04.04** Access Road. Installation of necessary access roads, as approved by the County, shall be measured per square yard of access road installed.
 - (a) **Basis of Payment.** The price per square yard shall be full compensation for furnishing all materials, including mats, gravel, rollers, and planks, labor, tools, equipment and incidentals necessary to complete the work as specified. This shall include access road installation and removal, preconstruction video, as well as site restoration to original or better conditions.

END OF SECTION

SECTION 2732

PIPE REHABILITATION BY CURED-IN-PLACE METHOD (CIPP) (PER ASTM F1216)

2732.01 DESCRIPTION

- **2732.01.01 Reference.** All applicable requirements of other portions of the Contract Documents apply to the Work of this Section.
- **2732.01.02 Description of Work.** These specifications include requirements for all design, materials, transportation, equipment and labor necessary to rehabilitate deteriorated sections of sewer listed in the contract documents by means of cured-in-place pipe (CIPP) liner, using the inversion and curing of a resin-impregnated tube method, per ASTM F1216. This specification is intended to identify the minimum requirements of the County.
- **2732.01.03** Submittals After the Notice of Award. The Contractor shall have ten (10) working days after the date of award to submit the following information to the County for review and approval. Failure to do so may be grounds for termination of contract. This shall be in addition to the information required pursuant to Section 2731.
 - (a) Detailed description of lubricant proposed for inversion process. Lubricant shall be compatible with the County's and/or City's wastewater treatment plant operations and pretreatment program.
 - (b) Certification of resin volume and required 5 to 10% addition.
 - (c) Certification from resin manufacturer regarding approval of resin dye quantity and type.
 - (d) Information on the maximum allowable tensile stress for the tube, from the felt manufacturer.
 - (e) Shop drawings and product data to identify materials of construction (including resins, catalysts, felt, etc.), felt manufacturer, location of the felt manufacturing facility, location of the wet-out facility, etc. All CIPP liner shall be manufactured from this designated wet-out facility throughout the entire Contract unless specifically approved otherwise by the County in writing. Multiple wet-out facilities shall not be allowed.
 - (f) A complete description of the proposed wet-out procedure for the proposed technology.
 - (g) Provide data on the maximum allowable stresses and elongation of the tube during installation and the means in which the Contractor will monitor stress and elongation.
 - (h) Temperature monitoring system, if required.

- **2732.01.04 Submittals After the Notice to Proceed.** The Contractor shall submit the information listed below, after the Notice to Proceed, for review and approval. This shall be in addition to the information required pursuant to Section 2731.
 - (a) Suitable documentation for each liner, indicating manufacturer, trade name, time and date of manufacture, felt thickness, number of layers, diameter, length of liner, resin types, resin content, catalyst, relevant batch numbers, storage limitations and requirements, etc.
 - (b) CIPP liner curing reports documenting the liner installation for all sewer segments shall be submitted after the notice to proceed. The CIPP liner reports shall document all details of liner installation, including manhole numbers, street names/sewer location, project number, date, time, temperature, curing temperature, curing time, CIPP liner thickness, etc. A sample report shall be submitted to the County for approval prior to the installation of any CIPP lining.
 - (c) Product Warranty and Certification Form: To insure that all products and materials proposed for use on this project are of the highest quality and specifically designed and manufactured for the intended installation or use, a Product Warranty and Certification Form shall be completed by the rehabilitative product manufacturer(s), manufacturer's representative or vendor as well as the Cured-In-Place Pipe (CIPP) liner installer certifying that the product(s) they are proposing to use is specifically designed for the intended application, installation and/or function. Failure to complete this form may prevent the product(s) from being used on this project.
- **2732.01.05** Submittals After Cured-in-Place Pipe Liner Installation. The Contractor shall submit the information listed below, after the CIPP liners have been installed. This shall be in addition to the information required pursuant to Section 2731.
 - (a) If requested, wet-out forms with detailed information including, but not limited to, roller gap settings, start times, finish times, gel times, resin injection locations, and any other pertinent data documenting the wet-out for each section of CIPP liner manufactured.

PRODUCT WARRANTY AND CERTIFICATION FORM

REFERENCE (PROJECT NAME AND CONTRACT NUMBER):_____

THE UNDERSIGNED HEREBY ATTESTS THAT HE HAS EXAMINED ALL THE REFERENCED PROJECT INFORMATION, PROJECT INSTALLATION REQUIREMENTS AND THE CONTRACT SPECIFICATIONS AND HEREBY WARRANTS AND CERTIFIES THAT THE REHABILITATION PRODUCTS THAT THEY PROPOSE TO FURNISH, DELIVER AND INSTALL FOR THIS PROJECT MEETS OR EXCEEDS THE REQUIREMENTS OF THESE CONTRACT SPECIFICATIONS, IS SUITABLE FOR THE INTENDED PURPOSE AND INSTALLATION, AND WILL SATISFACTORILY PERFORM TO THE CRITERIA SPECIFIED. THIS WARRANTY SHALL BE IN ADDITION TO, AND NOT IN LIEU OF, ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED.

PRODUCT:

MANUFACTURER:_____

Address:

By:___

(Typed Name and Title)

(SEAL)

(Signature)

The Product Warranty and Certification must be signed by a Principal Person (President, Vice-President, etc.) of the Product's Manufacturer. In the event the manufacturer is not the Supplier then a Principal Person of the Supplier must also sign this form.

MANUFACTURER'S REPRESENTATIVE/VENDOR:_____

Address:

By:___

(Typed Name and Title)

(SEAL)

(Signature)

_____/s/ _____(Date)

(Date)

The Product Warranty and Certification must be signed by a Principal Person (President, Vice-President, etc.) of the Installation Contractor. In the event the manufacturer is not the Installation Contractor then a Principal Person of the Installation Contractor must also sign this form.

INSTALLATION CONTRACTOR:_____

Address:

By:___

(Typed Name and Title)

(SEAL)

(Signature)

_____/s/ _____(Date)

2732.02 MATERIALS

- 2732.02.01 The liner shall generally consist of a corrosion resistant polyester, vinyl ester, or epoxy thermosetting resin, or approved equal, impregnated tubing material consisting of one or more layers (with any layer not less than 1.5mm thick) of flexible non-woven polyester felt or fiberglass fiber. The liner system shall meet the requirements of ASTM F1216, ASTM F1743, and ASTM D5813 and shall be constructed to absorb and carry resins, withstand inversion pressures and curing temperatures, have sufficient strength to bridge missing pipe, stretch to fit irregular pipe sections, and shall invert smoothly around bends. The felt content of the CIPP liner shall be determined by the Contractor, but shall not exceed 25 percent of the total impregnated liner volume. The liner shall fit tightly to the internal circumference of the existing pipe, and an impermeable, flexible membrane integrally bonded to the internal circumference of the felt, thus forming a smooth, chemically inert internal flow surface. The membrane shall be an appropriate thickness to accommodate the installation and cure conditions and shall not be considered to impart any structural strength to the liner but considered an integral part of the liner system. The membrane (internal liner coating) shall be constructed of a material that is suitable for the liner installation/cure method used by the Contractor. The liner shall be fabricated to a size that when installed will neatly fit the internal circumference of the pipe to be lined. Allowance for longitudinal and circumferential stretching of the liner during installation shall be made by the Contractor. All CIPP linings shall be from a single manufacturer. The cured liner shall have a 50-year life span.
- **2732.02.02** The resin volume shall be adjusted by adding 5 to 10% excess resin for the change in resin volume due to polymerization and to allow for any migration of resin into the cracks and joints in the original pipe.
- **2732.02.03** Wall Thickness: The required structural CIPP wall thickness shall be designed in accordance with the guidelines in Appendix X1 of ASTM F1216. The minimum liner thickness for nominal pipe diameters of 8 to 12 inches shall be 6 mm. Minimum liner thickness for nominal pipe diameters of 14 to 16 inches shall be 7.5 mm. Minimum liner thickness for nominal pipe diameters of 18 inches shall be 9 mm. In cases where ovality exceeds 10%, or where pipes are egg or oval shaped, alternative methods of design may be considered by the Engineer. The categories of design parameters noted in Tables 2732-1, 2732-2, and 2732-3 shall be used, unless otherwise directed by the County. The selected thicknesses shall be uniform for each pipe diameter and shall be based on the thickest, most conservative design wall thickness calculated for each diameter.
- **2732.02.04 Common Design Parameters:** Design inputs generally considered to be the same from site to site for a particular project are provided in Table 2732-1.

Table 2732-1 Common Design Parameters	
Safety Factor ⁽¹⁾	2.0
Soil Modulus ⁽²⁾	700 psi
Soil Density ⁽³⁾	120 pcf

Notes Table 2732-1:

- 1. The safety factor may be reduced to 1.5 at the discretion of the Engineer, normally in the case where there is accurate and detailed information known about the existing pipe and soil conditions.
- 2. In the absence of site-specific information, the County assumes a soil modulus of 700 psi.
- 3. In the absence of site-specific information, the County assumes a soil density of 120 pcf.
- **2732.02.05** Site Specific Parameters: The information listed in Table 2732-2 is specific to each manhole to manhole run of pipe. The Contractor shall use for design the information provided by the County and information the Contractor collects during site visits for each manhole to manhole run.

Table 2732-2 Site-Specific Design Parameters	
Ovality	Notes 1, 2
Ground Water Depth Above Invert	Notes 1, 3
Soil Depth Above Crown	Note 1
Live Load	Notes 1, 4
Design Condition (Fully Deteriorated)	Notes 1, 5
CIPP Thickness	Notes 1, 6, 7

Notes Table 2732-2:

- 1. Design thicknesses and complete site-specific designs, as stated herein, in accordance with ASTM F1216 (**Appendix X1**), shall be submitted after the Notice of Award.
- 2. The Contractor shall estimate the ovality by viewing the DVDs/videotapes, data and notes provided in the Contract Documents, and any other information provided by the County. If DVDs/tapes are not available, and the Contract Plans do not state otherwise, the Contractor shall assume an ovality of 3%. In cases where the ovality exceeds 10%, the Contractor may consider employing alternative design methods (such as beam design methods) to determine the pipe thickness, at no additional cost to the County.
- 3. In the absence of accurate water table information or high water elevation observed during the site visit (stream, ponds, etc.), the Contractor shall assume a seasonal groundwater elevation of 0 feet below the ground surface.
- 4. CIPP is subjected to traffic live loads as calculated by AASHTO Standard Specifications for Highway Bridges, HS20-44 Highway Loading.

- 5. The Contractor shall assume the pipe segments are fully deteriorated.
- 6. Thicknesses specified (designed by the Contractor and approved by the County) are the final, in-ground thicknesses required. Measured sample thicknesses will not include polyurethane or polyethylene coatings, any layer of the tube not fully and verifiably impregnated with resin, or any portion of the tube not deemed by the County to be a structural component of the composite.
- 7. The Contractor must consider any factors necessary to ensure the final, cured-in-place pipe thickness is not less than specified (designed by the Contractor and approved by the County) above. These factors include any stress applied to the material during transportation, handling, installation and cure; the host pipe's material type, condition, and configuration; weather (including ambient temperature conditions); and any other factors which are reasonably expected to be found in existing sanitary sewer systems.
- **2732.02.06 Product-Specific Design Parameters:** Certain design inputs vary by manufacturer, processes design, or installation technique. These variables are listed in Table 2732-3 with explanatory notes that follow.

Table 2732-3 Minimum Product-Specific Design Parameters	
Minimum Enhancement Factor, K ⁽¹⁾	K = 7
Minimum Initial Flexural Strength (ASTM D790) ⁽²⁾	$\Phi_{\rm s} = 4500 \ {\rm psi}$
Minimum Initial Flexural Modulus of Elasticity (ASTM D790) ⁽²⁾	$E_{s} = 350,000 \text{ psi}$
Minimum Retention of Properties to Account for Long-Term Effects ⁽³⁾	50%
Minimum Long-Term Flexural Modulus of Elasticity ⁽³⁾	E _L = 175,000 psi

Notes Table 2732-3:

- 1. Enhancement factor (K) is the additional buckling or load resistance of the rehabilitation product due to the restraining action of the host pipe. The tighter the fit of the product within the host pipe, the greater the value of K. Third party testing of external hydrostatic loading capacity of restrained pipe samples shall be conducted to verify the enhancement factor, K. The minimum values provided are based on the "Long-Term Structural Behavior of Pipeline Rehabilitation Systems," Trenchless Technology Center, 1994.
- 2. Initial values are defined in ASTM D790. The value indicates minimum strength both in the circumferential and longitudinal direction. The County may, at any time prior to installation, direct the Contractor to make cured samples (according to ASTM F1216) and test them in accordance with the listed ASTM standards to verify initial values of physical properties. In such tests the Contractor's samples must achieve a 95% passrate.

3. The initial flexural modulus is multiplied by the creep factor (or percentage retention) to obtain the long-term values used for design. Long-term values shall be verified by long-term external pressure testing of circular lengths of the pipe material by third-party labs prior to bid (e.g. Trenchless Technology Center - TTC). It is understood that the material's modulus of elasticity will not change over time; however, by convention the modulus is reduced for design purposes for all plastic pipe sections to account for the reduced ability of plastic pipe to carry loads due to the changes in pipe geometry resulting from the effects of creep over time.

2732.02.07 Resin Content

- (a) The resin content of the liner shall be 10-15% by volume greater than the volume of air voids in the felt liner bag.
- (b) The resin used shall not contain fillers, except those required for viscosity control, fire retardance, or as required to obtain the necessary pot life. Thixotropic agents which will not interfere with visual inspection may be added for viscosity control.
- (c) Dye shall be added to resins to improve visual inspection of the cured liner. The types and quantities of dyes added shall have prior approval from resin manufacturer.
- **2732.02.08** Chemical Resistance: The corrosion resistance of the resin system shall be tested by the resin manufacturer in accordance with ASTM D543. The result of exposure to the chemical solutions listed below shall produce loss of not more than 20 percent of the initial physical properties when tested in accordance with ASTM D543 for a period of not less than 1 year at a temperature of 73.4 °F plus or minus 3.6 °F. For applications other than municipal wastewater, conduct chemical resistance tests with actual samples of the fluid to be transported in the pipe and in accordance with procedures approved by the County. The cured liner shall also be chemically and physically resistant to external exposure of soil bacteria, moisture, roots, and chemical attack that may be due to material in the surrounding ground.

TABLE 2732-4 CONCENTRATIONS OF CHEMICAL SOLUTIONS FOR CHEMICAL RESISTANCE TEST		
CHEMICAL SOLUTION	CONCENTRATION, %	
Tap Water (pH 6-9)	100	
Nitric Acid	5	
Phosphoric Acid	10	
Sulfuric Acid	10	
Petroleum Hydrocarbon Based Fuels (e.g. Gasoline, diesel, etc.)	100	
Vegetable Oil ¹	100	
Detergent ²	0.1	
Soap ²	0.1	
Domestic Sewage*	100	

^{1.} Cotton seed, corn, or mineral oil

^{2.} As per ASTM D543

* Contractor to include a written statement that their material and resin combination has been successfully installed in the United States and is chemically resistant to domestic sanitary sewage.

2732.02.09 Manufacture Information

- (a) The Contractor shall deliver the uncured resin impregnated liner system to the site. Unless otherwise approved by the County, the bag shall not be impregnated at the site. The application of the resin to the felt tubing (wet-out) shall be conducted under factory conditions and the materials shall be fully protected against UV light, excessive heat, and contamination at all times. The liner system shall be impregnated with resin not more than 72 hours before the proposed time of installation and stored out of direct sunlight at a temperature of less than 30°F. Continuously monitor liner materials during transport and storage with a temperature recorder and data storage. If requested, the Contractor shall furnish the County with the recorder readings before installation. Material that is exposed to temperatures outside of the manufacturer's limits will be rejected. The Contractor shall provide all appropriate transport, handling and protection equipment including refrigerated, or otherwise suitably cooled, transport equipment in accordance with the manufacturer's requirements.
- (b) All fabricating and Contractor testing shall be carried out under cover and no materials shall be exposed to the weather until they are ready to be inserted. All materials should be protected from the weather and exposure to ultra-violet light as practicable during the manufacture and installation process.

(c) Each liner shall be accompanied by suitable documentation indicating manufacturer, trade name, time and date of manufacture, felt thickness, number of layers, diameter, length of liner, resin types, resin content, catalyst, relevant batch numbers, storage limitations and requirements, etc. and this information shall be submitted to the County.

2732.02.10 Preliner.

(a) A preliner may be required to help control infiltration or accommodate other liner installation requirements. The preliner shall be as recommended by CIPP lining system manufacturer. If required for successful installation of the liner, the preliner shall be utilized and installed as part of the CIPP lining process at no additional cost to the CIPP lining work.

2732.03 CONSTRUCTION REQUIREMENTS

2732.03.01 Lining Procedures.

- (a) The Contractor will not be compensated for liners ordered without confirmation of length and field conditions.
- (b) The liner shall be installed in accordance with ASTM F1216.
- (c) The Contractor shall conduct operations in accordance with applicable OSHA standards, including those safety requirements involving work on an elevated platform and entry into a confined space. Take suitable precautions to eliminate hazards to personnel near construction activities when pressurized air is being used.
- (d) All service locations shall be measured for location prior to liner installation. All service connection measurements and the clockwise position of the openings shall be recorded in a log to aid in the reinstatement of service connections after lining. The approximate locations of identified active service taps are shown on the Contract Drawings; however, the Contractor shall determine the exact location and number of service connections by the dye test method or other methods approved by the County. The Contractor shall accurately field locate existing service connections, whether in service or not. For rehabilitated lines, the Contractor shall use existing service locations to reconnect service lines to new liner, unless otherwise specified on the Contract Drawings or directed by the County. During the line preparation and work operation, inactive sewer house connections shall not be cut but shall be left lined over, unless directed by the County.
- (e) Temperature monitoring systems are required for all 18" or larger sewer, any sized sewer in locations with significant known groundwater infiltration, or if the pipe is within 50 feet of stream, river or lake. This system shall be installed at the invert of the pipe and be installed per the manufacturer's recommended procedures. The temperature sensors shall be placed at intervals as recommended by the sensor manufacturer. Additional sensors shall be placed where significant heat sinks are likely or anticipated. The sensors, if installed, shall be monitored by a computer using a tamper proof data base that is capable of recording temperatures at the

interface of the liner and the host pipe. Temperature monitoring systems shall be Zia Systems, Vericure by Pipeline Renewal Technologies, or approved equal.

- (f) In the event of insertion being delayed after impregnation by unexpected site conditions but prior to the start of the insertion process, the Contractor shall store, at his own cost, the liner, for a further period of at least 72 hours, below 30°F for use when conditions allow.
- (g) The liner shall be inverted into the pipeline from a suitable platform located above the manhole or other approved point of inversion. The Contractor shall be allowed to insert the liner using another process, which has been approved by the County. The free open end of the liner bag shall be firmly secured to the platform and the folded liner passed down a suitably reinforced column to a chute or bend leading to the opening of the pipe to be lined. Insert liner without twisting, cutting, tearing, separating, kinking, gouging, overstressing, resin loss, or double-ups. The loss or discharge of resin, other lining materials, or byproducts downstream is not permitted. Potable water at ambient temperature shall be supplied to the platform at a rate sufficient to cause controlled installation of the liner into the pipeline.
- (h) Liner inversion rate for the inversion method shall not exceed 32 feet per minute and the tail of the liner or the tail tag rope shall be suitably restrained to prevent liner run away, if applicable.
- (i) The Contractor shall supply a suitable heat source and recirculation equipment capable of delivering required curing temperature to the far end of the liner to uniformly raise the water temperature in the entire liner, once inverted in the pipeline, above the temperature required to commence the exothermic reaction of the resin as determined by the catalyst system employed.
- (j) The heat source shall be fitted with suitable monitors to gauge and record the pressure and temperature of the incoming and outgoing water supply to determine when uniform temperature is achieved throughout the length of the liner. Another such gage shall be placed between the impregnated tube and the pipe invert at the termination to determine the temperatures during cure. Install thermocouples at the top and bottom (12 and 6 o'clock positions) of the liner between the liner and the host pipe. If the liner is installed through manhole structures, gages shall also be placed at each structure.
- (k) Initial cure will occur during temperature heat-up and shall be completed when exposed portions of the new pipe appear to be hard and sound and the remote temperature sensor indicates that the temperature is of a magnitude to realize an exotherm or cure in the resin. After initial cure is reached, the temperature shall be raised to the post-cure temperature recommended by the resin manufacturer. The post-cure temperature shall be held for a period as recommended by the resin manufacturer, during which time the recirculation of the water and cycling of the boiler to maintain the temperature shall continue. The curing of the CIPP must take into account the existing pipe material, the resin system, and ground conditions (temperature, moisture level, and thermal conductivity of soil).
- (1) The curing period shall be carried out under an inversion head to maintain a minimum hoop tension in the liner felt of 1 lb/in^2 .

- (m) If cool-down is to be accomplished by the introduction of cool water into an inversion standpipe to replace the water being drained from a small hole made in the downstream end, cool the hardened pipe to a temperature below 100 degrees F (38 degrees C) before relieving static head in the inversion standpipe. Ensure that, in the release of the static head, a vacuum will not be produced that could damage the newly installed CIPP liner.
- (n) Vent and/or exhaust noxious fumes or odors generated during and remaining after the curing process is completed. This process shall remain in place at all manholes, laterals, etc. until noxious odors have dissipated to an acceptable level in accordance with OSHA requirements for the materials used and there is no more air pollution or potential health hazard left to the general public or the construction workers.
- (o) The Contractor shall maintain a curing log of CIPP temperatures at the upstream and downstream manholes during the curing process to document that proper temperatures and cure times have been achieved. The logs shall be required to be submitted to the County.
- (**p**) Invert through Manholes. The invert shall be continous and smooth through all manholes. If a liner is installed through a manhole, the bottom portion of the liner shall remain and the bench of the manhole shall be grouted and shaped as necessary to support the liner. If the liner terminates on either side of a manhole, the invert shall be built up to remove any flow restrictions and to form a continuous invert through the manhole. The cost of this work shall be included in the unit price bid for the liner.
- (q) The finished pipelining shall be continuous over the entire length of an insertion run between two manholes or structures and be as free as commercially practicable from visual defects such as fins, foreign inclusions, dry spots, air bubbles, pinholes, dimples and delamination. The lining shall be impervious and free of leakage from the pipe to the surrounding ground or from the ground to the inside of the lined pipe. Defects that will impede flow or maintenance equipment will not be permissible. Pinholes and leaking patches will not be allowed. If found they must be repaired per the manufacturer's recommendations, at the Contractor's expense.
- (r) The inner surface shall be free of cracks and crazing with smooth finish and with an average of not over two pits per 12 inch square, providing the pits are less than 0.12 inch in diameter and not over 0.04 inch deep and are covered with sufficient resin to avoid exposure of the inner fabric. Some minor waviness, that in the County's opinion will not appreciably decrease the flow characteristics or be the cause of a possible blockage, shall be permissible.
- (s) Steam cure of the liner is an acceptable method and shall meet the following requirements:
 - (1) There shall be manifolds connected at both the inlet and outlet air/steam hoses. Temperature and pressure sensors shall be located on the inlet manifold. The installation equipment shall include an inlet air/steam hose, air compressor, acceptable steam source, and monitoring and control equipment in accordance

with the manufacturer's recommendations. There shall also be an outlet air/steam hose mounted to a gauge station that has a pressure adjustment valve, temperature gauge, and pressure gauge.

- (2) The liner shall be inflated with adequate pressure to hold the liner tightly against the pipe wall. Once the correct pressure is reached, the outlet valve shall be used to maintain this pressure.
- (3) Once the liner is inflated, the temperature shall be adjusted according to the manufacturer's recommendations. The temperature shall be monitored by the sensors that are attached to the liner until the recommended temperature is reached. Time, temperatures, and pressures shall be recorded continuously throughout the curing process and submitted to the County at the end of the installation. This log will insure that the proper curing of the liner was carried out.
- (4) If recommended by the manufacturer, a post curing steam shall be conducted in order to fully develop the chemical resistance and resin strength of the liner.
- (5) The Contractor shall gradually cool the liner down by replacing the steam in the line with air and water, if necessary. The temperature, measured by the sensors attached to the liner, shall be lowered to 90°F or as recommended by the manufacturer.
- (6) Once the cure is complete, the manifolds and then the calibration hose shall be detached and removed from the line.

2732.03.02 Testing

- (a) The Contractor shall collect representative coupon samples/specimens as described below. At minimum, a coupon shall be collected for each pipe diameter that is lined and each liner thickness, unless otherwise specified in writing by the County. For every 1,000 linear feet of CIPP liner installed for the first 10,000 linear feet, the Contractor shall perform sampling and testing at his expense and shall supply results to the County. The frequency of testing may be reduced as approved by the County after sufficient tests are performed to verify the CIPP liner design, production, and installation procedures. Likewise, the frequency of testing may be increased by the County and performed by the Contractor at no additional cost to the County when the required tests show that the installed CIPP liner does not meet the specifications. After the 10,000 feet of acceptable test results are received, the test sample frequency can be reduced to one sample every 2,000 feet as long as samples continue to meet all minimum standards and sampling results are received in a timely manner. If a test is not passed, the lining will not be accepted. The Contractor shall stamp or mark the test pieces with the date of manufacture and batch number. These samples shall be paid for under the Pay Item for sanitary sewer rehabilitation, for the respective diameter sizes.
- (b) Remove restrained samples of the installed CIPP liner at least 18-inches in length. The sample shall be captured by installing the CIPP liner through a section of PVC pipe (same diameter as the existing sewer diameter) within the most downstream manhole of the installation and at all intermediate manholes if multiple sewer

segments are lined at the same time. The Contractor may elect to cut the sample longitudinally and provide half of the sample to the independent testing laboratory and keep the other half of the sample for additional testing if necessary.

- (c) Testing shall be performed by an ASTM-certified independent testing laboratory. The Contractor shall submit to the County the name and location of the independent testing laboratory, a certified statement from the laboratory indicating that they are independent from and not associated with the Contractor in any way, and the ASTM certification for the independent testing laboratory.
- (d) All expenses for sampling and testing of the installed liner shall be paid for by the Contractor. The cost of all manufacturer's testing to qualify products furnished to the project site shall be the responsibility of the Contractor.
- (e) Should the County desire to make additional independent tests, the Contractor shall, upon request of the County, furnish any reasonable number of test pieces of raw material samples as the County may require, stamped or marked with the date of manufacture and batch number if applicable.
- (f) The test specimen shall be conditioned in accordance with procedure 'A' of ASTM Designation D618, Standard Practice for Conditioning Plastics for Testing.
- (g) The test specimen shall be prepared and physical properties tested in accordance with ASTM F1216, Section 8.1. The properties shall meet or exceed the higher of the values identified in Table 1 of ASTM F1216 and Table 2732-3 of this Specification.
- (h) In addition to the testing requirements specified above, the Contractor shall verify that installed thickness of the CIPP is within minus 5 percent and plus 10 percent of the specified thickness. The ASTM-certified independent testing laboratory shall test the samples to determine the installed liner thickness (conditioned and prepared in accordance with ASTM D618 and ASTM D5813, and tested in accordance with ASTM D790).
- (i) It is preferred that all samples be shipped to the independent laboratory the same day as installation. At the Contractor's discretion, samples may be sent in batches but in no case later than 30 days after installation. The results of the measurements for each sample shall be submitted to the County within 30 days of the sample's ship date to the laboratory. The costs for testing shall be included in the bid price for rehabilitation including the cost of all manufacturer's testing to qualify products furnished to the project site.
- (j) Any CIPP lining that does not meet the specified installed strength and/or thickness requirements, regardless of the amount below the specified requirements, shall be corrected by the Contractor in a manner approved by the County at no additional cost to the County. The County's decision on how to correct the deficient CIPP liner installations shall be final. Options for correcting deficient CIPP liner installations that will be considered by the County include the following: removal of the existing CIPP liner and re-lining the sewer, open-cut replacement of the sewer from manhole to manhole, or re-lining the sewer with the existing CIPP liner in place.

2732.04 MEASUREMENT AND PAYMENT

- **2732.04.01 Cured-in-Place Pipe Lining.** Measurement for payment will be the actual linear footage installed, measured along the centerline of the pipe. Length will be measured from edge of manhole to edge of manhole, unless the liner extends through a manhole, in which case the distance to and from that manhole will be measured to the center of that manhole. Payment is based on the CIPP thickness required for the deepest flow line of the rehabilitated segment.
 - **(a) Basis of Payment.** Payment shall be made at the contract unit price bid per linear foot of pipe rehabilitated. The unit price includes all labor, incidentals, materials, resident notification, flow control, preconstruction video taping, confined space entry and equipment, sediment and root removal, debris collection and disposal, removal of protruding service connections (protruding less than ¹/₂ inch into the main pipeline), re-establishing lateral service connections, dewatering, traffic control, erosion and sediment control, excavation pits, pre- and post-cleaning, pre and post-installation CCTV inspection including submission of videos and television logs, warranty inspections, sealing the liner in the manholes and at service connections, required compliance tests, initial and general backfill and compaction, borrow for backfilling, offsite disposal of unsuitable material, pavement removal and disposal, site cleanup, and all other rehabilitation work, not included under other items, necessary to complete the rehabilitation as specified. Payment for this item does not indicate final acceptance of this item; final acceptance is contingent on the receipt, review, and approval of the Final Acceptance TV Inspection described in Section 2742.
- 2732.04.02 Mandatory Utilization of Epoxy Vinyl Ester Resin where ordered for use in certain, specific industrial waste areas or areas with high temperature waste will be the actual per inch of nominal pipe inside diameter and per linear foot of cured-in-place pipe lining installed using the epoxy vinyl ester resin.
 - (a) This item shall only be paid, where specifically ordered in the work order, in addition to the applicable unit prices paid under the sewer rehabilitation items, whether or not the Contractor is otherwise utilizing the epoxy vinyl ester resin. Each unit price bid will be full compensation for all additional costs of utilizing the epoxy vinyl ester resin. The County will not pay for this item when the Contractor elects the use of epoxy vinyl ester resin, without specific direction to do so.

END OF SECTION

SECTION 2733

PIPE REHABILITATION BY PULLED-IN-PLACE GLASS REINFORCED PLASTIC (GRP) CIPP METHOD (PER ASTM F2019)

2733.01 DESCRIPTION

- **2733.01.01 Reference.** All applicable requirements of other portions of the Contract Documents apply to the Work of this Section.
- **2733.01.02 Description of Work.** These specifications include requirements for all design, materials, transportation, equipment and labor necessary to rehabilitate deteriorated sections of sewer listed in the contract documents by means of cured-in-place thermosetting resin pipe (CIPP) liner, using the pulled in place installation of glass reinforced plastic (GRP), per ASTM F2019. This specification is intended to identify the minimum requirements of the County.
- **2733.01.03** Submittals After the Notice of Award. The Contractor shall have ten (10) working days after the date of award to submit the following information to the County for review and approval. Failure to do so may be grounds for termination of contract. This shall be in addition to the information required pursuant to Section 2731.
 - (a) Certification documentation concerning date, type of resin, mixing ratio, liner thickness, temperature, type of glass fiber, liner type, manufacturing date, and last installation date.
 - (b) Certification from resin manufacturer regarding approval of resin dye quantity and type.
 - (c) Information on the maximum allowable tensile stress for the tube, from the manufacturer.
 - (d) Shop drawings and product data to identify materials of construction (including resins, catalysts, fabric, etc.), tube material manufacturer, location of the manufacturing facility, location of the wet-out facility, etc. All GRP CIPP liner shall be manufactured from this designated wet-out facility throughout the entire Contract unless specifically approved otherwise by the County in writing. Multiple wet-out facilities shall not be allowed.
 - (e) A complete description of the proposed wet-out procedure for the proposed technology.
 - (f) Provide data on the maximum allowable stresses and elongation of the tube during installation and the means in which the Contractor will monitor stress and elongation.
 - (g) Description of monitoring system for proposed curing method.

- **2733.01.04 Submittals After Notice to Proceed.** The Contractor shall submit the information listed below, after the Notice to Proceed, for review and approval. This shall be in addition to the information required pursuant to Section 2731.
 - (a) If requested, wet-out forms with detailed information including, but not limited to, roller gap settings, type of resin, volume and mixing ratios, type of glass fibers, wet out start times and dates, wet out locations, finish times, gel times, resin injection locations, and any other pertinent data documenting the wet-out for each section of GRP CIPP liner manufactured.
 - (b) GRP CIPP liner curing reports documenting the liner installation for all sewer segments. The GRP CIPP liner reports shall document all details of liner installation, including manhole numbers, street names/sewer location, project number, date, time, temperature, curing temperature, curing time, GRP CIPP liner thickness, etc. A sample report shall be submitted to the County for approval prior to the installation of any GRP CIPP lining.
 - (c) A full protocol for time, rate of travel of the ultraviolet assembly, pressures, and amount of lamps in operation shall be maintained and recorded automatically from the beginning of inflation of the liner until the end of the curing. This information shall include project name, address, section, and date to clearly identify the rehabilitated section.
 - (d) Product Warranty and Certification Form: To insure that all products and materials proposed for use on this project are of the highest quality and specifically designed and manufactured for the intended installation or use, a Product Warranty and Certification Form shall be completed by the rehabilitative product manufacturer(s), manufacturer's representative or vendor as well as the Cured-In-Place Pipe (CIPP) liner installer certifying that the product(s) they are proposing to use is specifically designed for the intended application, installation and/or function. Failure to complete this form may prevent the product(s) from being used on this project.

PRODUCT WARRANTY AND CERTIFICATION FORM

REFERENCE (PROJECT NAME AND CONTRACT NUMBER):

THE UNDERSIGNED HEREBY ATTESTS THAT HE HAS EXAMINED ALL THE REFERENCED PROJECT INFORMATION, PROJECT INSTALLATION REQUIREMENTS AND THE CONTRACT SPECIFICATIONS AND HEREBY WARRANTS AND CERTIFIES THAT THE REHABILITATION PRODUCTS THAT THEY PROPOSE TO FURNISH, DELIVER AND INSTALL FOR THIS PROJECT MEETS OR EXCEEDS THE REQUIREMENTS OF THESE CONTRACT SPECIFICATIONS, IS SUITABLE FOR THE INTENDED PURPOSE AND INSTALLATION, AND WILL SATISFACTORILY PERFORM TO THE CRITERIA SPECIFIED. THIS WARRANTY SHALL BE IN ADDITION TO, AND NOT IN LIEU OF, ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED.

PRODUCT:_____

MANUFACTURER:_____

Address:

By:_

(Typed Name and Title)

(SEAL)

(SEAL)

(Signature)

_____/s/ _____(Date)

The Product Warranty and Certification must be signed by a Principal Person (President, Vice-President, etc.) of the Product's Manufacturer. In the event the manufacturer is not the Supplier then a Principal Person of the Supplier must <u>also</u> sign this form.

MANUFACTURER'S REPRESENTATIVE/VENDOR:

Address:

By:_

(Typed Name and Title)

(Signature) /s/ _____(Date)

The Product Warranty and Certification must be signed by a Principal Person (President, Vice-President, etc.) of the Installation Contractor. In the event the manufacturer is not the Installation Contractor then a Principal Person of the Installation Contractor must also sign this form.

2733.02 MATERIALS

- **2733.02.01 The Liner.** The liner shall generally consist of a corrosion resistant seamless fiberglass fabric tube impregnated with thermosetting (cross-linked) resin and filler material, if applicable. The fabric tubing material shall consist of at least two separate tubes made of corrosion resistant (E-CR or equivalent) glass fibers and external foils in accordance with ASTM D578. The liner system shall meet the requirements of ASTM F2019 and ASTM D5813 and shall be constructed to withstand a pulling force at least equal to the weight of the liner, tolerate circumferential changes in the pipe, withstand curing temperatures, and have sufficient strength to bridge missing pipe. The liner shall fit tightly to the internal circumference of the existing pipe and, once cured, the liner shall have a chemically inert internal flow surface. The liner shall be fabricated with an under measurement of at least 1% of the host pipe's diameter. The liner shall also have the ability to over-expand by at least 1% of the host pipe's diameter to insure that when the liner is installed, it will neatly fit the internal circumference of the pipe to be lined. All GRP CIPP linings shall be from a single manufacturer. The cured liner shall have a 50-year life span.
- **2733.02.02 External Foils.** The tube-shaped plastic foils shall make up the outer one or more layers of the liner. The foils shall be moisture resistant, light proof (in the case of UV cure), and impermeable to styrene (when a styrene based resin is used).
- **2733.02.03 Calibration Hose.** The calibration hose is the tube shaped impermeable bladder that serves as the innermost layer of the GRP CIPP liner. During the cure of the liner, the calibration hose shall be inflated, pushing the liner firmly against the existing pipe. The calibration hose shall be a tube of either plastic foil or resin-saturated coated felt that is resistant and impermeable to moisture, styrene (when styrene based resin is used), and temperatures up to 260°F while also exposed to the installation pressure used to expand the liner. Once curing is complete, the calibration hose shall be easily removed.
- **2733.02.04** Wall Thickness. The required structural GRP CIPP wall thickness shall be designed in accordance with the guidelines in Appendix X1 of ASTM F1216. The thickness of GRP liner shall be defined as the thicknesses of all of the fiberglass layers plus the external foils. The minimum liner thickness for nominal pipe diameters of 8 to 12 inches shall be 4.0 mm. Minimum liner thickness for nominal pipe diameters of 14 to 16 inches shall be 6.0 mm. Minimum liner thickness for nominal pipe diameters of 18 inches shall be 7.0 mm. In cases where ovality exceeds 10%, or where pipes are egg or oval shaped, alternative methods of design may be considered by the Engineer. The categories of design parameters noted in Tables 2733-1, 2733-2, and 2733-3 in Section 2733, Pipe Rehabilitation by Pulled-In-Place Glass Reinforced Plastic (GRP) CIPP Method (Per ASTM F2019) shall be used, unless otherwise directed by the County. The selected thicknesses shall be uniform for each pipe diameter and shall be based on the thickest, most conservative design wall thickness calculated for each diameter.
- **2733.02.05 Common Design Parameters:** Design inputs generally considered to be the same from site to site for a particular project are provided in Table 2733-1.

Table 2733-1 Common Design Parameters	
Safety Factor ⁽¹⁾ 2.0	

Soil Modulus ⁽²⁾	700 psi
Soil Density ⁽³⁾	120 pcf

Notes Table 2733-1:

- 1. The safety factor may be reduced to 1.5 at the discretion of the Engineer, normally in the case where there is accurate and detailed information known about the existing pipe and soil conditions.
- 2. In the absence of site-specific information, the County assumes a soil modulus of 700 psi.
- 3. In the absence of site-specific information, the County assumes a soil density of 120 pcf.
- **2733.02.06** Site Specific Parameters: The information listed in Table 2733-2 is specific to each manhole to manhole run of pipe. The Contractor shall use for design the information provided by the County and information the Contractor collects during site visits for each manhole to manhole run.

Table 2733-2 Site-Specific Design Parameters	
Ovality	Notes 1, 2
Ground Water Depth Above Invert	Notes 1, 3
Soil Depth Above Crown	Note 1
Live Load	Notes 1, 4
Design Condition (Fully Deteriorated)	Notes 1, 5
GRP CIPP Thickness	Notes 1, 6, 7

Notes Table 2733-2:

- 1. Design thicknesses and complete site-specific designs, as stated herein, in accordance with ASTM F1216 (Appendix X1), shall be submitted after the Notice of Award.
- 2. The Contractor shall estimate the ovality by viewing the DVDs/videotapes, data and notes provided in the Contract Documents, and any other information provided by the County. If DVDs/tapes are not available, and the Contract Plans do not state otherwise, the Contractor shall assume an ovality of 3%. In cases where the ovality exceeds 10%, the Contractor may consider employing alternative design methods (such as beam design methods) to determine the pipe thickness, at no additional cost to the County.

- 3. In the absence of accurate water table information or high water elevation observed during the site visit (stream, ponds, etc.), the Contractor shall assume a seasonal groundwater elevation variation of 0 feet below the ground surface.
- 4. GRP CIPP is subjected to traffic live loads as calculated by AASHTO Standard Specifications for Highway Bridges, HS20-44 Highway Loading.
- 5. The Contractor shall assume the pipe segments are fully deteriorated.
- 6. Thicknesses specified (designed by the Contractor and approved by the County) are the final, in-ground thicknesses required. Measured sample thicknesses will not include polyurethane or polyethylene coatings, any layer of the tube not fully and verifiably impregnated with resin, or any portion of the tube not deemed by the County to be a structural component of the composite.
- 7. The Contractor must consider any factors necessary to ensure the final, cured-inplace pipe thickness is not less than specified (designed by the Contractor and approved by the County) above. These factors include any stress applied to the material during transportation, handling, installation and cure; the host pipe's material type, condition, and configuration; weather (including ambient temperature conditions); and any other factors which are reasonably expected to be found in existing sanitary sewer systems.
- **2733.02.07 Initial Structural Properties.** Once cured, the GRP CIPP liner shall have the initial structural properties shown in Table 2733-3.

TABLE 2733-3 GRP CIPP INITIAL STRUCTURAL PROPERTIES ⁽¹⁾			
PROPERTY	TEST METHOD	MINIMUM VALUE, PSI	(MPA)
Flexural Strength	D790	6500 ⁽²⁾	45
Flexural Modulus	D790	725000	5000
Tensile Strength	D3039/D3039M	9000	62
	D638	9000	62

Notes Table 2733-3:

- 1. The values in Table 2733-3 are for test results on field specimens. The Contractor shall obtain information on the material's long-term structural properties from the manufacturer.
- 2. The value indicates minimum strength both in the circumferential and longitudinal direction.

2733.02.08 Resin Content.

(a) The resin system shall be compatible to the installation process. The system shall consist of one of the following:

- (1) A chemically resistant polyester or vinyl ester thermoset (heat or UV light cured) resin and catalyst system.
- (2) An epoxy resin and hardener.
- (b) The initiating temperature for heat cured resin systems shall be less than 180°F.
- (c) When using a UV light cured resin system, a photo-initiator system must be added to the resin before the liner is impregnated.
- (d) Dye shall be added to resins to improve visual inspection of the cured liner. The types and quantities of dyes added shall have prior approval from resin manufacturer.
- **2733.02.09** Chemical Resistance: The chemical resistance of the cured inner surface of the resin/fabric matrix shall be tested in accordance with ASTM D543. The result of exposure to the chemical solutions listed in Table 2733-4 shall produce loss of not more than 20 percent of the initial physical properties when tested in accordance with ASTM D543 for a period of not less than 1 year at a temperature of 73.4 °F plus or minus 3.6 °F. For applications other than municipal wastewater, conduct chemical resistance tests with actual samples of the fluid to be transported in the pipe and in accordance with procedures approved by the County. The cured liner shall also be chemically and physically resistant to external exposure of soil bacteria, moisture, roots, and chemical attack that may be due to material in the surrounding ground.

TABLE 2733-4 CONCENTRATIONS OF CHEMICAL SOLUTIONS FOR CHEMICAL RESISTANCE TEST		
CHEMICAL SOLUTION	CONCENTRATION, %	
Tap Water (pH 6-9)	100	
Nitric Acid	5	
Phosphoric Acid	10	
Sulfuric Acid	10	
Petroleum Hydrocarbon Based Fuels (e.g. Gasoline, diesel, etc.)	100	
Vegetable Oil ¹	100	
Detergent ²	0.1	
Soap ²	0.1	
Domestic Sewage*	100	

^{1.} Cotton seed, corn, or mineral oil

^{2.} As per ASTM D543

* Contractor to include a written statement that their material and resin combination has been successfully installed in the United States and is chemically resistant to domestic sanitary sewage.

2733.02.10 Manufacture Information.

- **(a)** The Contractor shall deliver the uncured resin impregnated liner system to the site. Unless otherwise approved by the County, the liner shall not be impregnated at the site. The application of the resin to the fabric tube (wet-out) shall be conducted under factory conditions and the materials shall be fully protected against UV light, excessive heat, and contamination at all times. The equipment used to impregnate the liner with resin shall contain devices that properly distribute the resin. The liner system shall be impregnated with resin not more than 72 hours before the proposed time of installation and stored out of direct sunlight. Continuously monitor liner materials during transport and storage with a temperature recorder and data storage. If requested, the Contractor shall furnish the County with the recorder readings before installation. Material that is exposed to temperatures outside of the manufacturer's limits will be rejected. The Contractor shall provide all appropriate transport, handling and protection equipment including refrigerated, or otherwise suitably cooled, transport equipment in accordance with the manufacturer's requirements.
 - (1) Heat Cure: The uncured resin impregnated liner system shall be stored at a temperature within the manufacturer's acceptable range. During the transportation of the resin impregnated liner, a data logger shall continuously record the time and temperatures experienced by the liner.
 - (2) UV Light Cure: The impregnated liner shall be stored, transported, and installed according to the manufacturer's recommendations. During this time, the impregnated liner shall only be subjected to temperatures between 45°F and 95°F.
- (b) All fabricating and Contractor testing shall be carried out under cover and no materials shall be exposed to the weather until they are ready to be inserted. All materials should be protected from the weather and exposure to ultra-violet light as practicable during the manufacture and installation process.
- (c) Each liner shall be accompanied by suitable documentation indicating date, manufacturer, trade name, time and date of manufacture, liner thickness, number of layers, diameter, length of liner, resin type, resin volume, mixing ratio, temperature, type of glass fiber, liner type, catalyst, relevant batch numbers, storage limitations – with the last allowable installation date accompanying the impregnated tube - and requirements, etc. and this information shall be submitted to the County.

2733.03 CONSTRUCTION REQUIREMENTS

2733.03.01 Lining Procedures.

(a) The Contractor will not be compensated for liners ordered without confirmation of length and field conditions.

- (b) The liner shall be installed in accordance with ASTM F2019.
- (c) The Contractor shall conduct operations in accordance with applicable OSHA standards, including those safety requirements involving work on an elevated platform and entry into a confined space. Take suitable precautions to eliminate hazards to personnel near construction activities when pressurized air is being used.
- (d) All service locations shall be measured for location prior to liner installation. All service connection measurements and the clockwise position of the openings shall be recorded in a log to aid in the reinstatement of service connections after lining. The approximate locations of identified active service taps are shown on the Contract Drawings; however, the Contractor shall determine the exact location and number of service connections by the dye test method or other methods approved by the County. The Contractor shall accurately field locate existing service connections, whether in service or not. For rehabilitated lines, the Contractor shall use existing service locations to reconnect service lines to new liner, unless otherwise specified on the Contract Drawings or directed by the County. During the line preparation and work operation, inactive sewer house connections shall not be cut but shall be left lined over, unless directed by the County.
- (e) Thermocure
 - (1) Temperature monitoring systems are required for all 18" or larger sewer, any sized sewer in locations with significant known groundwater infiltration, or if the pipe is within 50 feet of stream, river or lake. This system shall be installed at the invert of the pipe and be installed per the manufacturers recommended procedures. The temperature sensors shall be placed at intervals as recommended by the sensor manufacturer. Additional sensors shall be placed where significant heat sinks are likely or anticipated. The sensors, if installed, shall be monitored by a computer using a tamper proof data base that is capable of recording temperatures at the interface of the liner and the host pipe. Temperature monitoring systems shall be Zia Systems, Vericure by Pipeline Renewal Technologies, or approved equal.
- (f) In the event of insertion being delayed after impregnation by unexpected site conditions but prior to the start of the insertion process, the Contractor shall store, at his own cost, the liner, for a further period of at most 72 hours, for use when conditions allow.
- (g) Installation through Manholes. The invert shall be continous and smooth through all manholes. If a liner is installed through a manhole, the bottom portion of the liner shall remain and the bench of the manhole shall be grouted and shaped as necessary to support the liner. If the liner terminates on either side of a manhole, the invert shall be built up to remove any flow restrictions and to form a continuous invert through the manhole. The cost of this work shall be included in the unit price bid for the liner.
- (h) The finished pipelining shall be continuous over the entire length of an insertion run between two manholes or structures and be as free as commercially practicable

from visual defects such dry spots, lifts, and delamination. The lining shall be impervious and free of leakage from the pipe to the surrounding ground or from the ground to the inside of the lined pipe. Defects that will impede flow or maintenance equipment will not be permissible. Pinholes and leaking patches will not be allowed. If found they must be repaired, per the manufacturer's recommendations, at the Contractor's expense.

(i) The inner surface shall be free of cracks and crazing with smooth finish and with an average of not over two pits per 12 inch square, providing the pits are less than 0.12 inch in diameter and not over 0.04 inch deep and are covered with sufficient resin to avoid exposure of the inner fabric. Some minor waviness, that in the County's opinion will not appreciably decrease the flow characteristics or be the cause of a possible blockage, shall be permissible.

2733.03.02 Installation.

- (a) A power winch shall be used to pull the wet-out liner through an exiting manhole into place within the pipe. The Contractor shall use one of the following installation methods:
 - (1) Sliding Foil and Winch Cable: Once the pipe is properly cleaned according to Section 2741, Sewer Line, Lateral, and Manhole Cleaning, a sliding foil and winch cable shall be pulled through the line. The sliding foil shall cover up to half of the circumference of the pipe and it shall be held in place by the plug used to block the flow in the manhole.
 - (2) Pulling Head or Pulling Manifold and Invert Roller: The liner shall be connected to the winch cable by either a pulling head or pulling manifold. The addition of a swivel connection to the pulling cable can be used to prevent the liner from twisting. An invert guide roller in the winch manhole shall be used to bring the pulling head or manifold into the manhole during the pulling operation.
 - i. A pulling head can be created by making the end of the liner into a loop. Once the pulling operation is complete, the pulling head shall be dismantled.
 - ii. If a pulling manifold is used, care shall be taken when it is attached to the end of the liner and the Contractor shall assure that the strength of the connection can adequately transfer the pulling force. The manifold shall be mounted airtight into the calibration hose.
- (b) The liner shall be pulled at the speed recommended by the manufacturer.
- (c) The liner shall be pulled carefully into place. Care shall be taken when pulling the liner through any obstacles or friction within the pipe. The liner shall not be damaged as a result of the pulling operation.
- (d) Elongation of the tube liner shall be less than 2% of the overall length after the pulling operation is complete.

- (e) The liner shall extend 1 to 2 ft into the access point and an inlet manifold shall be mounted to it.
- (f) Temperature sensors shall be located on the outside of the liner about 1 ft from the access and termination points.
- (g) For a steam cure, there shall be manifolds connected at both the inlet and outlet air/steam hoses. Temperature and pressure sensors shall be located on the inlet manifold.
- 2733.03.03 Curing Methods. The liner shall be cured using one of the following methods:
 - (a) Steam Cure
 - (1) The installation equipment shall include an inlet air/steam hose, air compressor, acceptable steam source, and monitoring and control equipment in accordance with the manufacturer's recommendations. There shall also be an outlet air/steam hose mounted to a gauge station that has a pressure adjustment valve, temperature gauge, and pressure gauge.
 - (2) The liner shall be inflated with adequate pressure to hold the liner tightly against the pipe wall. Once the correct pressure is reached, the outlet valve shall be used to maintain this pressure.
 - (3) Once the liner is inflated, the temperature shall be adjusted according to the manufacturer's recommendations. The temperature shall be monitored by the sensors that are attached to the liner until the recommended temperature is reached. Time, temperatures, and pressures shall be recorded continuously throughout the curing process and submitted to the County at the end of the installation. This log will insure that the proper curing of the liner was carried out.
 - (4) If recommended by the manufacturer, a post curing steam shall be conducted in order to fully develop the chemical resistance and resin strength of the liner.
 - (5) The Contractor shall gradually cool the liner down by replacing the steam in the line with air and water, if necessary. The temperature, measured by the sensors attached to the liner, shall be lowered to 90°F or as recommended by the manufacturer.
 - (6) Once the cure is complete, the manifolds and then the calibration hose shall be detached and removed from the line.
 - (b) Ultraviolet Light Cure
 - (1) The installation equipment shall include an inlet air hose, air compressor, and a multi-lamp ultraviolet curing assembly in accordance with the manufacturer's recommendations.

- (2) A camera must be located on the UV light assembly to enable the video inspection of the liner and to insure that the liner has been properly inflated and any liner problems can be identified before curing begins.
- (3) The liner shall be expanded under pressure until tightly pressed against the wall of the pipe.
- (4) The multi-lamp ultraviolet curing assembly shall be tuned or optimized to the resin's photo initiator system or the photo initiator system with the curing system.
- (5) Once the ultraviolet curing assembly and the resin's photo initiator system are in tune, the ultraviolet curing lights shall be drawn through the pipe. Sufficient pressure shall be applied to continuously keep the liner tight against the pipe wall during the curing process. The speed at which the ultraviolet curing assembly travels through the pipe shall be the calculated speed required for cross-linking/polymerization of the resin.
- (6) Time, rate of travel of the ultraviolet assembly, pressures, and amount of lamps in operation shall be recorded continuously from the beginning of inflation until the curing is complete and submitted to the County at the end of the installation. The log shall include project name, address, section, and date. This log will insure that the proper curing of the liner was carried out.

2733.03.04 Testing.

- (a) The Contractor shall collect representative coupon samples/specimens as described below. At a minimum, a coupon shall be collected for each pipe diameter that is lined and each liner thickness, unless otherwise specified in writing by the County. For every 1,000 linear feet of GRP CIPP liner installed for the first 10,000 linear feet, the Contractor shall perform sampling and testing at his expense and shall supply results to the County. The frequency of testing may be reduced as approved by the County after sufficient tests are performed to verify the GRP CIPP liner design, production, and installation procedures. Likewise, the frequency of testing may be increased by the County and performed by the Contractor at no additional cost to the County when the required tests show that the installed GRP CIPP liner does not meet the specifications. After the 10,000 feet of acceptable test results are received, the test sample frequency can be reduced to one sample every 2,000 feet as long as samples continue to meet all minimum standards and sampling results are received in a timely manner. If a test is not passed, the lining will not be accepted. The Contractor shall stamp or mark the test pieces with the date of manufacture and batch number. These samples shall be paid for under the Pay Item for sanitary sewer rehabilitation, for the respective diameter sizes.
- (b) Testing shall be performed by an ASTM-certified independent testing laboratory. The Contractor shall submit to the County the name and location of the independent testing laboratory, a certified statement from the laboratory indicating that they are independent from and not associated with the Contractor in any way, and the ASTM certification for the independent testing laboratory.

- (c) All expenses for sampling and testing of the installed liner shall be paid for by the Contractor. The cost of all manufacturer's testing to qualify products furnished to the project site shall be the responsibility of the Contractor.
- (d) Sampling shall conform to ASTM F2019 and the following requirements: The samples shall be cut from a section of cured CIPP at an intermediate manhole or at the termination point that shall be installed through a like diameter section of conduit or other tubular restraining means. The specimens shall allow circumferential (hoop) directions of the fiberglass reinforcement in the CIPP. Each specimen shall be at least 2" wide (axial direction of the liner, along the length) to test a representative amount of fibers if glass roving mats have been used. The samples are to be tested in a curved beam configuration where the minimum beam width is 2.0 inches.
- (e) The Contractor shall verify that the installed thickness of the GRP CIPP is within minus 5 percent and plus 10 percent of the specified thickness. An ASTM-certified independent testing laboratory shall test the samples to determine the installed liner thickness, and shall be measured in accordance with ASTM D5813. Flexural properties shall be determined in accordance with ASTM D790. The Contractor shall label and date all samples and provide to the inspector or Owner's representative the same day of the installation for shipping to the independent testing laboratory.
- (f) Should the County desire to make additional independent tests, the Contractor shall, upon request of the County, furnish any reasonable number of test pieces of raw material samples as the County may require, stamped or marked with the date of manufacture and batch number if applicable.
- (g) The test specimen shall be prepared and physical properties tested in accordance with ASTM F2019. The properties shall meet or exceed the values identified in ASTM F2019.
- (h) It is preferred that all samples be shipped to the independent laboratory the same day as installation. At the Contractor's discretion, samples may be sent in batches but in no case later than 30 days after installation. The results of the measurements for each sample shall be submitted to the County within 30 days of the sample's ship date to the laboratory. The costs for testing shall be included in the bid price for rehabilitation including the cost of all manufacturer's testing to qualify products furnished to the project site.
- (i) Any GRP CIPP lining that does not meet the specified installed strength and/or thickness requirements, regardless of the amount below the specified requirements, shall be corrected by the Contractor in a manner approved by the County at no additional cost to the County. The County's decision on how to correct the deficient GRP CIPP liner installations shall be final. Options for correcting deficient GRP CIPP liner installations that will be considered by the County include the following: removal of the existing GRP CIPP liner and relining the sewer, open-cut replacement of the sewer from manhole to manhole, or re-lining the sewer with the existing GRP CIPP liner in place.

2733.04 MEASUREMENT AND PAYMENT

- **2733.04.01 Glass Reinforced Plastic Cured-in-Place Pipe Lining.** Measurement for payment will be the actual linear footage installed, measured along the centerline of the pipe. Length will be measured from edge of manhole to edge of manhole, unless the liner extends through a manhole, in which case the distance to and from that manhole will be measured to the center of that manhole. Payment is based on the GRP CIPP thickness required for the deepest flow line of the rehabilitated segment.
 - (a) **Basis of Payment.** Payment shall be made at the contract unit price bid per linear foot of pipe rehabilitated. The unit price includes all labor, incidentals, materials, resident notification, flow control, preconstruction video taping, confined space entry and equipment, sediment and root removal, debris collection and disposal, removal of protruding service connections (protruding less than 1/2 inch into the main pipeline), re-establishing lateral service connections, dewatering, traffic control, erosion and sediment control, excavation pits, pre- and post-cleaning, pre and post-installation CCTV inspection including submission of videos and television logs, warranty inspections, sealing the liner in the manholes and at service connections, required compliance tests, initial and general backfill and compaction, borrow for backfilling, offsite disposal of unsuitable material, pavement removal and disposal, site cleanup, and all other rehabilitation work, not included under other items, necessary to complete the rehabilitation as specified. Payment for this item does not indicate final acceptance of this item; final acceptance is contingent on the receipt, review, and approval of the Final Acceptance TV Inspection described in Section 2742.
- 2733.04.02 Mandatory Utilization of Epoxy Vinyl Ester Resin where ordered for use in certain, specific industrial waste areas or areas with high temperature waste will be the actual per inch of nominal pipe inside diameter and per linear foot of GRP cured-in-place pipe lining installed using the epoxy vinyl ester resin.
 - (a) This item shall only be paid, where specifically ordered in the work order, in addition to the applicable unit prices paid under the sewer rehabilitation items, whether or not the Contractor is otherwise utilizing the epoxy vinyl ester resin. Each unit price bid will be full compensation for all additional costs of utilizing the epoxy vinyl ester resin. The County will not pay for this item when the Contractor elects the use of epoxy vinyl ester resin, without specific direction to do so.

END OF SECTION

SECTION 2737

MANHOLE REHABILITATION

2737.01 DESCRIPTION

- **2737.01.01 Reference.** All applicable requirements of other portions of the Contract Documents apply to the Work of this Section.
- **2737.01.02 Description of Work.** These specifications include requirements to provide a system for manhole rehabilitation that includes lining the manhole interiors, internal sealing of the frame-chimney joint area, reconstructing manhole benches and channels, manhole adjustment and exterior protection and refinishing. It is the Contractor's responsibility to stop all active leaks in association with the lining of the manhole interiors.
- **2737.01.03** This work shall include the furnishing of all materials, equipment, tools, and labor as required for the (interior and exterior) rehabilitation of the manholes.
- **2737.01.04** Rehabilitation products shall be applied to the manhole from the cover seat to and including the benches, and channel. Each system must provide a non-prorated warranty as herein described in manholes to stop infiltration, prohibit root intrusion, protect the existing structure from further deterioration, and provide a surface liner resistant to collection system gases and chemicals.
- **2737.01.05** Prior to the work, all rehabilitation products shall be kept dry, protected from weather, and stored under cover. The materials shall be stored in acceptable temperatures according to the manufacturer's recommendations. All products shall be handled according to their Material Safety Data Sheets.
- **2737.01.06** For any ASTM standard referenced, the Contractor shall use the most current active version.
- **2737.01.07** Safety. The Contractor shall follow the safety guidelines as described in Section 2731, Pipe Rehabilitation General Requirements.
- 2737.01.08 Contractor Experience.
 - (a) The Contractor for the rehabilitation of the manhole structures must have a minimum of two years experience using the liner product proposed and have installed at least 1,000 vertical linear feet of the proposed product for collection system manholes.
 - (b) The Contractor shall be licensed by the liner process manufacturer.
- **2737.01.09 Product Experience.** The product proposed for the rehabilitation of the manholes must have been in use for at least three years and a minimum of 1,500 vertical linear feet of the product must have been installed in collection system manholes.

- **2737.01.10 Submittals After Notice of Award.** After the Notice of Award, the Contractor shall submit the information listed below for review and approval. The notice to proceed will not be issued until all of the listed information has been reviewed and approved by the County and/or the Engineer.
 - (a) Shop drawings and product data for the manhole rehabilitation method including a report outlining the process to be used in the rehabilitation of the manholes. The report shall also include information specific to the job, such as schedule, coordination issues, access, timing, manufacturer's installation instructions, curing operations and procedures, traffic control, and flow control.
 - (b) Samples of all materials proposed shall be provided for approval from the County prior to initiation of the Work. The samples shall be accompanied by the manufacturer's sworn certification that components and products will be manufactured in accordance with specified reference standards for components and products.
 - (c) All measurements made by the Contractor to verify manhole depths, elevations and diameters, prior to ordering of material.
 - (d) Manufacturer's published literature and published data for the proposed manhole rehabilitation system, including all Material Safety Data Sheets.
 - (e) The manhole rehabilitation system supplier's letter of certification for the workers who will perform rehabilitation work. If, during the installation process, any of the crew members performing the installation are not identified on this letter, then a new certification letter listing the crew member(s) must be received from the rehabilitation system supplier prior to initiation of the specific project.
 - (f) Independent test report showing that the physical properties of the proposed system meet the requirements of these specifications and the requirements published in the manufacturer's literature.
 - (g) The manufacturer's certification that the proposed system for the project meets the requirements of these specifications and will meet or exceed the physical properties given in the manufacturer's published literature submitted as required by Part (i) of this subsection.
 - (h) Documentation of Contractor's experience. This shall include references for all jobs within the last two years that were either completed or under construction using the proposed rehabilitation method, and shall show that at least 1,000 vertical linear feet of this proposed product has been installed by this Contractor. References for a minimum of 5 jobs shall be provided. Information provided shall include a description of the job (including the liner method used and vertical feet of liner installed), the location of the job, the value of the job, the Owner, and the contact for the job including name, title, address, and phone number.

- (i) Documentation of Product experience. This shall include references for jobs completed with the proposed rehabilitation method. The jobs submitted shall show that at least 1,500 vertical linear feet of the product has been installed by the Contractor or other Contractors. The documentation shall include at least ten jobs, which have been completed, within the last three years. Information provided for each job shall include a description of the job (including the liner method used and vertical feet of liner installed), the location of the job, the value of the job, the Owner, and the contact for the job including name, title, address, and phone number.
- (j) If requested, proof of any federal, state, or local permits or licenses necessary for the project.
- (k) Calculations (or letter from the manufacturer) supporting recommended liner thicknesses or wall coverage thicknesses.
- (I) Manhole Patching Mix
- (m) Manhole Infiltration Control Mix
- (n) Manhole Sealer
- (o) Manhole Cementitious or Epoxy Liner
- (**p**) Internal and External Manhole Frame Seals and proof of contractor's experience using type of seals proposed.
- (q) Manhole Frame and Cover from County's approved supplier list
- (r) Manhole Inserts
- (s) Product Warranty and Certification Form: To insure that all products and materials proposed for use on this project are of the highest quality and specifically designed and manufactured for the intended installation or use, a Product Warranty and Certification Form shall be completed by the rehabilitative product manufacturer(s), manufacturer's representative or vendor as well as the manhole liner installer certifying that the product(s) they are proposing to use is specifically designed for the intended application, installation and/or function. Failure to complete this form may prevent the product(s) from being used on this project.

PRODUCT WARRANTY AND CERTIFICATION FORM

REFERENCE: (PROJECT NAME AND CONTRACT NUMBER):____

THE UNDERSIGNED HEREBY ATTESTS THAT HE HAS EXAMINED ALL THE REFERENCED PROJECT INFORMATION, PROJECT INSTALLATION REQUIREMENTS AND THE CONTRACT SPECIFICATIONS AND HEREBY WARRANTS AND CERTIFIES THAT THE REHABILITATION PRODUCTS THAT THEY PROPOSE TO FURNISH, DELIVER AND INSTALL FOR THIS PROJECT MEETS OR EXCEEDS THE REQUIREMENTS OF THESE CONTRACT SPECIFICATIONS, IS SUITABLE FOR THE INTENDED PURPOSE AND INSTALLATION, AND WILL SATISFACTORILY PERFORM TO THE CRITERIA SPECIFIED. THIS WARRANTY SHALL BE IN ADDITION TO, AND NOT IN LIEU OF, ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED.

PRODUCT:

MANUFACTURER:

Address:

By:

(Typed Name and Title)

(SEAL)

(Signature)

The Product Warranty and Certification must be signed by a Principal Person (President, Vice-President, etc.) of the Product's Manufacturer. In the event the manufacturer is not the Supplier then a Principal Person of the Supplier must also sign this form.

MANUFACTURER'S REPRESENTATIVE/VENDOR:_____

Address:

By:

(Typed Name and Title)

(Signature)

_____/s/ _____(Data) The Product Warranty and Certification must be signed by a Principal Person (President, Vice-President, etc.) of the Installation Contractor. In the event the manufacturer is not the Installation Contractor then a

INSTALLATION CONTRACTOR:_____

Principal Person of the Installation Contractor must also sign this form.

Address:

By:___

(Typed Name and Title)

(SEAL)

(SEAL)

(Signature)

_____/s/ _____ (Date)

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2737.02 MATERIALS

- **2737.02.01** Patching and Infiltration Control Materials. The Contractor may use the following products in conjunction with the liner material to facilitate manhole rehabilitation. Material compatibility of the products must be confirmed prior to commencement of work. If alternate patching and/or infiltration control mixes need to be used in order to be compatible with the lining material, the product specifications shall be reviewed and approved by the County before the product is ordered.
 - (a) Patching Mix: A quick-setting cementitious material shall be used as a patching mix and is to be mixed and applied according to manufacturer's recommendations and shall have the following minimum requirements:

Compressive Strength	ASTM C109	6 hr 1,400 psi
Shrinkage	ASTM C596	0% at 90%
		relative humidity
Bond	ASTM C321	28 day 150 psi
Cement		Sulfate resistant
Density, when applied		105 ±5 pcf

(b) Infiltration Control Mix: A rapid-setting cementitious product specifically formulated for leak control shall be used to stop minor water infiltration and shall be mixed and applied according to manufacturer's recommendations and shall have the following minimum requirements:

Compressive Strength	ASTM C109	1 hr	600 psi
Compressive Strength	ASTM C579 Method B	24 hr	1,000 psi
Bond	ASTM C321	1 hr	30 psi
Bond	ASTM C321	24 hr	80 psi

- (c) Grouting Mix. A cementitious grout shall be used for stopping very active infiltration and filling voids and shall be mixed and applied according to the manufacturer's recommendations. The cementitious grout shall be volume stable and have a minimum 28 day compressive strength of 250 psi and 1 day strength of 50 psi. Chemical grouts may be used for stopping very active infiltration and shall be mixed and applied per the manufacturer's recommendations.
- (d) Manhole Sealer. The manhole sealer material shall be an Acrylamide or Urethane Base Gel as specified in Specification Section 2738, Sanitary Sewer Pipe Joint and Service Connection Testing and Grouting.
- (e) Other Materials: No other material shall be used with the above mixes without prior approval or recommendation from the manufacturer and the County.
- (f) Water: Water shall be clean and potable.

2737.02.02 Cementitious Liner Mix.

- (a) The cementitious liner mix shall be a cement-based, fiber-reinforced calcium aluminate mortar specifically designed to prevent infiltration and restore structural integrity, and to be spray applied to form the structural/structurally enhanced monolithic cementitious liner covering all interior manhole surfaces. The material shall be applied at a minimum ¹/₂ inch thickness; but application must be at a thickness to ensure a structurally stable manhole, while forming an infiltration barrier to water and gases.
- (b) The material shall be premixed and specially formulated to withstand hydrogen sulfide bacterial corrosion and abrasion in municipal sanitary sewer systems.
- (c) The standard material shall have the following minimum requirements at 28 days.

Compressive Strength	ASTM C109	8,000 psi
Flexural Strength	ASTM C293	700 psi
Shrinkage @ 90% Humidity	ASTM C596	0%
Tensile Strength	ASTM C496	> 600 psi
Sulfide Resistance	ASTM C267	No visible attack @ pH
		2 or greater.

(d) The high performance material shall have the following minimum requirements at 28 days.

Compressive Strength	ASTM C109	9,000 psi
Flexural Strength	ASTM C293	1,200 psi
Shrinkage @ 90% Humidity	ASTM C596	0%
Tensile Strength	ASTM C496	> 800 psi
Sulfide Resistance	ASTM C267	No visible attack @ pH
		2 or less

- (e) Provide Strong-Seal System, Permacast Process, or approved equal.
- (f) The liner mix shall have a five-year labor and materials, non-prorated warranty to stop infiltration and further deterioration of the structure.
- (g) The manufacturer shall warrant that the products are produced in conformity with its standard specifications or formulations within recognized tolerances, free of adulteration or contamination, and that the product will perform in accordance with representations in the manufacturer's literature and technical data sheets when properly applied in strict conformance with the printed instructions on the container and prescribed in technical data instructions and when applied to a properly prepared surface.
- (h) Use additives to increase corrosion resistance or bond strength at manufacturer's direction, with the County's approval.

2737.02.03 Epoxy Liner.

- (a) The monolithic high-build epoxy liner shall consist of a 100% solids epoxy formulated with exceptionally high physical strengths and broad range chemical resistance. The liner system coverage shall be a minimum of 100 mils and shall be determined by the manufacturer. The manufacturer shall provide documentation for the recommended thickness.
- (b) The epoxy liner shall have the following minimum requirements:

Test	Property	Results
ASTM D790	Flexural Strength	12,443 psi
ASTM D695	Compressive Strength, Yield	12,870 psi
ASTM D638	Tensile Strength	6,640 psi
ASTM D638	% Elongation @ Max Load	1.53%
ASTM D2240	Hardness, Shore D	80
ASTM D256	Impact, IZOD	0.345 ft. lb/in of
		notch

(c) The epoxy liner shall have the following minimum requirements after seven day curing:

Test	Property	Results
ASTM D2240-75	Hardness	82 Shore D
ASTM D638	Ultimate Elongation	6%

- (d) Chemical Resistance: The corrosion resistance of the epoxy lining shall be tested by the lining manufacturer in accordance with ASTM D543. For the chemical resistance requirements, refer to Table 2732-4 in Section 2732, Pipe Rehabilitation by Cured-in-Place Method (CIPP) (Per ASTM F1216).
- (e) The epoxy liner shall have a five-year labor and materials, non-prorated warranty to stop infiltration and further deterioration of the structure.
- (f) The manufacturer shall warrant that the products are produced in conformity with its standard specifications or formulations within recognized tolerances, free of adulteration or contamination, and that the product will perform in accordance with representations in the manufacturer's literature and technical data sheets when properly applied in strict conformance with the printed instructions on the container and prescribed in technical data instructions and when applied to a properly prepared surface.

2737.02.04 Internal and External Manhole Frame Seals.

(a) An internal or external frame seal may be required to be installed where indicated on the drawings. The internal frame seal shall either be an internal cured-in-place (CIP) frame seal or a fiberglass and epoxy hand

applied frame seal as specified in these Contract Specification or a combination of the two.

- (b) The internal frame seal shall either be an internal cured-in-place (CIP) frame seal or a fiberglass and epoxy hand applied frame seal as specified in these Contract Specifications or a combination of the two. Both of these methods are considered CIP methods, but will be referred to separately within these specifications. Internal manhole frame seals shall be installed at the locations indicated on the Contract Drawings or as directed by the Engineer. The internal frame seal shall be installed after all other repairs and/or rehabilitation have been completed on the manhole structure. Site conditions may preclude the Contractor from mobilizing the installation equipment near the manhole. Remote installations may be required.
- (c) Internal Manhole Cured-in-Place Frame Seals: Internal cured-in-place (CIP) manhole frame seals consist of a one-piece resin impregnated liner that is cured in place under pressure. The liner is pressed tightly against the existing manhole by a pressurized bladder until the thermo-set resins have cured in ambient conditions. The liner shall start at the manhole cover seat and overlap onto the existing cone/corbel section of the manhole a minimum of 2-feet or longer as needed to allow for a tight and watertight seal. The cured-in-place manhole chimney liner shall be tightly fitted to the contours of the existing structure, significantly increase structural integrity, eliminate inflow and infiltration, eliminate exfiltration, have a 50-year life span, stop corrosion, and provide a surface resistant to sewer gases.
 - (1) General: The rehabilitation is accomplished using a stretchable coated non-woven textile tube of particular length and a silicate based thermo-set resin with physical and chemical properties appropriate for the application. The liner is impregnated (saturated) on-site with the silicate based thermo-set resin. The saturated liner is then lowered into the manhole and is temporarily held in position. The installation device is then lowered and properly positioned inside the liner. The bladder on the installation device is then pressurized so that the liner is pressed tightly against the configuration of the existing structure. Once the resin-saturated liner is cured, the installation device is removed. The liner shall be able to cure in wet or dry conditions. The liner is then trimmed flush with the manhole cover seat. The liner shall be beveled or recessed to prevent delamination when the cover is removed and/or replaced.
 - (2) Material: The liner shall be continuous in length and consist of one or more layers of a stretchable absorbent textile material. The liner is designed to prevent leakage associated with inflow and infiltration, withstand hydrostatic pressures, bridge missing mortar or brick segments, accommodate variations in manhole configuration, withstand freeze/thaw cycles, and conform to the contours of the existing structure. The saturated liner shall have uniform thickness and have excess resin distribution that when

compressed at installation pressures will meet or exceed the design thickness after cure and provide a watertight seal.

- (i) The exposed layer of the stretchable liner shall be coated with an impermeable, translucent, flexible membrane. The liner shall be marked correlating to the address or manhole identification number, and date of installation.
- (ii) The liner shall be a one-piece assembly sewn in the shape of a tube or other configuration at a predetermined length to seal the casting and to overlap onto the cone/corbel. The sewn seams shall be sealed using a tape compatible with the liner. The liner wall thickness shall be uniform throughout. The liner will be capable of conforming to offset bricks and grade rings, missing mortar gaps, disfigured and deteriorated chimneys, offset frames or other segments of the manhole and provide a tight-fitting, watertight installation.
- (3) All active leaks must be stopped prior to installation of the CIP frame seal.
- (4) Minor rebuilding of the manholes transition, adjustment or cone section may be required to provide a smooth and uniform surface needed to accommodate the installation of the CIP frame seal to create a tight-fitting watertight connection.
- (5) Resin System: The resin system shall be corrosion resistant silicate resin and catalyst system that when properly cured within the stretchable liner, forms a tenacious bond with well prepared surfaces, withstands freeze/thaw cycles without cracking, and meets the physical properties stated herein.

PROPERTY	TEST	MINIMUM VALUE
Compressive	ASTM D 695	1500 psi
Bond	Peel Test	Concrete Failure
Hardness	ASTM D 2240	74
Freeze/Thaw Resistance	Simulated Freeze/ Thaw	No Cracking or Bond Failure

Table 2737-1 Cured-In-Place Manhole Structural Properties

Design Considerations:

1. The existing structure is carrying the soil and live loads.

2. The liner will only be subjected to hydrostatic pressure, therefore the pressure exerted on the liner will be uniform around the structure, placing the liner in compression. Therefore, the minimum liner thickness (Tmin) shall be based on the following formula:

 $Tmin = \frac{(0.036 \text{ lbs/in}^3 * \text{H*D*FS})}{2(\text{C})}$

H= Height of liner in inches D = Diameter of liner in inches FS = Factor of safety (2 is suggested) C = Compressive strength of liner in psi 0.036 lbs/in^3 unit weight of water

- (d) Internal Fiberglass and Epoxy Hand Applied Frame Seal.
 - (1) This seal is a fiberglass and epoxy hand applied chimney/frame seal that when properly installed forms a monolithic seal that is completely bonded to the host structure. The frame seal shall conform to the structure regardless of the shape or size. The liner shall start at the manhole/structure cover seat and overlap onto the existing cone/corbel section of the manhole/structure a minimum of two (2) feet or longer as needed to allow for a tight and watertight seal. The chimney liner shall be bonded to the contours of the existing structure, significantly increase structural integrity, eliminate inflow and infiltration, and provide a surface resistant to sewer gases.
 - (2) Material. The chemical-resistant fiberglass and epoxy composite liner shall be composed of fiberglass fabric that is encapsulated by a modified epoxy resin system. The fiberglass reinforces the epoxy and insures a minimum finished liner thickness of 125 mils (1/8"). When cured, a rigid barrier is formed that bridges any potential weak point of adhesion.
 - (3) The reinforcing fabric shall be an 11 oz. fiberglass bonded fabric of Type E glass having a tensile strength of 500,000 PSI, a modulus of elasticity of 10.5 million PSI, and a maximum elongation of 4.8%. The fabric shall be stitch bonded construction with a chemical binder to enhance wet out, handling and adhesion.
 - (4) The modified epoxy resin system shall be a bisphenol A epoxy resin cross linked with a modified polyamide curing agent. This resin systems shall be 100% solids, emitting no toxic odors. The resins shall exhibit high tensile and flexural strengths (see below for properties of the fiberglass/epoxy composite system). They shall adhere to moist surfaces and cure even when submerged in water. Adhesion shall exceed the tensile strength of the concrete substrate. The epoxy mastic shall be capable of bonding to multiple surfaces including concrete, brick, carbon steel, galvanized steel, aluminum, wood, and some plastics.

PROPERTY	TEST	MINIMUM VALUE
Hardness	ASTM D-2240	72 Shore D
Tensile Strength	ASTM D-638	29,200 PSI
Compressive Strength	ASTM D-695	16,800 PSI
Flexural Strength	ASTM D-790	34,300 PSI
Ultimate Elongation	ASTM D-638	4.50%
Bond	ASTM D-4541	Substrate Failure
	(Concrete)	
Flexural Modulus	ASTM D-790	1,590,000 PSI
Shear Strength	ASTM D-2344	4,060 PSI

- (5) The fiberglass and epoxy hand applied internal frame seal shall be the Perpetu*Wall*csTM as manufactured by Protective Lining Systems or approved equal.
- (e) External Manhole Frame Seal: External frame seals shall be used when specified in the Contract Drawings, which generally is when excavation of the manhole is completed that would allow the installation of the external seal per the requirements of this Section. External seals shall be WrapidsealTM or approved equal. The external seals shall be a heat shrinkable seal specifically designed to eliminate inflow and/or infiltration from exposed or buried sections of the manhole. The seal shall be UV resistant for external installations. The seal when applied to the structure shall provide a tight-fitting completely watertight seal between the manhole structure and the frame and cover allowing for movement and any expansion and contraction of the connection.

2737.02.05 Manhole Inserts.

- (a) Manhole inserts shall be manufactured from corrosion-proof material suitable for atmospheres containing hydrogen sulfide and diluted sulfuric acid and other gases associated with waste water collection systems.
- (b) The insert shall be manufactured to fit the manhole frame rim upon which it rests.
- (c) Ventilation shall be provided by a vent hole and/or a valve. The hole or valve shall allow a maximum release of 0.5 to 1.5 psi and 5 gallons of water per 24 hours and is not affected by debris that may collect in the bottom of the dish.
- (d) The manhole inserts shall be stainless steel inserts.
 - (1) The insert body shall be manufactured of 304 stainless steel with a thickness of not less than 18 gage.
 - (2) The dish shall have a handle of 3/16" plastic coated stainless steel cable installed on the body of the dish. The handle shall be attached with a #6 high grade stainless steel rivet.
 - (3) The stainless steel inserts shall be "Rainstopper" or equal.

2737.03 CONSTRUCTION REQUIREMENTS

- **2737.03.01 Cleaning.** Cleaning of the manhole structures shall be performed as specified in Section 2741 Sewer Line, Lateral, and Manhole Cleaning, and per recommendations of manufacturer of product to be installed.
- **TV Inspection.** Inspection of the sewer system shall be performed as specified in Section 2742 Television Inspection.
- **2737.03.03** Flow Control. When required for acceptable completion of manhole rehabilitation, the Contractor shall provide for adequate Flow Control including but not limited to required pumping and bypassing as stipulated in Section 2740 Flow Control, of the contract documents.
- **2737.03.04** Prior to performance of the actual work, the Contractor shall carefully inspect the entire site and locate the manholes designated to be rehabilitated. If a flow meter is encountered in any manhole, the contractor shall notify the County inspector 48 hours prior to needed removal of meter. The Contractor shall not remove the flow meter themselves. The cost for any flow meters damaged by the contractor or his subcontractors is the contractor's responsibility.
- **2737.03.05** Site conditions may preclude the Contractor from mobilizing the sealing and lining equipment near the manhole. If the manhole is inaccessible, as determined by the Contractor and the County, the Contractor shall hand apply the sealers and liners per the manufacturer's instructions and recommendations. Hand application shall be completed at no additional cost to the County.
- **2737.03.06** All materials shall be delivered to the job site in the manufacturer's original sealed containers that bear identifying labels. All materials shall be used in strict accordance with the sealers and liners equipment manufacturer's printed directions.
- **2737.03.07** The Contractor shall be licensed by the sealer and liner process manufacturer.
- **2737.03.08** The Contractor shall conduct operations in accordance with applicable OSHA standards, including those safety requirements involving entry into a confined space. Make suitable precautions to eliminate hazards to personnel near construction activities when pressurized air is being used.
- **2737.03.09 Manhole Step Removal:** The Contractor shall remove steps prior to manhole lining, unless otherwise specified by the County. Step removal shall consist of neatly cutting the steps flush with the wall prior to any lining installation. The Contractor shall be responsible for proper disposal of the steps.

2737.03.10 Preparation of Surfaces to Receive Sealing and Lining.

(a) Throughout the entire surface preparation process, any nearby installations, equipment vehicles, structures, etc. shall be protected from blasting grit and dust.

- (b) Place covers over bench to prevent extraneous material from entering the sewer lines during cleaning and rehabilitation work.
- (c) Filter solids-laden water through an approved de-silting device. No material shall be allowed to travel downstream.
- (d) Sludge or other surface impurities (including, but not limited to, oils, grease, incompatible existing coatings, waxes, form release, curing compounds, efflorescence, sealers, salts, or other contaminants) shall be removed by fresh water blasting (3,000 psi minimum). Should this operation be insufficient to remove surface impurities, abrasive blasting shall be performed. An environmentally acceptable detergent may be used in conjunction with the water blast as long as it is thoroughly rinsed out with fresh water after application.
- (e) Loose and protruding brick, mortar, and concrete shall be removed using a mason's hammer and chisel and/or scraper.
- (f) Concrete or brick to be coated shall be prepared by fresh water or abrasive blasting using properly graded, clean, sharp angular abrasive blast media to produce a sound surface, with no evidence of laitance, loose concrete contaminants or debris, and shall display a surface profile suitable for lining. Minor rebuilding of the manhole may be required to provide a smooth surface; this may include patching, reshaping, and/or replacement of missing bricks with new bricks or a solid layer of concrete mortar. Previously applied coatings, if any, shall be completely removed during abrasive blasting operations.
- (g) Prior to application of the liner, all apparent leaks in structural section joints around pipe penetrations, minor cracks or leaks in other areas of the structure, shall be plugged or repaired with an approved patching mix, or infiltration control mix in accordance with this Specification. Major cracks or leaks shall be plugged or repaired with an approved chemical grout in accordance with this Specification and Section 2738 - Sanitary Sewer Pipe Joint and Service Connection Testing and Grouting. The patching mix, infiltration control mix, and chemical grout shall be mixed and applied per the manufacturer's recommendations. Any excessive cavities in wall area and around pipe penetrations shall be filled with an approved patching mix or chemical grout. Remove all protruding pipe ends no longer in use after approval is obtained from County. Remove all excess expansion joint material prior to application of the liner system.
- (h) Some leaks may require weep holes to localize the infiltration during the application, after which the weep holes shall be plugged with the quick-setting infiltration control mix prior to the final liner application. When severe infiltration is present, drilling may be required in order to pressure grout using a cementitious or chemical grout. The manufacturer's recommendations shall be followed when pressure grouting is required.
- (i) All masonry surfaces shall be washed to clean blast dust out of the pores of the brick or cement substrate.

- (j) Structure walls shall be sprayed with a chlorine solution to kill any bacteria growth in the substrate and rinsed just prior to the application of the liner.
- (k) The walls shall be tested for pH and brought to a neutral state prior to application of the liner.
- (I) Areas of manholes that are found to be structurally damaged and in need of repair beyond the scope of this specification shall be brought to the attention of the County. A suitable repair method shall be developed for each area and submitted to the County for review prior to commencing the repair.
- (m) Any bench, invert, channel, or service line repairs shall be made at this time using the quick-setting patching mix, and shall be used per the manufacturer's recommendations.
- (n) Manhole benches and inverts shall be prepared and cleaned in the same manner as prescribed above.
- (o) Invert Repair: Invert repair shall be performed on all inverts with visible damage or infiltration. After blocking flow through the manhole and thoroughly cleaning invert, the quick-setting patch mix shall be applied to the invert in an expeditious manner. The mix shall be troweled uniformly onto the damaged invert extending out onto the base of the manhole sufficiently to tie into the structural/structurally enhanced monolithic liner to be applied. The finished invert surfaces shall be smooth and free of ridges. The flow may be re-established in the manhole after the mix has properly cured. Upon completion of the invert repair and manhole lining, there shall be a smooth transition from the invert to all of the lined and unlined incoming and outgoing connections.
- (**p**) All surfaces shall be inspected during and after cleaning and before the manhole is lined.

2737.03.11 Manhole Sealer.

- (a) Sealing cracks shall mean that the entire wall and bench surface is sealed by permeation grouting the soil surrounding the manhole. Grout shall extend from manhole base to top of cone section and will include the coneto-frame joint, bench, and where pipes enter and exit the manholes.
- (b) Chemical grout material shall conform to the requirements specified in Specification Section 2738 Sanitary Sewer Pipe Joint and Service Connection Testing and Grouting.
- (c) Chemical grout shall be applied to exterior manhole surfaces through application holes drilled in manhole walls, which are to be located in a staggered configuration to assure adequate distribution of grout into the soil. Location of holes shall typically be at 2 feet vertical intervals, with four holes per level. Locations will depend on actual field conditions.

Chemical grout shall be applied through threaded connections into lower holes until grout is freely flowing from the next highest set of holes and a thorough grout zone is established as determined by the County. The Contractor shall be fully responsible for damage caused to the existing manhole due to his or his subcontractors' operations. Chemical grout injection pressures shall not exceed 25 psi at the inlet. Holes shall be filled with a quick setting infiltration control mix once chemical application is completed and prior to the liner application.

(d) Sealing of precast concrete manhole joints shall conform to the requirements of ASTM F2414 (Standard Practice for Sealing Sewer Manholes Using Chemical Grouting) and shall consist of injecting grout through holes drilled at leaking joints. Once 10 gallons of grout has been injected at a leaking joint, the County will need to approve any additional grouting at this location.

2737.03.12 Manhole Lining.

- (a) Application of Cementitious or Epoxy Liner
 - (1) The Contractor shall take precautions to keep overspray or excess material from entering the newly installed liner pipe and any other pipes in the manhole. Any overspray or excess material shall be removed by the contractor.
 - (2) Prior to liner application onto walls, manhole bench area shall be covered with plywood sections, which conform to the internal dimensions of the manhole, to prevent accumulation of liner material on bench. No application shall be made to frozen surfaces or if freezing is expected to occur inside the manhole within 24 hours after application.
 - (i) Cementitious Liners: If ambient temperatures are in excess of 95 °F, precautions shall be taken to keep the mix temperature at the time of application below 90 °F. The mix water temperature shall not exceed 85 °F. Chill with ice if necessary.
 - (3) Mixing: For each bag of product, use the amount of materials specified by the manufacturer and mix per the manufacturer's instructions and recommendations.
 - (i) The Contractor shall empty the mixed material into the holding hopper and prepare another batch with timing such that the nozzleman can spray in a continuous manner without interruption until each application is complete.
 - (4) Spraying

- (i) Low pressure spray liner shall be applied to the manhole wall and bench surfaces and allow liner to cure in accordance with the product manufacturer's instructions and recommendations. The spray equipment shall be specifically designed to accurately apply the specified liner materials and shall be regularly maintained and in proper working order.
- (ii) Liner application shall be completed with a minimum of two coats or as per the manufacturer's recommendations, to achieve no less than the minimum liner thickness as discussed in 2737.02. The first coat shall be applied to a surface that meets the manufacturer's requirements for a successful bond between the liner and the existing manhole. Materials shall be spray applied from the bottom of the wall to the top, to a minimum uniform thickness to ensure that all cracks, crevices, and voids are filled and a relatively smooth surface remains after light troweling, if required. The light troweling is performed to compact the material into voids and to set the bond. The second application, as necessary per the manufacturer's recommendations, shall be applied based on the manufacturer's recommendations for the time elapsed since the first application and the required consistency of the first coat for a proper bond between the applications. If the window of time is exceeded, additional procedures may be required by the manufacturer's instructions before the second coat can be applied. The second application shall be applied from the bottom up and shall be a finished smooth surface.
- (iii) Bench Application: The plywood covers shall be removed and the bench sprayed such that a gradual slope is produced from the walls to the channel with the thickness at the edge of the channel being no less than the minimum liner thickness as discussed in 2737.02. The wall bench intersection shall be rounded to a uniform radius equal to the full circumference of the intersection. If using an epoxy lining, the sloped surfaces shall be given a non-slip finish by broadcasting aluminum oxide or silica sand into the surface prior to gelation.
- (5) Watertight Seal Between Pipe Liner and Manhole Liner: Where a manhole has been lined through with a pipeline liner, the Contractor shall prepare a watertight seal and smooth transition between the pipe liner and manhole liner system. Also refer to Specification Section 2731, Pipe Rehabilitation General Requirements, Paragraph 2731.03. No leakage or gaps will be allowed. The method of sealing and preparing a smooth transition shall be approved by the County.

- (6) The installation of the approved liner system shall be in strict accordance with the manufacturer's written instruction. This shall include re-grouting all inlet and outlet lines and benches as needed, plus the preparation, installation, curing, and finish operation, for the completion of the rehabilitation process. Sagging of the material is not permitted.
 - (7) Curing
 - (i) Caution should be taken to minimize exposure of applied product to sunlight and air movement. If application of second coat is to be longer than 15 minutes after completion of application of first coat, the manhole cover shall be set back in place. At no time should the finished product be exposed to sunlight or air movement for longer than 15 minutes before replacing the manhole cover.
 - (ii) The final application shall have a minimum of 4 hours cure time before being subjected to active flow. Total cure times shall be determined by the manufacturer.
 - (iii) Traffic shall not be allowed over manholes during or immediately after the rehabilitation. Traffic shall be allowed over the manholes after a period of time as determined by the manufacturer.

2737.03.13 Manhole Frame Seals.

- (a) The manhole frame and the chimney above the cone shall be sealed and shaped in accordance with the manufacturer's installation recommendations and as specified in section 2737.02.04.
- (b) The Contractor shall be trained in the installation of the manufacturer's product and certified by the seal manufacturer.
- (c) Internal CIP Application:
 - (1) Preparation: All surfaces in contact with the internal CIP frame seal must be stringently pressure washed with a minimum of 3,000 psi @ 5 gal/min pressure washer. Other alternatives to clean the structure may be used along with pressure washing such as abrasive blasting. The existing casting shall be cleaned using a grinder, wire wheel or by sand blasting. Large voids, offsets and areas with missing or mis-aligned bricks or adjustment materials shall be filled with hydraulic cement to provide an area that liner can effectively press up against. Smaller voids and missing mortar may go un-patched, since these areas will be filled with excess resin. Steps that are located in the area to be lined shall be removed. Any voids that will be produced due to frame offsets shall have mastic used to create a smooth transition from the adjustment to the frame and accommodate the installation of the

liner. The frame seal liner shall accommodate moderate frame offsets or other irregularly shaped structures.

- (2) Frame Seal Impregnation: The CIP frame seal shall be impregnated (saturated) on-site under controlled conditions. The resin volume shall be measured to accommodate each specific seal. The volume of resin used shall be sufficient to fill all voids in the liner material at nominal thickness and diameter and any voids that exist in the installation manhole. No dry or unsaturated areas in the liner shall be acceptable upon visual inspection.
- (3) Installation Device: Once the CIP frame seal is placed in the manhole the installation device is inserted inside the liner. Spacing rings on top of the manhole allow the installation device to rest at the correct depth to accommodate the installation requirements. Once inserted, the installation device bladder is pressurized. The installation device stays in place and pressurized until the liner is fully cured. The installation device and bladder must conform to the shape of the manhole and fully expand the liner so it is pressed tightly against the shape of the existing manhole accommodating offsets or other surface irregularities. Several bladder sizes may be required to accommodate the installation requirements of this project.
- (4) Curing: The CIP frame seal is cured at ambient temperature as it is pressed firmly against the existing structure. The curing time must take into consideration the resin system, ground conditions (temperature and moisture level), and weather conditions. Typically, one (1) hour (minimum) is needed to cure the liner. A curing log shall document the cure time, pressure, resin usage, and other pertinent information. This shall be provided to the Engineer upon request.
- (5) Trimming: Once cured, the installation device shall be removed and the CIP frame seal trimmed at the manhole cover seat. The liner shall be beveled at the seat or slightly recessed to prevent debonding when the manhole cover is opened and closed.
- (6) Completed CIP Frame Seal: The finished CIP frame seal shall be continuous from the manhole cover seat to the overlap onto the cone/corbel/manhole wall section. The seal shall provide a smooth surface that conforms to the configuration of the existing structure. The seal shall be free of dry spots, voids, air gaps and delamination. The finished product must provide an air and watertight structural and corrosion resistant seal protecting the entire chimney section of the manhole.
- (7) Recommended Inspection and Testing Practices: The frame seal shall be visually inspected to insure adequate bonding, watertightness, resin saturation, complete cure, and a smooth surface free from gaps, cracks or significant hollow spots.

- (d) Internal Fiberglass and Epoxy Hand Applied Frame Seal Application.
 - (1) Hand applied internal fiberglass and epoxy frame seals should be used to accommodate frame/adjustment section off-sets that cannot be accommodated with resin impregnated fixed diameter CIP frame seals.
 - (2) Area Preparation. The Contractor shall install and store the product in temperatures as recommended by the manufacturer. The Contractor shall avoid installing the epoxy products in direct sunlight and/or with rising surface temperatures as this may result in blistering of the materials due to expansion of the entrapped air or moisture in the concrete. Concrete surfaces that have been in direct sunlight must be shaded for 24 hours prior to application and remain shaded until the initial set has taken place.
 - (3) Surface Preparation. All structures to receive specified products must be properly designed and capable of withstanding imposed loads. All surfaces shall be pressure washed with a minimum of 4,000 PSI utilizing a zero degree rotating tip. Steel surfaces must be power tool cleaned in accordance with SSPC-SP3 Power Tool Cleaning. New concrete surfaces must be abrasive blasted in accordance with SSPC-SP13 Surface Preparation of Concrete to remove all laitance, loose or damaged concrete, oils, greases, and chemical contaminants. Concrete surfaces that have had coatings or sealers applied must also be abrasive blasted in accordance with SSPC-SP13. Suitably prepared concrete should have a uniform surface texture resembling coarse sand paper. Any exposed rebar must receive an approved epoxy mastic primer prior to application of the concrete re-surfacer. The blasting abrasive shall allow free silica product such as Dupont Starblast.
 - (i) All structures with surface deterioration (pitted precast concrete, holes, voids, brick with mortar missing, etc.) or as required to accommodate the requirements of the work shall be patched and reshaped. Missing bricks shall be replaced or filled solid with concrete mortar. This shall be in accordance with the Manhole Rehabilitation specification section.
 - (ii) All active leaks must be stopped prior to installation of the frame seal.
 - (iii) The area associated with the frame seals installation shall be addressed as needed to accommodate the installation of the frame seal.
 - (4) Installation. After inspecting all surfaces for suitability, installation of the internal fiberglass and epoxy hand applied frame seal shall begin by applying the epoxy mastic to the interior

walls starting just below the cover seat, at an approximate thickness of 100.00 mils. The applicator determines the workable area to be covered in the first pass. The fiberglass fabric shall be cut into the required dimensions and pressed, using a putty knife, into the mastic to achieve full wetting of the fabric. With subsequent applications of the fabric, the edges shall be overlapped a minimum of 2-inches. Epoxy shall be applied between the overlapped edges to assure a monolithic construction. The fabric shall be top-coated with the epoxy mastic to insure complete saturation and encapsulation of the fabric. The finished internal frame seal lining system shall have a minimum thickness of 125.0 mils.

- (5) Curing. Allow the epoxy to cure as recommended by the manufacturer before returning the structure to service.
- (6) The internal frame seal shall be beveled at the seat or slightly recessed to prevent debonding when the manhole/structure cover is opened and closed.
- (7) Completed internal frame seal. The finished hand applied manhole frame seal shall be continuous from the manhole/structure cover seat to the overlap onto the cone/corbel/wall section as required to make a complete and watertight seal. The seal shall provide a smooth surface that conforms to the configuration of the existing structure. The seal shall be free of dry spots, voids, air gaps and delamination. The finished product must provide an air and watertight structural and corrosion resistant seal protecting the chimney section of the manhole.
- (8) Recommended Inspection and Testing Practices. The internal frame seal shall be visually inspected to insure adequate bonding, watertightness, resin saturation, complete cure, and a smooth surface free from cracks or significant hollow spots.

Note: The internal hand applied frame seal, when indicated on the Contract Documents, shall be installed after all other forms of rehabilitation have been completed to the manhole/structure.

- (e) External Application.
 - (1) In preparation for the installation of the external frame seal, thoroughly clean and remove any loose or de-bonded construction materials or debris located on the exterior of the exposed manhole/structure and fill any voids with a cementitious material to provide a smooth and suitable substrate for the frame seal to be applied and a watertight seal provided (including any voids around frame gussets). The extent of this repair work shall be to the point where the exposed portion of the manhole/structure meets the ground surface (existing or proposed elevation).

- (2) In addition to these requirements, the product shall be installed per the manufacturer's installation guidelines.
- (3) The external seal shall overlap the frame and extend to cover the entire adjustment rings area to at least 12-inches below the bottom of the adjustment area on to the cone or riser section.
- (4) Seal Overlap. When multiple seals are required to cover the adjustment section. The seals shall overlap the previously installed seal a minimum of 6-inches or per the manufacturer's recommendations to produce a watertight seal. Also there should be a horizontal overlap of at least 6- to 8-inches for each of the seals.
- (5) If the seal is exposed to the environment, it shall be coated per the manufacturer's requirements to prevent ultraviolet (UV) deterioration of the installed seal.

2737.03.14 Replace or Reset Manhole Frame and Cover.

- (a) The Contractor shall remove and dispose of or salvage the existing manhole frames and covers as specified. It shall be the responsibility of the Contractor, at no additional cost to the County, to repair any damage to the chimney or corbel caused by the removal of the existing manhole frame.
- (b) External Manhole Frame Seals: Where frames and covers are to be excavated (replaced or reset), the Contractor shall apply an external manhole frame seal in accordance with the manufacturer's recommendations and as specified in section 2737.02.04.
- (c) Technique of Repair.
 - (1) Remove the existing pavement or other surface area adjacent to the manhole. Excavate a maximum 6' x 6' area. Excavate to expose the entire frame and a minimum of 16-inches of the existing manhole wall.
 - (2) Unless otherwise directed, replace the 2 to 3 courses of brick on brick manholes and if the manhole is made of precast concrete, remove the brick grade adjustment to top of cone.
 - (3) Clean all joint surfaces between the frame, adjustments and existing manhole wall to insure a watertight seal.
 - (4) Unless otherwise directed, obtain proper grade by using not less than 4 inches or more than 12 inches of either:
 - (i) Brick and mortar.

- (ii) Solid precast concrete adjustment rings. Rings shall be a minimum of four-inches thick. No more than two rings shall be used to achieve the proper grade. The precast concrete adjustment rings shall be set in full beds of Type M mortar not less than 1/4-inch thick nor more than 1-1/4 inch thick. Frame elevation shall be set at finished grade in traffic areas and as directed by County in other areas. All horizontal, circumferential, and vertical mortar joints inside and outside of the structure shall be pointed for their full width. Depth of pointing shall not exceed 3/8-inch.
- (5) The chimney and corbel shall be repaired or rebuilt with precast concrete grade rings as appropriate to reconstruct the chimney to the height needed for the frame and cover to meet the required grade. The manhole frame shall be sealed using either a manufactured or applied sealing method. Plastic manhole adjusting rings will not be permitted.
- (6) Newly installed grade ring transition section shall be completely coated on the inside and top with a protective liner, overlapping a minimum of 6-inches down on the existing manhole structure. The protective lining shall be in accordance with the liner specified for the precast reinforced concrete manhole sections, as specified in Paragraph 2737.02 of this Specification. Cure entire adjustment ring transition section for a minimum of 24 hours prior to backfilling.
- (7) Excavation and site restoration in paved and unpaved areas shall be in accordance with the County's Standards to a minimum of established preconstruction conditions.
- (8) Furnish and install a new frame and cover, or reuse the existing ones, as specified by the County and in accordance with the County's Standards. Also, furnish and install new frame and cover where manhole replacement is specified and in accordance with the County's Standards.
- (d) Technique of Repair in Paved Areas.
 - (1) Suitable materials (stockpiled) shall be tamped in place to form the subbase for the pavement. If additional material is needed, suitable materials shall be added before the pavement is replaced.
 - (2) The surfacing needed to cover the exposed area (concrete or asphalt) shall conform to the existing pavement. It shall be placed to the same elevation and grade and provide a smooth transition from the existing asphalt onto and over the patch and new frame and cover. All excess material, including pavement, shall be disposed of as required in the Contract Documents.

- (3) Pavement replacement not satisfactorily done by the Contractor shall be reworked at no expense to the County.
- (4) Backfill shall be replaced and compacted to prevent settlement and to restore the setting to a condition equal to or better than that found. Backfill shall not cover the manhole.
- (e) Technique of Repair in Unpaved Areas:
 - (1) Backfill shall be replaced and compacted to prevent settlement and to restore the setting to a condition equal to or better than that found. Backfill shall not cover the manhole.
 - (2) Any private property which is removed for access to the manhole shall be replaced by the Contractor in existing or better condition. If this replacement is not to the satisfaction of the County, it shall be redone at no cost to the property owner or the County.
- (f) The Contractor shall take all necessary precautions to prevent falling debris from damaging the manhole trough and/or entering the sewer. The damaged or deteriorated portions of the existing manhole chimney and corbel shall be removed, repaired or replaced, and disposed of as required in the contract documents, by the Contractor, at no additional expense to the County.

2737.03.15 Manhole Bench/Channel Reconstruction.

- (a) Repairs shall be performed on all benches/channels with visible damage or infiltration, and shall be completed in accordance with the County's Standards.
- (b) The Contractor shall construct the manhole channel in accordance with the Baltimore County Department of Public Works and Transportation Standard Specifications and Details.
- (c) Manhole floors shall be constructed and/or repaired in accordance with the Baltimore County Department of Public Works and Transportation Standard Specifications and Details.
- (d) Prior to initiating base reconstruction efforts, clean manhole bases with high pressure water blast. Loose materials, including spalled or broken concrete shall be removed and resulting surface made suitable for bonding to new manhole base. Solid debris resulting from the cleaning operations shall be removed from the manhole prior to reconstruction. The Contractor shall remove the existing channel obstructions where directed by the County based on actual field conditions.
- (e) Mortar shall be used to build up deteriorated base and channel to original elevations or to effect a smooth transition between incoming and outgoing

pipes. Bricks may be used to build-up the manhole base if desired and approved by the County.

- (f) After placing the new bench and channel, the Contractor shall apply a surface of quick set mortar to serve as a sacrificial, protective surface for the newly reconstructed manhole base. The protective surface shall be placed once underlying mortar has firmly set, and shall have sufficiently hardened prior to release of back-up sewage into the manhole so as to prevent disruption to the reconstructed base.
- (g) Sewage released into the manhole shall be in a controlled fashion without surcharging or flooding onto the new bench.
- **2737.03.16 Manhole Adjustment and Protection.** The manhole shall be adjusted and protected in accordance with the County's standards, including Standard Details G-2, G-3, and G-3A and related Sanitary Sewer Standard Details. Work shall include raising of manhole to road surface or as specified.
- **2737.03.17 Exterior Cone Refinishing.** The exterior cone shall be refinished with a mortar finish. The materials and re-finishing shall be in accordance with the County Standards.
- **2737.03.18 Manhole Insert Installation.** The manhole insert shall be manufactured, watertight, removable, and of a size suitable for the manhole opening, and shall be installed per the manufacturer's recommendations.
- **2737.03.19 Inspection and Quality Control.** The County shall have the right to inspect work at all times. Failure of the County to provide inspection services does not relieve the Contractor of his responsibility to perform the work in accordance with these Specifications.
- **2737.03.20** Clean-up and Disposal. The Contractor shall not allow waste or debris to accumulate. He shall have it removed from the job site at frequent intervals.
- **2737.03.21 Defective Work.** Refer to Section 2731, Pipe Rehabilitation General Requirements.
- **2737.03.22 Quality Assurance.** The Contractor shall use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
 - (a) Testing and Inspection. All rehabilitated manholes shall be tested for acceptance for payment of line item. Tests shall be performed no sooner than five (5) days after completion of manhole sealing and lining, unless otherwise approved by the County. At the direction of the County, rehabilitated manholes shall be tested as follows:
 - (1) Visually verify the absence of leaks and that any services are reinstated and unobstructed.

- (2) The Contractor shall conduct one of the following tests:
 - (i) A Negative Air Pressure (Vacuum) Test. The test shall be conducted according to ASTM C1244 and Section 1008.03.09 of the County Standards.
 - (ii) An Exfiltration Test. The test shall be conducted according to ASTM C969.
 - (iii) A Discontinuity (Holiday) Test. The test shall be conducted according to ASTM D5162 (Test Method B unless recommended otherwise by the manufacturer). The contractor shall consult the epoxy lining manufacturer for recommendations regarding test equipment and inspection voltages.
- (3) A final visual inspection shall be made and any deficiencies in the finished lining shall be marked and repaired according to the manufacturer's recommendations.
- (4) Provide test results to county.
- (b) Cementitious and Epoxy Liner. At the direction of the County's representative, the Contractor may be directed to verify the liner thickness at any random point of the new interior surface. Any areas found to be thinner than minimum tolerances shall immediately receive additional material.
- (c) Flow control/bypass systems shall remain in place until after the manhole rehabilitation and/or replacement testing has been successfully completed.
- **2737.03.23** Acceptance for Payment. After the various types of rehabilitation work have been completed, the work shall be visually inspected for compliance and tested for water tightness and uniformity by the Contractor in the presence of the County. If the tests specified herein cannot be conducted on the proposed product and/or rehabilitated manhole, the Contractor shall note that with the manhole rehabilitation product shop drawing submittals and shall provide an alternate test method for review and approval by the County, at no additional expense to the County. If a post-rehabilitation water tightness test is not provided, the Contractor will not receive full compensation for the manhole rehabilitation tasks. The County reserves the right to inspect the rehabilitated manholes during the warranty period. Any leakage or defects in the work found by this inspection or watertightness testing shall be corrected by the Contractor within 30 days from notice, at no additional cost to the County.

2737.04 MEASUREMENT AND PAYMENT

2737.04.01 Manhole Rehabilitation. Shall be measured based upon vertical linear foot of manhole rehabilitated, of each manhole size, measured from the bottom of the frame to the invert of the channel at the center of the manhole.

- (a) **Basis of Payment.** Manhole Rehabilitation shall be paid for at the contract unit price bid per vertical linear foot of manhole rehabilitated, using the rehabilitation technology specified. The unit price includes all labor, surface preparation, materials, equipment, tools, confined space entry and equipment, resident notification and incidentals for cleaning, repairing, patching, sealing and waterproofing of all surfaces including walls, chimney, bench and channel, liner application, preconstruction video, sediment and root removal, debris collection and disposal, traffic control and related permits, flow control, manhole step removal, testing, site restoration, site cleanup, and all other rehabilitation work, not included under other items, necessary to complete the rehabilitation as specified and directed.
- **2737.04.02 Rebuild Bench and Channel.** Shall be measured for each bench and channel repaired and approved.
 - (a) **Basis of Payment.** Rebuilding the bench and channel shall be paid for at the contract unit price for each bench and channel repaired and approved.
- **2737.04.03 Internal Manhole Frame Seal.** Shall be measured for each internal manhole frame seal installed and approved.
 - (a) **Basis of Payment.** Internal manhole frame seals shall be paid for at the contract unit price for each internal manhole frame seal installed and includes all labor, materials, equipment, tools and incidentals for preparing the internal frame/cone area, seal installation, testing, traffic control and other incidental work.
- **2737.04.04 External Manhole Frame Seal.** Shall be measured for each external manhole frame seal installed and approved.
 - (a) **Basis of Payment.** External manhole frame seals shall be paid for at the contract unit price for each external manhole frame seal installed and includes all labor, materials, equipment, tools and incidentals for preparing the external frame/cone area, seal installation, testing, traffic control, site cleanup and other incidental work.
- **2737.04.05** Stainless Steel Manhole Insert. Shall be measured for each insert installed and approved.
 - (a) **Basis of Payment.** Stainless steel manhole inserts shall be paid for at the contract unit price for each insert installed and includes all labor, materials, equipment, tools and incidentals for preparing the manhole, testing, traffic control, site cleanup and other incidental work.
- **2737.04.06 Exterior Cone Refinishing.** The quantity of cone refinished will be measured in vertical feet from the ground to the bottom of the cover.
 - (a) **Basis of Payment.** Payment for manhole cone refinishing (exterior) is made at the contract unit prices per vertical linear foot for cone refinishing as specified. The price per vertical linear foot shall include all labor,

incidentals, materials, equipment, tools, resident notification, necessary permits, cleaning, required clearing around the manhole, debris collection and disposal, repairing and refinishing the cone, mortar application, site cleanup, and all other work, not included under other items, necessary to complete the refinishing as specified and directed.

- **2737.04.07 Manhole Adjustment and Protection.** Measurement for payment will be for the actual number of manholes adjusted, protected and approved.
 - (a) **Basis of Payment.** Payment for adjusting and protecting the sanitary sewer manholes is made at the contract unit prices per each manhole adjusted and protected as specified. The price per each shall include all labor, incidentals, materials, equipment, tools, offsite disposal of unsuitable material, paving, site cleanup and all other work, not included under other items, necessary to complete the adjustment and protection as shown, specified and directed.
- 2737.04.08 Replace or Reset Manhole Frame and Cover (Including Replacement with a Watertight Frame and Cover). Measurement for payment will be for the actual number of manhole frames and covers replaced or reset.
 - (a) **Basis of Payment.** Payment for replacing or resetting the sanitary sewer manhole frame and cover (standard or watertight) is made at the contract unit price per each manhole frame and cover replaced (standard or watertight) or reset as specified. The price per each shall include all labor, incidentals, materials, equipment, tools, offsite disposal of unsuitable material, traffic control and related permits, paving, site cleanup and all other work, not included under other items, necessary to complete the replacement and resetting as shown, specified and directed. The Contractor shall remove and dispose of the existing manhole frame and cover. It shall be the responsibility of the Contractor, at no additional cost to the County, to dispose of the existing frame and cover and repair any damage to the chimney or corbel caused by the removal of the existing manhole frame.
- 2737.04.09 Sealing Precast Concrete Manhole Joints. Payment for sealing by chemical grout of precast concrete manhole joints will be made by Gallons (GAL), for the actual measured volume of grout injected as shown, specified and directed. The unit price includes all labor, surface preparation, materials, equipment, tools, confined space entry and equipment, resident notification and incidentals for cleaning, sediment and root removal, debris collection and disposal, traffic control and related permits, flow control, site restoration, site cleanup, and all other work, not included under other items, necessary to complete the sealing as specified and directed.

END OF SECTION

SECTION 2738

SANITARY SEWER PIPE JOINT AND SERVICE CONNECTION TESTING AND GROUTING

2738.01 DESCRIPTION

- **2738.01.01 Reference.** All applicable requirements of other portions of the Contract Documents apply to the Work of this Section.
- **2738.01.02 Description of Work.** The work covered by this section consists of providing all labor, equipment, material and supplies, and performing all operations required to test and grout sanitary sewer pipe joints and/or sewer service connections, per ASTM F2304 and ASTM F2454. This specification is intended to identify the minimum requirements of the County. Unless otherwise specified, where service connections are to be tested and sealed, testing and sealing shall also include the first joint section along the lateral. The first joint section is defined as the portion of pipe/lateral from the service connection fitting to the (first) upstream lateral joint connection.
- **2738.01.03** Submittals After Notice of Award. The Contractor shall submit the information listed below for review and approval. The Notice to Proceed will not be issued until all of the listed information has been reviewed and approved by the County.
 - (a) Chemical Grouting Materials
 - (**b**) Chemical Root Inhibitor
 - (c) The installer must be able to document a minimum of 1,500 joints and/or service connections successfully sealed and tested, of the type to be used on this project, in the U.S. with the past five years.
 - (d) The Contractor shall provide a minimum 48-hour advance written notice of proposed testing schedules and testing procedures for review and concurrence by the County.
 - (e) Certified statement from the resin or grout injection manufacturer verifying that the Contractor is an approved installer.
 - (f) Certificates of training for each crewmember involved in the injection and/or grout process.
 - (g) Manufacturer's Safety Data Sheets for the resin and/or grout.
 - (h) Material composition, specifications, physical properties and chemical resistance for resin and/or grout. Contractor must submit manufacturer's certification for resin and/or grout demonstrating suitability for penetrating soil/bedding and voids surrounding the lateral connection.
 - (i) Manufacturer's recommended procedures for handling, storing, and injecting resin and/or grout.

(j) Product Warranty and Certification Form: To insure that all products and materials proposed for use on this project are of the highest quality and specifically designed and manufactured for the intended installation or use, a Product Warranty and Certification Form shall be completed by the rehabilitative product manufacturer(s), manufacturer's representative or vendor as well as the grouting installer certifying that the product(s) they are proposing to use is specifically designed for the intended application, installation and/or function. Failure to complete this form may prevent the product(s) from being used on this project.

PRODUCT WARRANTY AND CERTIFICATION FORM

REFERENCE: (PROJECT NAME AND CONTRACT NUMBER):

THE UNDERSIGNED HEREBY ATTESTS THAT HE HAS EXAMINED ALL THE REFERENCED PROJECT INFORMATION, PROJECT INSTALLATION REQUIREMENTS AND THE CONTRACT SPECIFICATIONS AND HEREBY WARRANTS AND CERTIFIES THAT THE REHABILITATION PRODUCTS THAT THEY PROPOSE TO FURNISH, DELIVER AND INSTALL FOR THIS PROJECT MEETS OR EXCEEDS THE REQUIREMENTS OF THESE CONTRACT SPECIFICATIONS, IS SUITABLE FOR THE INTENDED PURPOSE AND INSTALLATION, AND WILL SATISFACTORY PERFORM TO THE CRITERIA SPECIFIED. THIS WARRANTY SHALL BE IN ADDITION TO, AND NOT IN LIEU OF, ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED.

PRODUCT:	
MANUFACTURER:	
Address:	
By: (Typed Name and Title)	(SEAL)
/s/	
(Signature)	(Date)
The Product Warranty and Certification must be signed by a Princ Product's Manufacturer. In the event the manufacturer is not the Su also sign this form.	
MANUFACTURER'S REPRESENTATIVE/VENDOR:	
Address:	
Ву:	
(Typed Name and Title)	(SEAL)
/s/	
(Signature)	(Date)

The Product Warranty and Certification must be signed by a Principal Person (President, Vice-President, etc.) of the Installation Contractor. In the event the manufacturer is not the Installation Contractor then a Principal Person of the Installation Contractor must <u>also</u> sign this form.

INSTALLATION CONTRACTOR: _____

Address:

By: ____

(Typed Name and Title)

(SEAL)

(Signature)

(Date)

/s/

- **2738.01.04 Submittals Prior to Final Payment.** The Contractor shall submit the information listed below for review and approval. Final Payment will not be made until all of the listed information has been reviewed and approved by the County.
 - (a) The Contractor shall submit records of all test results performed clearly identifying location, pipe characteristics, observations, procedures, and results data. This information shall include the test pressure before and after grouting, the pressures during grouting, the volume of grout used at each location, the gel set time used, the barrel test results, and the grouting material used (including the names and quantities of additives).
 - (b) The contractor shall submit DVDs for joint and/or service connection grouting work for each pipeline section in accordance with Section 2742, Television Inspection, and 2738.03.04(g)(9).

2738.02 MATERIALS

2738.02.01 Contractor's Equipment.

- (a) The Contractor shall certify that back-up equipment is available and can be delivered to the site within 48 hours and shall submit an equipment list to the County for approval before commencement of work.
- (b) Before commencement of work, the Contractor shall allow the County 48 hours to inspect the equipment to be used and allow the County to measure the internal dimensions of the tanks from which the sealing materials will be pumped. The Contractor shall demonstrate an acceptable technique for measuring the volume of the sealing materials in the tanks.
- (c) No work shall be performed or accepted if the Contractor's measurement equipment and/or measuring techniques are unacceptable to the County.
- **2738.02.02 Cleaning Equipment.** Shall be in compliance with Section 2741, Sewer Line, Lateral, and Manhole Cleaning.
- **2738.02.03** Video Inspection Equipment. Shall be in compliance with Section 2742, Television Inspection.

2738.02.04 Chemical Grout Equipment.

(a) Equipment for joint grouting shall be a remote controlled grout injection rig type with continuous air impervious inflatable diaphragms or packers at each end and other suitable approved devices which can be positioned to completely isolate each joint or break in the pipe and simultaneously permit sewage flow. The grouting device shall be a cylindrical casing type of a size less than the pipe diameter with two cables connected to both ends to pull it back and forth for positioning it in the line. Diaphragms or packers which are not airtight and may require extreme pressures to "seat" against the periphery of the pipe will not be allowed. Expansion shall be regulated by precise pressure gauges and controls. No device which is expanded mechanically will be allowed. An approved agitator shall be used during the entire sealing operation.

- (b) The service connection sealing packer shall be sized to accommodate the various diameters of existing sanitary sewer connections encountered. The service connection sealing inversion tubes shall accommodate four-inch and six-inch diameter service connections and laterals. The inversion tubes shall be a minimum of four feet long, and the circumference of the sealing length shall be sized to permit the passage of grout around the annulus without excess grout. Four-inch bladders will not be permitted in six-inch service connections. The last two feet of the inversion tube shall create an air-tight seal with the existing lateral pipe, so that no grout passes beyond the inversion tube. A sensing unit shall be located in the void and shall transmit pressure within an accuracy of 0.10 psi to a remote control panel.
- (c) The Contractor shall perform a test demonstration to verify the accuracy of calibrations of pump pressures and liquid amounts injected per stroke prior to commencing sealing operations. If this test demonstration fails to show that readings are accurate, the Contractor shall be required to make required repair or adjustments to the equipment and gauges, and retest until the results are satisfactory to the County. This test demonstration may be required at any time during the sealing operation.

2738.02.05 Air Test Equipment.

- (a) When requested by the County, the test equipment shall be positioned on a section of sound sewer pipe and a demonstration performed as described herein. This procedure will demonstrate the authenticity of the air test equipment and verify that test requirements are within the pipe capability. If the test is not performed successfully, the Contractor shall be required to repair or otherwise modify his equipment, and re-test until the results are successful and satisfactory to the County. Test requirements will be adjusted to within the pipe integrity limits. This test may be required at any time during the Contract period.
- (b) The basic equipment used shall consist of a television camera, joint testing device (such as a packer), and test monitoring equipment. The equipment shall be constructed in such a way as to provide means for introducing the test medium (air), under pressure, into the void area created by the expanded ends of the testing device and means for continually measuring the actual static pressure of the test medium at and within the void area only.
- (c) Void pressure data shall be transmitted electrically from the void to the monitoring equipment. Example: via a TV picture of a pressure gauge located at the void, or via an electrical pressure transducer located at the void.
- (d) All test monitoring shall be above-ground and in a location to allow for simultaneous and continuous observation of the television monitor and test monitoring equipment by the County's representative.

2738.02.06 Grout Materials for Joints and Service Connections.

(a) General: The Contractor shall select an acrylamide base gel, urethane base gel, acrylate gel, acrylic base gel, or urethane base foam as described in the paragraphs to follow. A dye shall be added to the grouting material to allow for visual

confirmation that the packer was positioned over the joint or service connection during grouting operations.

- (b) The chemical grout shall be a liquid of low enough viscosity to be easily pumped to the site of a leaking joint or connection and shall: react quickly to seal the joint, defect, or service connection against infiltrating ground water, be able to tolerate some dilution and react in moving water during injection, be capable of holding occurring heads of up to 20-feet of water and normal pipe movements without leaking, and able to withstand the environment of a sewage collection system.
- (c) Once cured, the grout shall not degrade under dry or wet conditions. When submerged in water the grout must prevent infiltration through the soil ring, the pipe joints, and service connections.
- (d) The cured chemical grout shall be flexible (not brittle), non-biodegradable, chemically stable, and resistant to acids, alkalis, and organics found in wastewater and storm water.
- (e) The packaging of grout components shall be conducive to safely handling and storing in the field. Field cleanup must be performed without an inordinate use of flammable or hazardous chemicals.
- (f) All mixtures for gel or foam and quantities shall be submitted to the County for approval prior to beginning the grouting operation. Additives to increase the strength, adhesion, solution density, and viscosity shall be approved by the County prior to their use. Bulk fillers such as diatomaceous earth may be added to the grout mix up to ten percent by weight of the total mix. The mixtures, quantities, and additives shall all be based on the manufacturer's recommendations.
- (g) Root inhibitors, such as dichlobenil, shall be incorporated in the mix when roots are present in the service connections and joints. The root inhibitor shall be compatible with the grout mixture, and shall be approved by the grout manufacturer. The Contractor specifically covenants and agrees that he shall make no claim against the County for any damages that may occur as a result of any adverse effect the chemical root inhibitors may have upon the Contractor's equipment or personnel.
 - (1) The active component for destroying intruding roots shall be a potent nonsystemic toxin that kills contacted roots at low concentration but does not permanently affect contacted parts of the plant a distance from the treated roots. The active ingredient must be spontaneously detoxified by natural chemical or biochemical processes in a relatively short time following its use. The active ingredients shall have no adverse effect on the performance of a wastewater treatment plant, and shall be registered with the Environmental Protection Agency.
- (h) The specified materials are considered toxic and irritants to the skin and eyes. However, none of the materials in the grouting system shall present undue hazard to contract site personnel. Mixing, handling and pumping chemicals shall be done by personnel familiar with the handling of the chemicals involved. Proper

protective outerwear including eye protection and respirators for inhalation protection shall be used while mixing or when otherwise exposed to close contact.

- (i) The chemical grout shall be mixed within the isolated area formed by the grouting rig or packer.
- (j) The amount of material necessary for various sizes and types of pipe joints and connections shall be calculated by the Contractor prior to injection.
- (k) The material selected shall have a cure time that is appropriate for the conditions encountered.
- **2738.02.07** Acrylamide Base Gel. The acrylamide base gel shall be based on a two-part chemical grout. The material shall have the following minimum properties:
 - (a) A minimum of 10 percent acrylamide base material by weight in the total sealant mix. A higher concentration of acrylamide base material shall be used, when directed by the County, to increase strength or offset dilution during the induction period.
 - (b) A controllable reaction from ten seconds to no more than one hour.
 - (c) A viscosity of approximately 2 centipoise which can be increased with additives, as approved by the manufacturer.
 - (d) Viscosity to remain constant throughout the induction period.
 - (e) The ability to tolerate some dilution and react in moving water.
 - (f) The reaction (curing) shall produce a homogeneous and firm gel.
 - (g) Latex additive to increase the strength, adhesion, solution density and viscosity shall be used when directed by the County.
 - (h) Use of catalyst containing dimethyl amino propionitrile (DMAPN) is prohibited.
- **2738.02.08** Urethane Base Gel. Urethane base gel materials shall have the following minimum properties:
 - (a) One part urethane prepolymer thoroughly mixed with between five and ten parts of water by weight. The recommended mix ratio is one part urethane prepolymer to eight parts of water (11 percent prepolymer). When high flow rates from leaks are encountered, the ratio of water being pumped may be lowered.
 - (b) A liquid prepolymer having a solids content of 75 percent to 95 percent, and a specific gravity of greater than 1.00.
 - (c) A liquid prepolymer having a viscosity of between 100 and 1,500 centipoise at 70 °F that can be pumped through 500 feet of ½-inch hose with a 1,000 psi head at a 1 ounce/second flow rate.
 - (d) The water used to react the prepolymer should be in the pH range of five to nine.

- (e) A relatively rapid viscosity increase of the prepolymer/water mix. Viscosity increases rapidly in the first minute for one to eight prepolymer/water ratio at 50 °F.
- (f) The ability to increase mix viscosity, density, gel strength, and resistance to shrinkage by the use of additives to the water is required.
- **2738.02.09** Acrylate Gel. Acrylate Gel shall have a constant viscosity during the reaction period and have the following minimum properties:
 - (a) Minimum 10 percent acrylate base material by weight or as specified by the manufacturer.
 - (1) In the total grout mix, a higher concentration (percent) of acrylate base material may be used to increase strength or offset dilution during injection.
 - (2) If acrylate base material is in 40 percent solution 27.5 percent by weight of total grout mix: 11 percent base material.
 - (b) The viscosity of the acrylate gel shall be approximately 2 centipoises but can be increased with additives.
 - (c) A controllable reaction time of 10 seconds to no more than 1 hour.
 - (d) A curing reaction which produces a homogeneous gel.
 - (e) Able to prevent dehydration and to increase mix viscosity, density, and gel strength by the use of additives.
 - (1) Diatomaceous earth can be added to concentration of five percent, by volume.
 - (2) Use of other additives following manufacturer's recommendations and the County's approval.
- **2738.02.10** Acrylic Base Gel. Acrylic base gel shall have the following minimum properties:
 - (a) A minimum of 10 percent acrylic base material by weight in the total sealant mix. A higher concentration of acrylic base material shall be used, when directed by the County, to increase strength or offset dilution during injection.
 - (b) The ability to tolerate some dilution and react in moving water.
 - (c) A viscosity of approximately 2 centipoise, which can be increased with additives, when directed by the County.
 - (d) A constant viscosity during the reaction period.
 - (e) A controllable reaction time from 10 seconds to no more than 1 hour.

- (f) A reaction (curing), which produces a homogeneous gel.
- (g) The ability to increase mix viscosity, density, and gel strength by the use of additives.
- **2738.02.11 Urethane Base Foam (Pipe Joints Only).** Urethane base foam shall have the following minimum properties:
 - (a) One part of urethane prepolymer thoroughly mixed with one part of water by weight (50% prepolymer).
 - (b) A liquid prepolymer having a minimum solids content of between 75 and 95 percent and a minimum specific gravity of 1.00.
 - (c) A liquid prepolymer having a viscosity of 150 to 1,200 centipoise at 72°F that can be pumped through 500 feet of ½-inch hose with a 500 psi head at a 1 ounce/second flow rate.
 - (d) Expansion and viscosity increases shall occur during injection foaming.

2738.03 CONSTRUCTION REQUIREMENTS

2738.03.01 Maintaining Existing Sewage Flows.

- (a) Maintaining existing sewage flows during the entire rehabilitation operations shall be the responsibility of the Contractor. Precautions and methods to prevent sewage back-ups shall be employed as required. Sewage back-up damage and/or clean-up required due to the Contractor's operations shall be the responsibility of the Contractor. Violations from sewage spills shall be the sole responsibility of the Contractor and must be reported to the County Inspector, the Baltimore County Bureau of Utilities, and Maryland Department of the Environment. Contractor must complete and submit to the County Inspector an Incident Report, included in Section 2740, Flow Control.
- (b) Sewage flow control shall be in accordance with Specification Section 2740, Flow Control.

2738.03.02 Cleaning Operations

- (a) Cleaning of the sewer lines, service connections, and laterals shall be performed as specified in Section 2741, Sewer Line, Lateral, and Manhole Cleaning.
- (b) Recleaning: If a pipeline, service connection, or lateral is found not to be properly cleaned in the opinion of the County, the television and grouting equipment shall be removed and the sewer recleaned at no additional expense to the County.
- (c) The main line, service connection and lateral shall be cleaned prior to and following the grouting operations to remove dirt, debris, mineral deposits, grease, and roots prior to grouting and excess grout material that accumulates in the sewer pipe, service connection, or lateral following grouting operations. Excess grout is

defined as grout that impedes or, if dislodged, may impede flow in the line. All cleaning shall be videotaped and provided to the County for review and approval.

2738.03.03 Air Testing

- (a) After the cleaning and television inspection operations are completed, as specified, the Contractor shall proceed with service connection and joint testing on the designated lines.
- (b) Air testing is intended to identify sewer pipe joints and service connections that are defective and that can be successfully sealed by internal pipe sealing/grouting process. Air testing is also used to test the effectiveness of the seal. Testing of joints and service connections that are visibly leaking is not required and will not be paid for by the County. Testing on cracked, broken pipe will not be required and will not be paid for by the County.
- (c) All testing shall be performed in the presence of the County, unless otherwise approved in writing by the County.
- (d) Air testing shall be performed before and after grouting operations by applying a positive air pressure to each joint and service connection and monitoring the pressure in the void.
- (e) Control Test. Prior to starting the air testing phase of the work, a two-part control test shall be performed, in conformance with ASTM F2304 and ASTM F2454, respectively. If the test readings are not accurate within ±0.5 psi for void pressure repeatability, the Contractor must repair or adjust the equipment.
 - (1) To ensure the accuracy, integrity, and performance capabilities of the testing equipment, a demonstration test shall be performed aboveground in a test cylinder constructed in such a manner that a minimum of two known leak sizes can be simulated. The technique will establish the test equipment performance capability in relationship to the test criteria and ensure that there is no leakage of the test medium from the system or other equipment defects that could affect the testing results. If this test cannot be performed successfully, the Contractor shall be instructed to repair or otherwise modify his equipment and re-perform the test until the results are satisfactory to the County. This test may be required at any other time during the testing work if the County suspects the testing equipment is not functioning properly.
 - (2) Joint Testing (only): After entering each manhole section with the test equipment, but prior to the commencement of joint testing, the test equipment shall be positioned on a section of sound sewer pipe between pipe joints, and a test performed as specified. This procedure will demonstrate the accuracy of the test equipment, as no joint will test in excess of the pipe capability. Should it be found that the barrel of the sewer pipe will not meet the joint test requirements (void pressure cannot be held for 60 seconds), the requirements will be modified as necessary.

- (f) The testing device shall be positioned over the joint or service connection to be tested by means of a measuring device and CCTV camera in the line.
- (g) The testing device shall be expanded so as to isolate the joint or service connection from the remainder of the line and create a void area between the testing device and the pipe joint or service connection.
- (h) Air shall then be introduced into the void area until a pressure equal to 0.5 psi per vertical foot of pipe depth (not exceeding a test pressure of 10 psi for pipe joints and 6 psi for service connections) is observed with the void pressure monitoring equipment. Perform testing following ASTM F2304 and ASTM F2454 respectively. If the required test pressure cannot be achieved (due to joint leakage), the joint or service connection will have failed the test and shall be sealed as specified herein.
- (i) After the void pressure is observed to be equal to or greater than the required test pressure, the air flow shall be stopped. If the void pressure decays by more than 2 psi within 15 seconds (due to service connection leakage) and more than 1 psi in 15 seconds (due to joint leakage), the joint or service connection will have failed the test and shall be sealed as specified herein.
- (j) Upon completing the air testing of each individual joint or service connection tested, the packer shall be deflated with the void pressure meter maintaining the established air test pressure. Should the void pressure meter fail to drop to zero, the Contractor shall be instructed to clean his equipment of residual grout material or make the necessary equipment repairs to provide for an accurate void pressure reading.
- (k) Any joint or service connection failing the air test prior to grouting shall be sealed as specified herein and retested by the same void pressure method and procedures to verify the effectiveness of the sealing. This procedure will be repeated until the joint or service connection passes the test. Additional sealing and retesting after the initial sealing and retesting shall be at no cost to the County.
- (I) During the air testing work, the contractor shall record the following information on prepared testing logs:
 - (1) Date.
 - (2) Identification of the line segment or service connection tested.
 - (3) The depth of the line segment or service connection as measured from the downstream manhole.
 - (4) The test pressure used.
 - (5) Location (footage) of each joint tested.
 - (6) A statement indicating the test results (passed or failed) for each tested.

2738.03.04 Grouting Joints, Defects, and Service Connections

- (a) At the direction of the County, the Contractor shall be required to grout any or all pipe joints, defects, breaks, holes and other sources of possible ground water infiltration, and service connections within a sewer line as may be observed or recorded by television inspection in existing sanitary sewers of the size stated in the Bid Schedule, and as described herein. In addition thereto, the Contractor shall be required to seal any or all pipe joints, service connections, defects, breaks, or other portions of a sewer line, as directed by the County. Any joint, service connection, or defect that is sealed shall subsequently be tested by air testing procedures described herein. Costs related to the air test following the sealing will not be measured for payment nor constitute additional cost to the Contract Price, and shall be considered as incidental to the Contract.
- (b) Before the commencement of work, the Contractor shall provide a test demonstration of the fluid pumping equipment. The readings shall be accurate within ± 0.1 gal of chemical pumped or else the Contractor shall repair or adjust the equipment.
- (c) All pipe joints, service connections, and defects directed to be grouted shall be sealed by internal chemical grouting. The method used shall not damage, break, move or cause settlement of sewer pipe or manhole structures, and shall be such that the original cross-sectional area and shape of the interior of the sewer shall not be permanently reduced or changed. Any sewer that the County may deem damaged as a result of the Contractor's operations shall be promptly repaired to the County's satisfaction at no expense to the County.
- (d) Sealing materials that set to a hard, rigid product capable of intrusion into the sewer line will not be acceptable. Areas of severely broken, crushed, eroded, misaligned, or otherwise damaged pipe or manholes which require excavation and replacement will be repaired within this Contract; or their exact location shall be determined and recorded by the Contractor during the conduct of the work.
- (e) If roots were detected during the Contractor's pre-construction CCTV inspection, these roots shall be removed immediately prior to any grouting operations. Cost related thereto will not be measured for payment nor constitute additional cost to the Contract Price, and shall be considered as incidental to the Contract. Roots must be cut. Foaming is not permitted.
- (f) Once the grout sealing is complete, the Contractor shall view each finished seal with a pan and tilt camera as the joint or service connection is put back into operation. The Contractor shall verify that the grout does not obstruct the flow through the pipe, service connection, or lateral. The Contractor shall correct this blockage at no cost to the County.
- (g) Application of Chemical Grout
 - (1) Each time a new batch of grout chemicals is mixed, the gel time shall be measured and recorded. A small quantity of the chemicals shall be taken from the ends of the packer hose and mixed in a paper cup and witnessed by the County. The gel time shall also be measured and recorded at the

end of a shift. The gel time should be within the range specified by the manufacturer. If the grout does not gel per the manufacturer's recommendations, the Contractor shall discard the batch and create a new batch at the Contractor's expense.

- (2) Jetting or driving pipes from the surface that could damage or cause undermining to the pipelines, will not be allowed. Excavating the pipe, which would disrupt traffic, undermine adjacent utilities and structures, will not be allowed.
- (3) Provide chemical grouting of sewer joints, service connections, leaks, and breaks in the pipe when directed by the County by forcing sealing materials into and through any or all pipe line joints, service connections, leaks or defects from within the sewer pipe. If grouting operations restrict or prevent simultaneous sewage flow passage, the Contractor shall provide an approved plug and/or by-pass pumping system and shall be responsible for damage caused by sewage backup that may occur during the sealing operation. Maximum interruption of existing flows shall be limited to one hour.
- (4) The grouting injection rig shall be positioned over the sewer joint, service connection, leak, or defect in the pipe by means of a closed circuit television camera in the line. Accurate measurement of the location of the joint or service connection to be sealed shall be made, using a portion of the grouting rig as a "Datum" or measurement point. Such measurement or point shall also be used to record measurement of the repaired joint or service connection. A tight seal shall be obtained before the grouting process begins. If a tight seal is not obtained, the Contractor shall remove the equipment and make such adjustments as are required to obtain a tight seal. The chemical sealant shall be pumped into the isolated void area, through hose lines leading from aboveground. The chemical sealants shall be pumped with instant reading, metered flow controlled, positive displacement, proportioning pumps with pressures in excess of ground water pressures.
- (5) The pumping and mixing of the chemical grout material shall be performed in accordance with the manufacturer's recommendations. The void pressure monitoring equipment described herein shall be operating during the sealing operations. The television, grout pumping and air pressure monitoring equipment shall be integrated so that proportions, quantities, and void pressures for materials and sealing can be instantly monitored and regulated in accordance with the type and size of the joint, service connection, and/or break in the pipe or leak.
- (6) In the event that large voids are encountered on the outside of the sewer, including the possibility of "piping" holes to the ground surface which could cause excessive use of grout, a change in operating pressures and pumping rates shall be made as directed by the County. In such instances, changes in operating procedures shall be accomplished by reducing pressures and pumping rates followed by a termination of pumping until a temporary "set" of the gel is obtained on the outside of the pipe. After a

sufficient lapse of time, followed by an increase in pressure, resumption of pumping will occur until a proper seal of the joint or service connection is obtained.

- (7) Upon completion of the injection, the grouting rig shall be moved forward and backward, wiping away the excess grout and allowing the television camera to move to a suitable position for inspection and/or air test. Each joint, service connection, crack, or hole shall then be again air tested as specified hereinbefore. Should any joint, service connection, or defect fail to pass the air test, it shall be resealed and retested until the test requirement can be met. No additional payment shall be made for multiple attempts to seal a joint, service connection, or defect. No payment will be made for grouted joints and/or service connections (sealing plus sealing material) that do not meet test requirements.
- (8) The excess grouting material removed from the joint, service connection, or break by the grouting equipment shall be flushed or pushed forward to the next downstream manhole, removed from the sewer system and disposed of by the Contractor, and as recommended by the chemical grout manufacturer and in accordance with local, State and Federal regulations. In no case shall excess grout material from succeeding sections be allowed to accumulate and be flushed down the sewer.
- (9) The Contractor shall video tape the complete procedure during the sealing operation. The DVDs shall be submitted to the County for review and approval. The DVD shall display the date, manhole numbers, footage to the joint, defect, or service connection and void pressure readout. All data obtained during the sealing operation shall be recorded on the grouting log and submitted to the County. The Contractor shall record the following information on prepared testing logs:
 - i. Date.
 - ii. Location of the service connection tested.
 - iii. The distance of the joint or service connection as measured from the downstream manhole.
 - iv. The test pressure used.
 - v. A statement indicating the test results (passed or failed) for each tested joint or service connection.

2738.03.05 Pipe Joint or Defect Grouting and Testing

(a) Pipe joint and/or defect grouting shall begin with the grouting device in position to isolate the defective joint or defect. The sleeves mounted on the casing of the device shall be pneumatically expanded from the center to both ends. When in an inflated state, two widely spaced annular bladders shall have been formed, each of an elongated shape and producing an annular void around the center portion of the casing. The pneumatically expanded sleeves shall seat against the inside periphery

of the pipe in such a way as to form a void area completely isolated from the remainder of the line. The grouting material shall pass throughout one end of the casing and shall be adapted to supply the sealing material, under pressure, to the space at the center of the casing. The amount of chemical grout pumped is based on the number of strokes delivered to each pipe joint or defect. The number of strokes and amount of grout applied shall be recorded on the pipe joint or defect grouting log.

- (b) The gel time is typically between 20 and 40 seconds.
- (c) For successful sealing, the grout is pumped to refusal while under continual pressure. Refusal, as defined for pipe joint or defect repair, is up to ½ gallon per inch diameter pipe size. If the grout cannot be pumped to less than or equal to refusal, the pumping shall stop and grout staging shall be attempted, as directed by the County.
- (d) Once the joint or defect is sealed, the packer shall be deflated and moved at least one packer length in each direction to remove the extra gel. The grouted joints or defects shall be left reasonably flush with the existing pipe. The packer shall then be repositioned over the joint or defect and another air test shall be performed.
- (e) The air test shall result in a loss of less than or equal to 1 psi in 15 seconds for a successful seal. If the pressure drop is greater than 1 psi in 15 seconds, the joint or defect sealing will have failed and the Contractor shall grout the joint or defect again at no cost to the County.

2738.03.06 Service Connection (Only) Grouting and Testing

- (a) Service connection grouting shall begin with the packer in position to isolate the connection. With the packer remaining in position, chemical sealant is pressure injected into the annular space between the inversion tube and the lateral pipe. Under pressure, the grout material is forced out into the soil through leaking joints, cracks and other defects in the existing connection. The amount of chemical grout pumped is based on the number of strokes delivered to each service connection. The number of strokes and amount of grout applied shall be recorded on the service connection grouting log.
- (b) A gel time of 25 seconds is acceptable when using a low void packer and grouting 4 feet of the lateral from the connection.
- (c) The pump must be able to fill the void with grout before the grout begins to gel. After the void is filled, the pump shall maintain a back pressure of 8 psi into the void at the mainline level. Once the drop in pressure from 8 to 6 psi takes longer than 20 seconds after the pumping stops, the grouting will be considered complete.
- (d) If the effective quantity of grout required to fill the void exceeds 1 gallon/foot of sealing distance plus 3 gallons, it will be assumed that there are large voids on the outside of the pipe. In this case, grout staging shall be attempted, as directed by the County, until the refusal pressure of 8 psi is reached. If the grout consumption is too high, the County may call for an alternate sealing method.

- (e) Any extra grout shall be removed after the sealing operation and the service connection and lateral shall be left flush with the existing pipes.
- (f) Upon completion of the grout process, each service connection shall be air tested to verify the sealing of the connection. Air pressure shall be applied to the isolated void and recorded, and the pressure shall be recorded again after 15 seconds. If the void pressure drop is greater than 2 psi, the service connection will be considered to have failed the air test and shall be grouted a second time at no cost to the County.
- **2738.03.07 Monitoring Operations.** Shall be in compliance with Specification Section 2742, Television Inspection.
- **2738.03.08 Photographs.** Furnish all equipment and film required to take digital photographs of the views which appear on the monitor. In the course of the inspection, the County will indicate the specific views which are to be photographed as a permanent record.

2738.03.09 Records

- (a) For each section of sewer or service connection grouted, complete, accurate and legible records of the grouting operations shall be kept by the Contractor, and copies in triplicate furnished to the County. A representative of the County shall be present during testing and sealing operations.
- (b) These records shall show the location of each operation or point of information relative to the centerline distance from adjacent manholes clearly defined. Measurement of location shall be readable at ground level by means of a measuring device. Marking on cable or the like will not be allowed. As each repair is accomplished, notations shall be made on the pertinent location record showing the amount of grout solution used, and any other pertinent information relative to the repair or as directed by the County.
- **2738.03.10 Obstructions.** Obstructions may be encountered during the course of the sealing operations that prevent the travel of the packer and camera. Should an obstruction not be passable, the Contractor shall withdraw the equipment and begin sealing operations from the opposite end of the sewer reach.
 - (a) Should additional obstructions be encountered after the equipment is reset and no means are available for passing the obstructions without damage to the equipment, these locations shall be noted and corrected by the Contractor as directed by the County in accordance with the bid items. Passing material from section to section which could be detrimental to pumping equipment or cause accumulations in wet wells will not be permitted. An approved dam, weir or screening device shall be constructed in the downstream manhole in such a manner that construction debris and solids will be trapped, retained and removed from the sewer.

2738.03.11 Quality Assurance

(a) All sealing/grouting performed shall be guaranteed against faulty workmanship and/or materials for a period of one year after the completion and acceptance of the project.

- (b) Prior to the expiration of the guarantee period, an initial retest area consisting of specific line segments or service connections may be selected by the County. Line segments or service connections to be retested shall be randomly selected throughout the project area and shall be representative of the majority of the sealing work originally performed. The initial test area shall consist of at least 5%, but not exceed 10%, of the number of joints, defects, and/or service connections in the original project.
- (c) At the County's option, within the initial retest area, the Contractor shall retest all previously sealed joints, defects, or service connections as specified. Any joints, defects, or service connections failing the retest shall be resealed. If the failure rate of the retested joints, defects, or service connections is less than 5% of the joints retested, the work shall be considered satisfactory and no further retesting will be required. Payment for retesting the initial area shall be at the unit price bid for each item of work required (e.g.: cleaning, TV inspection, testing, etc.). No compensation shall be provided for resealing (grouting) joints, defects, or service connections that fail.
- (d) If, in the initial retest area, the failure rate of the retested joints, defects, or service connections exceeds 5% of the joints, defects, or service connections retested, an additional retest area of equivalent size shall be selected and all previously sealed joints, defects, and/or service connections shall be retested. This additional retesting and sealing, if necessary, will continue until a failure rate of less than 5% is met. Any additional testing/sealing required beyond the initial retest area shall be accomplished at no cost to the County.

2738.04 MEASUREMENT AND PAYMENT

- 2738.04.01 Air Testing Joints. Shall be measured in place per each joint tested, per pipe diameter.
 - (a) **Basis of Payment.** Joint testing will be paid on a per joint basis for the initial test. Any joint testing performed in association with verifying joint sealing shall be incidental to the joint sealing work. The unit price includes all labor, incidentals, materials, resident notification, flow control, preconstruction video taping, confined space entry and equipment, sediment, debris, mineral deposits, grease, and root removal, chemical root treatment, traffic control, cleaning, television inspection, required testing, necessary permits, site cleanup, and all other work, not included under other items, necessary to complete the joint testing as specified.
- **2738.04.02** Test and Chemically Grout Defects. Shall be measured on the volume, in gallons, of grout pumped for each defect, including joints, and shall include air verification testing, in accordance with the Contract Documents and this Section.
 - (a) **Basis of Payment.** Payment shall be made at the contract unit price bid per gallon of grout pumped for each defect, including joints, and shall include air verification testing. The unit price includes all labor, incidentals, materials, setups, flow control, sediment, debris, mineral deposits, grease, and root removal, cleaning of main lines, chemical root treatment, confined space entry and equipment, dewatering, traffic control, pre- and post-cleaning and television inspection, sealing, necessary permits, testing, verification testing, and all other work, not

included under other items, necessary to complete the sealing and testing as specified. No additional payment shall be made for verification testing of any defects. This cost shall be included in the sealing of defects.

- **2738.04.03 Test and Chemically Grout Service Connections and First Joint Section.** Shall be measured on the volume, in gallons, of grout pumped for each service connection, including the first joint section, and shall include air verification testing, in accordance with the Contract Documents and this Section.
 - (a) **Basis of Payment.** Payment shall be made at the contract unit price bid per gallon of grout pumped for each service connection, including the first joint section, and shall include air verification testing. The unit price includes all labor, incidentals, materials, setups, flow control, sediment, debris, mineral deposits, grease, and root removal, cleaning of main lines and service connections, chemical root treatment, confined space entry and equipment, dewatering, traffic control, pre- and post-cleaning and television inspection, sealing, necessary permits, initial air testing, verification testing, and all other work, not included under other items, necessary to complete the sealing and testing as specified. No additional payment shall be made for verification testing of any joints and/or service connections.
- **2738.04.04 Air Test Service Connections and First Joint Section.** Shall be measured in place per each service connection, including the first joint section, tested in accordance with the Contract Documents and this Section.
 - (b) **Basis of Payment.** Payment shall be made at the contract unit price bid per service connection, including the first joint section, tested. Any service connection or joint testing performed in association with verifying service connection sealing shall be incidental to the service connection sealing work. The unit price includes all labor, incidentals, materials, setups, flow control, sediment, debris, mineral deposits, grease, and root removal, cleaning of main lines and service connections, chemical root treatment, confined space entry and equipment, dewatering, traffic control, pre- and post-cleaning and television inspection, necessary permits, initial air testing, verification testing, and all other work, not included under other items, necessary to complete the testing as specified.

END OF SECTION

SECTION 2740

FLOW CONTROL

2740.01 DESCRIPTION

- **2740.01.01 Reference.** All applicable requirements of other portions of the Contract Documents apply to the Work of this Section.
- **2740.01.02 Description of Work.** The Contractor shall furnish all labor, materials, equipment and supplies, and shall perform all work related to the control and accurate measurement of sewage flow. The Contractor shall provide (as necessary) all pumps, piping, flow meters, storage containers/vehicles and other equipment necessary to accomplish bypass pumping and/or pump-and-haul activities as stated in this specification; perform all construction; obtain all permits; pay all costs; and perform complete restoration of all existing facilities and areas disturbed to conditions equal to or better than pre-construction conditions and to the satisfaction of the County. Flow control, routing, and/or hauling methods shall be subject to review by the County prior to work commencing on each portion of the system.

2740.01.03 General.

- (a) When the depth of flow in the sewer line being televised or repaired is above the maximum allowable for the proposed work (as specified in Section 2742), then the Contractor shall reduce the flow to the levels specified by manual operation of pump stations, plugging or blocking of the flow or by pumping and bypassing of the flow as acceptable to the County. Plugging or blocking of the flow shall only be allowed when the Contractor can demonstrate that the upstream gravity collection system can accommodate the surcharging without any adverse impact to the collection system or private property.
- (b) The depth of flow in the sewer line being televised or repaired shall not exceed that shown below for the operations indicated. Television inspection shall be performed as specified in section 2742 Television Inspection.
 - (1) **Television Inspection Before and After Lining Installation.** Refer to Section 2742.
 - (2) **Pipe Lining Installation.** For the pipe lining installation the sewer line shall be blocked completely. No flow or flow depth, except infiltration, will be allowed through the sewer line. Infiltration shall be addressed as specified in the Contract Documents and on the Drawings.
- (c) Violations from sewage spills shall be the sole responsibility of the Contractor and must be reported to the County Inspector, the Baltimore County Bureau of Utilities, and Maryland Department of the Environment. Contractor must complete and submit to the County Inspector an Incident

Report, which is included in this section. The "Basement - Sewage Backup Report" shall be used for basement back-ups. The "Telephone Sewage Overflow Report" shall be used for all other back-ups, stoppages, and/or overflows.

- (d) The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction.
- (e) As part of flow control plans, the Contractor shall be responsible to notify sewer customers where that service will be disturbed for each segment of rehabilitation and replacement. The Contractor shall advise the customers by written notice that service will be interrupted. Service shall promptly be restored and will not be shut off for extended periods of time.
- **2740.01.04 Submittals.** The Contractor shall submit to the County a detailed plan and description outlining all provisions and precautions that the Contractor shall take regarding the handling of wastewater flows during sewer rehabilitation. The plan shall be submitted to the County for review and approval at least 7 days prior to commencing work on each portion of the system to be rehabilitated. Flow control includes, but is not limited to, plugging, bypass pumping or trucking as deemed appropriate for the work performed. The plan must be specific and complete, and shall include, but not be limited to, the following details:
 - (a) Schedule for installation and maintenance of bypass pumping system.
 - (b) Staging areas for pumps and site access point(s), including design plans and computation for access to bypass pumping locations. Contractor shall indicate locations on the drawings.
 - (c) Bypass pump sizes, including calculations to validate size selected, capacity, number of each size to be on site, and power requirements.
 - (d) Unless otherwise noted in the construction documents, the bypass shall be sized for **1.5** times the maximum calculated capacity of the pipe for pipes 10" in diameter and greater.
 - (e) Calculations of static lift, friction losses, and flow velocity (pump curves showing pump operating range shall be submitted).
 - (f) Road crossing details, where applicable.
 - (g) Sewer plugging methods, type of plugs, and bypass time duration for each sewer section.
 - (h) Size, number, length, material, location and method of installation for suction and discharge piping.
 - (i) Product information on the flow meter to be used for measurement of bypass flows.

- (j) Sections showing suction and discharge pipe depth.
- (k) Method of noise control for each pump and/or generator.
- (I) Standby power generator size and location.
- (m) Downstream discharging plan.
- (n) Methods of protecting discharge manholes or structures from erosion and damage.
- (0) Restraining lengths for piping. Thrust blocks will not be allowed as a method of restraint for bypass pumping systems.
- (**p**) Temporary pipe supports and anchoring required.
- (q) Location of fuel tank(s) and other potential contaminants.
- (**r**) Reliability methods including float switches, visual and audible alarms, and pump controls.
- (s) Overflow Prevention, Contaminant and Cleanup Plan.
- (t) Procedures to monitor upstream mains for backup impacts.
- (u) Procedures for setup and breakdown of pumping operations.
- (v) Emergency plan detailing procedures to be followed in event of pump failures, sewer overflows, service backups, and sewer spillage. Maintain a copy of this emergency plan on site for the duration of the project.

2740.02 MATERIALS

- 2740.02.01 General.
 - (a) The Contractor shall provide the necessary operating controls for each pump.
 - (b) The Contractor shall provide either bypass redundancy for the largest pump or a minimum of 50% pump capacity of the total required flow within the system, whichever is greater with respect to flow volume. The intent of the redundant pump capacity is to ensure adequate back-up pumps are immediately available to the system. Back-up pumps shall be on-line, isolated from the primary system by a valve. Keep and maintain spare parts for pumps and piping on site, as required. Maintain adequate hoisting equipment and accessories on site for each pump.
 - (c) Pumps shall be fully automatic, self-priming units that do not require the use of foot valves or vacuum pumps in the priming system. The pumps shall also be electric or diesel powered and constructed to allow dry

running for long periods of time to accommodate the cyclical nature of effluent flows.

- (d) Discharge Piping. In order to prevent the accidental spillage of sewage, all discharge systems shall be temporarily constructed of rigid pipe with positive, restrained joints. Only materials that withstand pressures greater than the peak bypass system pressures, as determined according to flow calculations and system operating calculations, may be used. All materials shall be suitable for contact with domestic sanitary sewage. Under no circumstances will aluminum "irrigation" type piping or glued PVC pipe be allowed. Discharge hose will only be allowed in short sections and by specific permission from the County. The bypass pumping system shall be 100% watertight. The Contractor shall perform leakage and pressure tests on discharge piping using clean water, before operation.
- (e) Bypassed flows shall be discharged to the sanitary sewer system, trucked using appropriate watertight vehicles or watertight containers, or otherwise handled to prevent flows from interfering with the work to be performed on that portion of the system.
- (f) All bypassed flow will be measured using a calibrated flow meter installed on the bypass discharge.

2740.03 CONSTRUCTION REQUIREMENTS

2740.03.01 **Preparation.**

- (a) The Contractor is responsible for locating any existing utilities in the area where the Contractor selects to locate the bypass pipelines. The Contractor shall locate his bypass pipelines to minimize any disturbance to existing utilities and shall obtain approval of the pipeline locations from the County and affected utility agencies. All cost associated with relocating utilities and obtaining all approvals are considered incidental and shall be paid by the Contractor.
- (b) When working inside a manhole or force main, the Contractor shall exercise caution and comply with OSHA requirements when working in the presence of sewer gases, combustible or oxygen-deficient atmospheres, and confined spaces.
- (c) The Contractor is responsible for obtaining any approvals for placement of the temporary pipeline within public ways from the Maryland State Highway Administration and Baltimore County.
- (d) Transport, deliver, handle, and store pipe, fittings, pumps, ancillary equipment and materials to prevent damage and following the manufacturer's recommendations. Inspect all material and equipment for proper operation before initiating work.

- (e) Material found to be defective or damaged due to the manufacturer or shipment shall be repaired or replaced, as recommended by the manufacturer, at no cost to the County.
- (f) Remove manhole sections or make connections to existing sewer and construct temporary bypass pumping structures as required to provide adequate suction conduit.
- **2740.03.02 Plugging and Blocking.** Plugging or blocking of sewage flows shall incorporate a primary and secondary plugging device. Sewer line plugs shall be inserted into the line upstream of the section being televised or repaired. The plugs shall be so designed that all or any portion of the upstream flow can be released. During the television inspections and repair operations, the flow through the line being worked on shall be reduced to within the maximum limits stated in this specification section. When plugging or blocking is no longer needed for performance and acceptance of work, remove in a manner that permits the sewage flow to slowly return to normal without surge, to prevent surcharging or causing other major disturbances downstream.

2740.03.03 Pumping and Bypassing.

- (a) When pumping and bypass pumping is required, the Contractor shall supply all necessary pumps, conduits, engines, and other equipment to divert the flow around the pipe section in which work is to be performed. This includes calibrated flow meters for reliable and accurate measurement and recording of bypassed flow. The contractor shall calculate the maximum carrying capacity of the system to be rehabilitated, at the diameters and slopes provided on the Contract Drawings. The Contractor shall have backup equipment available should the primary system fail, and the pumping/bypass system shall be adequate in size to handle the existing peak use flows and additional flows that occur with rainstorms or snowmelt events.
- (b) The Contractor shall be responsible for furnishing the necessary labor and supervision to set up, maintain, and operate the pumping and bypassing system at all times. Pumps and equipment shall be continuously monitored by the Contractor during the periods that pumping and bypassing are required. If pumping is required on a 24-hour basis, engines shall be equipped in a manner to keep noise to a minimum, as specified in the paragraph below.
- (c) The Contractor shall select pumping/bypassing equipment that will not have excessive noise levels and shall be restricted to a maximum of sixty-nine (69 dB) at a distance of 30-feet.
- (d) Unless otherwise approved by the County in writing, the bypass system shall remain in place until all pipeline, manholes, and lateral replacement and/or rehabilitation have been complete and tested. If tasks are not complete as per the Contract Documents, full compensation will not be received for that respective task. The County will not incur costs for remobilization of the bypass system due to Work deemed unacceptable.

2740.03.04 Flow Control Precautions

- (a) When flow in a sewer line is plugged, blocked or bypassed by the Contractor, he shall take sufficient precautions to protect the public health and to protect the sewer lines from damage that might result from sewer surcharging. Further, the Contractor shall take precautions to insure that sewer flow control operations do not cause flooding or damage to public or private property being served by the sewers involved. The Contractor shall be responsible for any damage resulting from his flow control operations.
- (b) When flow in a sewer line is plugged or blocked by the Contractor, he shall monitor the conditions upstream of the plugs and shall be prepared to immediately start bypass pumping, if needed. Any liquid or solid matter which is bypass pumped from the sewer collection system shall be discharged to another sewer manhole or appropriate vehicle or container only. No such liquid or solid matter shall be allowed to be discharged, stored or deposited on the ground, swale, road, stormwater drainage system or open environment. The Contractor shall protect all pumps, conduit and other equipment used for bypass from traffic, vandalism, or other possible sources of damage.
- (c) Should any liquid or solid matter from the sewer collection system be spilled, discharged, leaked or otherwise deposited to the open environment or private property, including but not limited to basements, as a result of the Contractor's flow control operations, he shall be responsible for all cleanup and disinfection of the affected area and all associated costs, including any fines or penalties resulting from the discharge. The Contractor shall also be responsible for notifying the sewer system operating personnel and appropriate regulatory agencies and performing all required cleanup operations at no additional cost to the County. Any sewer spills shall be reported within 24 hours to the Baltimore County Bureau of Utilities (at 410-887-7415) and to MDE (at 410-537-3510 during working hours and 866-633-4686 after hours and on weekends) and an Incident Report shall be completed and provided to the County Inspector.

2740.04 MEASUREMENT AND PAYMENT

- **2740.04.01** Flow Control for Typical Rehabilitation and Replacement Projects. This item will not be measured for payment.
 - (a) **Basis of Payment.** Payment for flow control will be considered incidental and the cost for flow control shall be included in the prices bid for items in the proposal and as defined in these Specifications.
- **2740.04.02** Ancillary Flow Control, in excess of 1 MGD. Measurement for payment will be the actual maximum flow rate of bypass sewage flow pumped as measured and recorded with a calibrated flow meter on the bypass setup discharge pipe. This item will be paid for sewer flow control activities for measured bypass sewage flows

greater than 1 MGD (amount less is considered incidental and no separate payment is made) as required to complete the sewer system work covered in this contract.

(a) **Basis of Payment.**

(1) Bypass Setup and Operation. The bypass setup and operation will be paid at the contract bid price per setup following verification of the actual measured bypass flow. This price includes full compensation provided for all labor, materials, equipment, tools and incidentals for pump setup, operation, maintenance. flow meter calibration/installation/maintenance/recording, plugging, pumping, and diversion of sewage flow from sewer pipelines for all bypass pumping performed. The maximum flow capacity of each bypass setup shall be calculated as described in Section 2740.03.03.a and approved by the County prior to the start of work. Hauling routes and discharge locations for pump and haul activities (if utilized) shall also be coordinated with the County. The bid price per setup shall include, but not be limited to, development of flow control and bypassing plan, all setup and installation measures, pumps, flow metering, gasoline/diesel fuel, all necessary bypass and service piping, pump and haul equipment/vehicles, confined space, inserting and removing pipe plugs, constructing bulkheads, complete operation and maintenance of a fully functional and operation flow control system, and all additional requirements for installing/setting up, operating and maintaining the required flow control system.

END OF SECTION

E-mai	DEPARTMENT OF F	PUBLIC WO	GE BACKUP RE	PORT
DATE	RESPONSIBLE PARTY	(
AREA	_ SEWER LINE SEGMENT(S) ID _			M/L _ Lateral County
OWNER/RESIDENT			PHONE #1 _	
ADDRESS		ZIP	PHONE #2	<u></u>
CLAIM INFORMATION PROVI	DED?			
DESCRIBE DAMAGE TO BAS	EMENT (PICTURES REQUIRED)			
	: Cleaning Debris [Unknown Other	Defective Pipe]Offset Joints □Lining O	peration (Contractor)
	Baltimore County Prope			
	POSAL: Trash San			
TIME STARTED BASEMENT	FINISHED BAS	EMENT		
OTHER PROPERTIES/ADDRE	SSES AFFECTED			
REMARKS:				
GALLON CALCULATION:	LENGTH(FT)	X WIDTH	(FT) X DEPTH	(NOTE: 1" =
	.083) X 7.48 = #	# GALLONS		
REPORT PREPARED BY:				
PRINT NAME		SIGNATURE		

SEWAGE OVERFLOW REPORT

BALTIMORE COUNTY BUREAU OF UTILITIES

OVERFLOW Location – FULL address		
Manhole(s) # or Segment(s):		
Zip Code:		
Estimated Overflow of Gallons:	SSA:	
Name and Type of Facility: MH / Pipe / Force Main / PS / WWTP		
Cause of Overflow:		
Date Overflow Occurred:	Time Started:	Time Stopped:
Ongoing or Repaired:	Duration:	
Correction:		
Type of Clean up or Mitigation:		
Additional Comments:		
Contractor's Contact Name:		
Contractor's Contact Number:		
Contractor's Signature		
Contractor's Signature: Date:		
Inspector's Name:		
Inspector's Contact Number:		
Inspector's Signature:		Date:

SECTION 2741

SEWER LINE, LATERAL, AND MANHOLE CLEANING

2741.01 DESCRIPTION

- **2741.01.01 Reference.** All applicable requirements of other portions of the Contract Documents apply to the Work of this Section.
- **2741.01.02 Description of Work.** The work covered by this section consists of providing all labor, equipment, material and supplies and performing all operations required to clean sewer lines, laterals and manholes prior to the internal television inspection(s) and repair operations.
- **2741.01.03** Sewer Line and Lateral Cleaning. The intent of sewer line cleaning is to remove foreign materials (sediment, grease, broken pipe, roots, etc.) from the pipes, laterals, and manholes to prepare the lines for television inspection and repair operations. Since the success of other phases of work depends a great deal on the cleanliness of the lines, the importance of this phase of the operation is emphasized. It is recognized that there are some conditions such as broken pipe and major blockages that prevent cleaning from being accomplished or where additional damage would result if cleaning were attempted or continued. Should such conditions be encountered, the Contractor shall immediately coordinate with the County to determine the necessary course of action.
 - (a) Light cleaning is defined as the removal of debris from a sewer system, using up to three passes with approved cleaning equipment, with minimal or no material removal upon the completion of the three passes. Light cleaning typically requires the use of hydraulic high pressure sewer cleaners.
 - (b) Heavy sewer cleaning is defined as cleaning required, in addition to the light cleaning, to remove large amounts of debris from a sewer system. Debris can include excessive grease, large stones, bricks, and heavy root growth from trees. Heavy cleaning typically requires the use of bucket machines and mechanical cleaning equipment such as scrapers, scooters, heavy duty brushes, metal pigs and other approved debris removing equipment.
- 2741.01.04 Manhole Cleaning. All concrete and masonry surfaces must be clean prior to repair. Grease, laitance, loose bricks, mortar, unsound concrete, wall mounted steps (cut flush with wall), and other materials must be completely removed. Water blasting (minimum 1200 psi) utilizing proper nozzles shall be the primary method of cleaning; however, other methods such as wet or dry sandblasting, acid wash, concrete cleaners, degreasers or mechanical means may be required to properly clean the surface. Surfaces on which these other methods are used shall be thoroughly rinsed, scrubbed, and neutralized to remove cleaning agents and their reactant products.

- 2741.01.05 Satisfactory precautions shall be taken to protect the sewer lines and laterals from damage that might be inflicted by the improper use of cleaning equipment. Sewers, including service laterals, damaged as a result of the Contractor's or his subcontractor's improper operations shall be promptly repaired by the Contractor at no cost to the County.
- 2741.01.06 Submittals. The Contractor shall submit a disposal plan for review and acceptance by the County prior to beginning any work that may generate waste materials. A plan shall be submitted for each job order. The plan shall include a complete description of the materials that are expected to be encountered and their proposed disposal site(s). The Contractor may change his disposal plan only by written notice to the County. The acceptance of a plan and/or any related notice to the County must be evidenced by a written response from the County. The Contractor shall insure that all permits related to his disposal operations have been obtained, and the Contractor shall comply with all requirements of those permits. The Contractor shall show evidence that all required permits have been obtained for all disposal sites by submitting a copy of all such permits to the County as part of the Contractor's disposal plan. The Contractor shall also submit copies of records of all disposals of solids or semisolids resulting from cleaning operations. Expenses related to the disposal plan and related disposal activities, including debris disposal, shall be considered incidental and included in the cost of the project.

2741.02 MATERIALS

2741.02.01 General. The Contractor shall certify that backup equipment is available and can be delivered to the site within 24 hours.

2741.02.02 Cleaning Equipment

- (a) It is at the Contractor's discretion which type of equipment shall be used for cleaning of the manholes, mainline sewers, and service laterals. However, the equipment may be subject to approval by the County.
- **(b)** The Contractor shall provide all equipment necessary for proper rodding, bucketing, brushing, root cutting and flushing of the sewers in the sizes indicated in the Bid Schedule. When selecting the appropriate cleaning equipment, the Contractor shall note the condition and ovality of the pipe based on available data, including the Contract Plans and existing television inspection data. The Contractor shall note the dates of the television inspections and make reasonable assumptions about deterioration and root growth/intrusion in the line since the inspections. The County will not accept responsibility, nor incur additional costs for reasonable deterioration or root growth/intrusion in the line. The equipment used for cleaning shall be that of a heavy duty power rodding machine which is capable of rodding distances of up to 1,000 feet in one setup. It shall have the ability to spin the rod either clockwise or counterclockwise, be able to be pushed straight out or pulled back without rotating the machine. It shall also be capable of pulling pipe-size swabs or brushes back through the pipeline for cleaning and flushing purposes.
- (c) The Contractor shall also provide heavy-duty bucket machines, as necessary, for use on dragline work to clean the pipeline with buckets,

brushes, scrapers, swabs or other similar devices in order to effectively remove the debris and provide a clean sewer for the inspection. Machines shall be belt operated or have an overload device. Machines with direct drive that could cause damage to the pipe will not be allowed. The equipment used will be subject to approval by the County.

- (d) Hydraulic high-pressure sewer cleaners used for sanitary sewer cleaning shall be specifically designed and constructed for such cleaning. The sewer cleaner shall have a minimum usable water capacity of 600 gallons and a pump capable of delivering at least 30 gallons per minute (gpm) at 100 psi. Pressure to the nozzle shall be regulated by a relief valve adjustable from 1-1500 psi minimum. The equipment will be subject to approval by the County.
- (e) 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.
- (f) Pigging: The hydraulically propelled equipment used shall be 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 cleansed 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, are used, special precautions to prevent flooding of the sewers and public or private property shall be taken.
- (g) All equipment, devices, and tools required for this Contract shall be owned (or leased) and operated by the Contractor.

2741.03 CONSTRUCTION REQUIREMENTS

- 2741.03.01 General.
 - (a) Refer to Section 2731 for Preparatory Procedures.
 - (b) Approval for potable water withdrawn from hydrants must be obtained from the County prior to any cleaning operations. Refer to Section 2731 for additional requirements. The Contractor is responsible for hauling and delivery of all potable water.
 - (c) The designated sewer sections shall be cleaned using hydraulically propelled, high-velocity jet, or mechanically powered equipment. The equipment shall be capable of removing loose scale, tuberculation, oil, remains of old coating materials, accumulations of debris, dirt, grease,

rocks, sand, and other materials and obstructions from the sewer lines, laterals, and manholes. A minimum of three passes of the cleaning equipment shall be required.

- (d) If cleaning of an entire sewer section cannot be successfully performed from one manhole, the equipment shall be set up on the other manhole and cleaning again attempted. If, again, successful cleaning cannot be performed or the equipment fails to traverse the entire manhole section, it will be the responsibility of the Contractor to provide CCTV evidence to the County for further instruction. If successful cleaning cannot be performed then supplemental heavy cleaning may be required upon approval by the County.
- (e) Cleaning shall be performed immediately before in-situ repair or lining of the sanitary sewer line, manhole, and/or lateral. If deemed necessary by the County, cleaning shall also be performed prior to post-CCTV inspections.
- (f) Existing flows shall not be interrupted for periods longer than one hour. The Contractor shall take necessary precautions to prevent sewage backup and shall be responsible if damage results therefrom. Sewage diverted during cleaning operations shall be returned to the sanitary system and not discharged into the streams, any surface, or storm drain system.
- (g) Debris accumulated during the cleaning operations shall be removed from the sewer and properly disposed of in accordance with the approved disposal plan. Debris shall not be returned to the sanitary system, streams or storm drain system.

2741.03.02 Cleaning Precautions.

- (a) During all cleaning and preparation operations all necessary precautions shall be taken to protect the sewer from damage. During these operations, precautions shall be also taken to insure that no damage is caused to public or private property adjacent to or served by the sewer or its branches. Any damage caused to public or private property as a result of such cleaning and preparation operations shall be restored to preexisting conditions by the Contractor at no additional costs to the County.
- (b) Satisfactory precautions shall be taken in the use of cleaning equipment. When hydraulically propelled cleaning tools (which depend upon water pressure to provide their cleaning force) or tools which retard the flow in the sewer line are used, precautions shall be taken to insure that the water pressure created does not damage or cause flooding of public or private property being served by the sewer. When possible, the flow of sewage in the sewer shall be utilized to provide the necessary pressure for hydraulic cleaning devices. When additional water from fire hydrants is necessary to avoid delay in normal work procedures, the water shall be conserved and not used unnecessarily. Adequate backflow prevention will be required on each fire hydrant, per Section 2731. Access to fire hydrants for the purpose of fire protection shall be maintained at all times.

- (c) Violations from sewage spills shall be the sole responsibility of the Contractor and must be reported to the County Inspector, the Baltimore County Bureau of Utilities, and Maryland Department of the Environment. Contractor must complete and submit to the County Inspector an Incident Report, which is included in this section. The "Basement Sewage Backup Report" shall be used for basement back-ups. The "Telephone Sewage Overflow Report" shall be used for all other back-ups, stoppages, and/or overflows.
- (d) Contractor shall not surcharge the sewer beyond the elevation that could cause overflow of sewage into area waterways, homes, or buildings or onto the ground.
- (e) Sewer damaged, as a result of the Contractor or his subcontractors' improper operations, shall be promptly repaired by the Contractor at no cost to the County.
- (f) Chemical, mechanical, and herbicidal cleaning shall be completed prior to any repair or relining work.
- **2741.03.03 Obstruction Removal.** The line shall be cleared of obstructions such as solids, dropped joints or collapsed pipe that may prevent liner installation. If inspection reveals an obstruction that cannot be removed by conventional remote in-situ sewer cleaning equipment, then a point repair excavation shall be made to remove or repair the obstruction. Point repairs shall be made only after cleaning methods were performed and shall be approved in advance by the County.
- **2741.03.04** Protruding service connections shall be removed prior to liner installation. These connections shall be removed using remote in-situ removal equipment. Point repairs shall be made only after remote protruding service removal methods were attempted and shall be approved in advance by the County.
- **2741.03.05 Root Removal.** Roots shall be removed in all pipe sections, laterals, and manholes where root intrusion is a problem and where authorized by the County. Special attention should be used during the cleaning operation to assure almost complete removal of roots from the joints. Any roots which could prevent the proper seating of the packer or could prevent the proper application of chemical sealants, or could prevent the proper seating and application of liners, shall be removed. Procedures may include, but are not limited to, the use of equipment that can be used and operated remotely, mechanical equipment such as rodding machines, bucket machines and winches using root cutters and porcupine, and equipment such as high-velocity jet cleaners. Contractor shall capture and remove all roots from the line at the downstream manhole.

2741.03.06 Waste Material Removal and Disposal.

(a) All sludge, dirt, sand, rocks, grease, roots, and other solid or semisolid waste material resulting from the cleaning operation shall be removed at the downstream manhole of the section being cleaned. When hydraulic cleaning equipment is used a suitable dam or weir shall be placed in the downstream manhole to trap all such materials. Passing material from pipeline section to pipeline section, which could cause line stoppages,

accumulations of debris in wet wells, or damage pumping equipment, shall not be permitted.

- **(b)** Under no circumstances shall sludge or other debris removed during these operations be dumped or spilled into streets, ditches, storm drains or other sanitary sewers. All solids or semisolids resulting from the cleaning operations shall be removed from the site and disposed of by the Contractor in a legal and sanitary manner, in accordance with the approved disposal plan, as approved by appropriate authorities at the Contractor's cost. In addition to the disposal plan, the Contractor shall furnish copies of disposal records to the County, indicating disposal site, date, amount and a brief description of material disposed. All materials shall be removed from the site no less often than the end of each workday. Under no circumstances will the Contractor be allowed to accumulate debris, etc., on the site of work beyond the stated time, except in totally enclosed containers and as acceptable to the County. The Contractor is advised that he shall not dispose of this material by legal or illegal dumping on private or public property, by sale to others, or any means other than those given above.
- (c) The Contractor shall keep his haul route and work area(s) neat and clean and reasonably free of odor, and shall bear all responsibility for the cleanup of any spill which occurs during the transport of cleaning/surface preparation by-products and the cleanup of any such material which is authorized by or pursuant to this Contract and in accord with applicable law and regulations. The Contractor shall immediately clean up any such spill, or waste. If the Contractor fails to clean up such spill, or waste immediately, the County shall have the right to clean up or arrange for its cleanup and shall charge to the Contractor all costs, including administrative costs and overhead, incurred by the County in connection with such cleanup. The County shall also charge to the Contractor any costs incurred or penalties imposed on the County as a result of any spill, dump or discard. Under no circumstances is this material to be discharged into the waterways or any place other than where authorized to do so by the appropriate authority. The term "Contractor" as used in this section shall include the Contractor's subcontractors and other Contractors.
- (d) The general requirements for vehicles hauling such waste material are as follows: Transport vehicles must be of type(s) approved for this application by the political jurisdictions involved. General requirements are that the vehicles have watertight bodies, that they be properly equipped and fitted with seals and covers to prohibit material spillage or drainage, and that they be cleaned as often as is necessary to prevent deposit of material on roadways. Vehicles must be loaded within legal weight limits and operated safely within all traffic speed regulations.
- (e) The routes used by the Contractor for the conveyance of this material on a regular basis shall be subject to approval by the governing authority having jurisdiction over such routes.

2741.03.07 Acceptance of Cleaning Operation.

- (a) In Support of Pre- and/or Post-Rehabilitation Activities: In support of prerehabilitation activities, sewer line and lateral cleaning shall be deemed acceptable when the pipe is clean enough for installation of the particular rehabilitation method, in accordance with the manufacturer's recommendations and to the satisfaction of the County. If internal sealing is to follow the television survey, particular attention should be given to the adequacy of the cleaning to insure that proper seating of the sealing packer can be achieved. In support of post-rehabilitation activities, acceptance of sewer line cleaning shall be deemed sufficient when the pipe is clean enough for post-CCTV inspections, per Section 2742, and the County's approval.
 - (1) CCTV inspection shall be performed immediately following cleaning of the line and in no case more than 24 hours later. If the television inspection shows the cleaning to be unsatisfactory, the Contractor shall be required to re-clean and re-inspect the sewer line and/or laterals until the cleaning is shown to be satisfactory, at the Contractor's expense.
- (b) Sewer Cleaning Only: Sewer line cleaning shall be accepted when all debris has been removed from the sewer line section.
- (c) In addition, on all sewer lines which have sags or dips, to an extent that the television camera lens becomes submerged for two (2) or more feet during the television inspection, the Contractor shall pull double squeegee and/or sponges through the line in order to remove the water from the dips or sags. Water removal through squeegees and/or sponges shall be performed until the television camera lens will no longer be submerged. This requirement may be waived by the County if the water in which the camera lens is submerged, is clear enough to allow the identification of pipe defects, cracks, holes and location of service connections. The Contractor shall notify the County of any dips or sags in excess of two feet in length.

2741.04 MEASUREMENT AND PAYMENT

- **2741.04.01 Cleaning for Pipes, Laterals, and/or Manholes to be Lined and/or Repaired.** This item will not be measured.
 - (a) **Basis of Payment.** Payment for sewer line, lateral, and manhole cleaning, for the purpose of pre- or post-lining operations, will be included in the prices bid for items in the proposal and as defined in these Specifications.
- 2741.04.02 Cleaning for Laterals to be Rehabilitated. This item will not be measured.
 - (a) **Basis of Payment.** Payment for sewer lateral cleaning, for the purpose of pre- or post-lining operations, lateral grouting, sealing, lining and/or any other lateral rehabilitation work will be included in the prices bid for items in the proposal and as defined in these Specifications.

- **2741.04.03 Supplemental Heavy Cleaning of Main Lines**. The quantity of sewer lines cleaned will be measured in linear feet, of each size range, for the length requiring heavy cleaning, horizontally along the center line of the cleaned pipes. This item will only be measured for payment if identified as a specific bid item and/or if approved by the County on a case-by-case basis.
 - (a) **Basis of Payment.** The payment for supplemental heavy cleaning, including root, obstruction, and grease removal, will be paid at the prices bid per linear foot for the size ranges given, in addition to the unit price quoted for cleaning and video inspection, as approved by the County, when the sewer being cleaned contains sediments and debris accumulations which exceed one-third of the pipe's vertical diameter. The unit price per linear foot will be full compensation for providing for all labor, confined space entry and equipment, traffic control, flow control, materials, equipment, tools, waste material removal and disposal, and incidentals for cleaning of sewer of pipe size 6 to 18 inches. The unit price per linear foot shall also include reconstruction of manholes which are dismantled for access of cleaning equipment, and repair of any damages caused by the dismantling or cleaning equipment.
- **2741.04.04 Supplemental Heavy Cleaning of Laterals**. The quantity of service laterals cleaned will be measured in linear feet, of each size range, from the centerline of the mainline service connection to the centerline of the upstream access structure (i.e. cleanout) horizontally along the center line of the cleaned laterals. This item will only be measured for payment if identified as a specific bid item and/or if approved by the County on a case-by-case basis.
 - (a) **Basis of Payment.** The payment for supplemental heavy cleaning, including root, obstruction, and grease removal, will be paid at the prices bid per linear foot for the size ranges given, in addition to the unit price quoted for cleaning and video inspection, as approved by the County, when the lateral being cleaned contains sediments and debris accumulations which exceed one-third of the pipe's vertical diameter. The unit price per linear foot will be full compensation for providing for all labor, confined space entry and equipment, traffic control, flow control, materials, equipment, tools, waste material removal and disposal, and incidentals for cleaning of laterals 4 to 6 inches.

END OF SECTION

Baltimore County Department of Public Works and Transportation Basement – Sewage Backup Report E-mail completed form with pictures to: utilities@baltimorecountymd.gov				
DATE	RESPONSIBLE PARTY			
AREA	SEWER LINE SEGMENT(S) ID			M/L Lateral County
OWNER/RESIDENT			_PHONE #1	
ADDRESS		ZIP	_ PHONE #2_	
CLAIM INFORMATION PROVID	DED?			
DESCRIBE DAMAGE TO BASE	EMENT (PICTURES REQUIRED)			
CAUSE (Check all that apply)	: Cleaning Debris De			
BASEMENT CLEANED BY:	Baltimore County Propert	y Owner OTHER	NAME (if know	n)
LOCATION OF SEWAGE DISP	OSAL: 🗌 Trash 🗌 Sanita	rry Sewer System 🛛 Unkn	own	
TIME STARTED BASEMENT	FINISHED BASEN	/ENT		
OTHER PROPERTIES/ADDRE	SSES AFFECTED			
REMARKS:				
GALLON CALCULATION:	LENGTH(FT) X (NOTE: 1" = .083) X 7.48 =	(WIDTH(FT) # GALLONS	X DEPTH	
REPORT PREPARED BY:				
PRINT NAME		_SIGNATURE		

SEWAGE OVERFLOW REPORT

BALTIMORE COUNTY BUREAU OF UTILITIES

OVERFLOW Location – FULL address		
Manhole(s) # or Segment(s):		
manneley i of degment(b)		
Zip Code:		
Estimated Overflow of Gallons:	SSA:	
Name and Type of Facility:		
MH / Pipe / Force Main / PS / WWTP		
Cause of Overflow:		
Date Overflow Occurred:	Time Started:	Time Stopped:
Date Overnow Occurred.		
Ongoing or Repaired:	Duration:	
Correction:		
Type of Clean up or Mitigation:		
Additional Comments:		
Contractor's Contact Name:		
contractor's contact Name.		
Contractor's Contact Number:		
Contractor's Signature:		Date:
Inspector's Name:		
Inspector's Contact Number:		
Inspector's Construct		Data
Inspector's Signature:		Date:

SECTION 2742

TELEVISION INSPECTION

2742.01 DESCRIPTION

- **2742.01.01 Reference.** All applicable requirements of other portions of the Contract Documents apply to the Work of this Section.
- **2742.01.02 Description of Work.** The work covered by this section consists of providing all labor, equipment, material and supplies and performing all operations required to conduct the internal closed-circuit television inspection of designated sewer lines, manholes, and/or laterals.

2742.01.03 Submittals.

- (a) Copies of video for each pipeline section inspected, **including video and database**. Videos shall be uploaded to Baltimore County's ftp site.
- (b) Sample of television survey log, CCTV inspection, and equipment list for approval before commencement of work, if requested.
- (c) TV Inspection Log: Each TV Inspection Log shall include all pertinent information for the respective inspection section and shall be submitted to the County, accompanied by the respective inspection video.
- (d) PACP Operator Certification: Prior to initiating CCTV Inspection work associated with condition assessment assignments, the Contractor shall present the County with copies of PACP certifications of operators that will be performing the work.

2742.01.04 Definitions.

- (a) Pre-Installation TV Inspection. Pre-installation TV is a video inspection by the Contractor of sewer lines specified for rehabilitation to confirm cleaning, location of service connections, and constructability of line rehabilitation according to the Specifications.
- (b) Post-Installation TV Inspection. Post-installation TV is a video inspection to determine that rehabilitation and/or replacement of a sanitary sewer main(s), manhole(s), and/or laterals including service connections, as required, has been completed.
- (c) Final Acceptance TV Inspection. Final Acceptance TV is a complete PACP video inspection to determine that all work on a segment of pipe, including rehabilitation and/or replacement of a sanitary sewer main(s), manhole(s), and/or laterals including service connections, as required, has been completed according to the Specifications.

- (d) TV Inspection Log. Information collected and recorded by each TV operator for any TV inspection effort that is submitted to the County. All TV inspection logs shall be submitted in electronic and hard copy format.
- (e) PACP: Pipeline Assessment and Certification Program. A CCTV inspection standardization certification and observation coding system sponsored by the National Association of Sewer Service Companies (NASSCO).
- (f) MACP: Manhole Assessment and Certification Program. A voluntary manhole inspection standardization certification and observation coding system sponsored by NASSCO.
- (g) LACP: Lateral Assessment and Certification Program. A voluntary standardization certification and coding system for defects in laterals, sponsored by NASSCO.

2742.02 MATERIALS

- **2742.02.01 Closed Circuit Television Equipment.** Select and use closed-circuit television equipment that will produce a color video on DVD, flash drive or portable hard drive.
- 2742.02.02 **Pipe Inspection Camera.** Produce a video using a pan-and-tilt, radial viewing, pipe inspection camera that pans ± 275 degrees and rotates 360 degrees. The television camera used for the inspection shall be specifically designed and constructed for such inspection. The camera shall be operative in 100% humidity conditions and shall have either automatic or remote focus and iris control. The camera shall be able to inspect laterals as small as 4-inches, up to 70 feet from the sewer mainline. Use a camera with an accurate footage counter which displays on the monitor the exact distance of the camera (to the nearest tenth of a foot) from the centerline of the starting manhole. Use a camera with camera height adjustment so that the camera lens is always centered at one-half the inside diameter, or higher, in the pipe being televised. Additional lighting may be required to allow a clear picture of the entire periphery of the pipe. A reflector extending at least 10 feet in front of the camera may be required to enhance lighting in dark or large diameter pipes, including black High Density Polyethylene (HDPE) pipe. Operator narration shall follow NASSCO Standards. Vehicles capable of transporting TV equipment and accessing remote easements shall also be provided. The video camera shall be capable of showing the Owner name, Contractor name, date, line size and material, line identification (Owner's manhole numbers at both ends) and ongoing footage counter. The camera, television monitor, and other components of the video system shall be capable of producing picture quality to the satisfaction of the County (minimum 470H-line resolution color video picture); and if unsatisfactory, equipment shall be removed and replaced with adequate equipment. No payment will be made for an unsatisfactory inspection.

2742.02.03 Data Media.

(a) The television inspection software shall be PACP version 7.0 or later, as accepted by the County. The data shall be exported as a PACP

export, including database and media files. Videos will be MPEG4 format. All television inspections shall be uploaded to Baltimore County's ftp site. The submittal shall include the inspection video in mpeg4 format, inspection logs in pdf format, PACP database in version 7.0 or later and observation photos in jpeg format. The submittal shall be equipped with an appropriate software viewer, to be supplied by the Contractor at no additional cost to the County. All programming to accomplish the download shall be borne by the Contractor. Use observation terminology during audio narration consistent with PACP, MACP, and LACP. The video and inspection logs shall be submitted to the County within 10 working days of the inspection. All submittals will become the property of the County.

- (b) So that the County can import data from different contractors, the following steps must be completed:
 - 1) Complete a NASSCO compliant PACP/MACP/LACP inspection utilizing NASSCO certified software.
 - 2) Import the completed inspection database into the NASSCO exchange server. This is a free service provided by NASSCO (410-442-7473). The purpose of the exchange server is to ensure that the completed inspection is PACP/MACP/LACP compliant and to convert the inspection database from a particular vendor's format to a format that can be read by all vendors.
 - 3) Submit the database exported from the exchange server to Baltimore County.
- (c) Filenames. The filenames for the CCTV inspections shall be provided in the following format: Upstream Manhole ID_Downstream Manhole ID_Date. The Date shall be provided in the following format: month day year (mmddyyyy).

2742.03 CONSTRUCTION REQUIREMENTS

2742.03.01 Service Locations. All service locations shall be measured for location prior to liner installation. All service connection measurements and the clockwise position of the openings shall be recorded in a log to aid in the reinstatement of service connections after lining. The approximate locations of identified active service taps are shown on the Contract Drawings; however, the Contractor shall determine the exact location and number of service connections by the dye test method or other methods approved by the County. The Contractor shall accurately field locate existing service connections, whether in service or not. For rehabilitated lines, the Contractor shall use existing service locations to reconnect service lines to new liner, unless otherwise specified on the Contract Drawings or directed by the County. During the line preparation and work operation, inactive sewer house connections shall not be cut but shall be left lined over, unless otherwise directed by the County.

2742.03.02 **Pre-Installation Inspection.**

(a) **Procedure.**

- (1) Where point repairs are identified, the Contractor shall televise the entire sewer line (from manhole to manhole) prior to the point repair work. This inspection shall be used to confirm the location, length, and nature of the defects to be repaired, and to confirm that the point repair is appropriate for the defects observed.
- (2) Perform pre-installation TV inspection immediately after all point repairs and line and/or lateral cleaning and immediately before line and/or lateral rehabilitation work. Pre-installation TV is not required for sewer lines designated as remove and replace from manhole to manhole. Verify that the line and/or lateral is clean and ready to accept the line and/or lateral rehabilitation. Prepare Television Inspection Logs. Maintain copies of CCTV inspections and reports for reference by the County for the duration of the project.
- (3) Prior to any repair work, the entire sewer line (from manhole to manhole) shall be televised. The pre-installation TV inspection shall be used to determine whether the line and/or laterals has been cleaned sufficiently; to confirm the location and nature of defects; and to confirm that the proposed method of repair is proper for the defects observed.
- (4) The camera shall be moved through the line in either direction at a moderate rate, stopping when necessary to permit proper documentation of the sewer's condition. In no case shall the television camera be pulled at a speed greater than 30 feet per minute. Maintain technical quality, sharp focus, and a distortion free picture. Manual winches, power winches, TV cable, and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions shall be used to move the camera through the sewer line.
- (5) The camera shall be placed at the center of manhole and video shall commence before entering the pipe. Show the inside of manhole walls, manhole channel, and pipe connection to wall at both upstream and downstream manhole and lateral connections. For mainlines, the camera shall be mounted on a transport platform that will keep it centered along the longitudinal axis of sewer mainline and above water. Footage for laterals shall commence before entering laterals at connection.
- (6) Use a hydraulic jet nozzle if necessary to remove standing water from the line. Eliminate steam in the line for the duration of the inspection.
- (7) Lateral inspections may be conducted from the main line or an upstream lateral access point, such as a cleanout.

- (8) If, during the inspection operation, the television camera will not pass through the entire pipe section due to blockage or pipe defect, the Contractor shall set up his equipment so that the inspection can be performed from the opposite manhole or access point, at no additional cost to the County. If, again, the camera fails to pass through the entire pipe section, the inspection shall be considered complete and no additional inspection will be required at that time. If a protruding tap impedes a main line inspection, trim protruding tap to ½ inch or less. Improper cleaning will not be a reason for incomplete televising of a line section. If the line is determined impassable, the Contractor shall contact the County to identify subsequent actions.
- (9) When manually operated winches are used to pull the television camera through the line, telephones or other suitable means of communication shall be set up between the two manholes of the section being inspected to insure good communication between members of the crew.
- (10) The importance of accurate distance measurements is emphasized. Measurements for location of defects shall be above ground by means of a meter device. Marking on the cable, or the like, which would require interpolation for depth of manhole, will not be allowed. Accuracy of the distance meter shall be checked by the use of a walking meter, roll-a-tape, or other suitable device. The meter device shall be accurate to tenths of a foot.
- (11) During the internal inspection the television camera shall be temporarily stopped at each defect along the line. The Contractor shall record the nature and location of the defect. Where defects are also active infiltration sources, the rate of infiltration in gallons per minute (gpm) shall be estimated by the Contractor and recorded. The camera shall also be stopped at active service connections where flow is discharging. Flows from service connections which are determined to be infiltration shall also be recorded. The camera shall be stopped at all service connections and identified by footage and clock orientation. All service connections shall be "panned" 360 degrees so that the complete connection to the mainline pipe can be viewed.
- (12) Camera operator shall slowly pan and tilt at beginning and ending manholes and/or access points, each service connection, joints, visible defects and when pipe material transitions from one material to another.
- (13) TV inspection videos shall be continuous for pipe segments between manholes. Any inspection videos received with gaps in the pipe segments or footages will be considered incomplete and will be rejected. Do not leave gaps in the inspection of a segment between manholes and do not show a single segment on more than one inspection video, unless specifically allowed by the County.

(14) Inspections displaying poor video quality (including but not limited to: grease or debris on lens, camera under water, image too dark, washed out, distorted or out of focus, lines improperly cleaned or poor/no audio) shall be re-televised and resubmitted at no cost to the County.

(b) Flow Control.

- (1) Perform flow control as specified in Section 2740, Flow Control, of these Contract Documents.
- (2) Pre- and Post-Installation and Final Acceptance Inspections: Perform survey TV inspection on one pipeline section or lateral at a time. Adequately control the flow in the section being televised. Do not exceed the depth of wastewater flow shown below:

Pipe Diameter	Depth of Flow
(Inches)	(Percent of Pipe Diameter)
4 - 10	5
12 - 24	10
Over 24	15

(3) If during survey TV inspection of a pipeline section, the wastewater flow depth exceeds that specified previously, reduce the flow depth by performing the survey TV inspection during minimum flow hours, by diversion pumping, plugging and/or by pulling a camera with swab, high-velocity jet nozzle or other acceptable dewatering device. A video made while floating the camera is not acceptable unless approved by the County.

(c) Documentation of Television Inspection.

- (1) The Television Inspection shall be documented using a computerized datalogger and reporting system that is NASSCO certified and also PACP, MACP, or LACP certified, respective of the structure being televised.
- (2) Television Inspection Logs: CCTV Inspection logs shall be kept by the Contractor and shall clearly show the location and orientation in relation to an adjacent manhole of each infiltration point observed during inspection. In addition, other points of significance such as locations, orientations, and activity of service connections, building sewers, unusual conditions, roots, storm sewer cross connections, broken pipe, presence of scale and corrosion, and other discernible features shall be recorded and a copy of such records shall be supplied to the County. Logs shall be prepared for the pre- and post-installation and final acceptance TV inspections. This includes any inspections conducted to address repairs made to the new or rehabilitated pipeline section(s).

(3) Video Recordings: The purpose of video recording shall be to supply a visual and audio record of problem areas of the lines that may be replayed. Video recordings shall include an audio track recorded by the inspection technician during the actual inspection work describing the parameters of the line being inspected (i.e. location, depth, diameter, pipe material), as well as describing connections, defects and unusual conditions observed during the inspection. Video recording playback shall be at the same speed that it was recorded. Slow motion or stop-motion playback features may be supplied at the option of the Contractor. Once recorded, the submittal becomes the property of the County. The Contractor shall have all media and necessary playback equipment readily accessible for review by the County during the project.

2742.03.03 Post-Installation TV Inspection.

(a) **Procedure.**

- (1) Post-Installation TV inspection shall be completed and submitted when lining work is complete on a section of line. The Post-Installation TV inspection videos shall be submitted to the County within ten (10) working days of the inspection. If defects are observed during the Post-Installation inspection, the Contractor shall make the repairs as specified herein.
- (2) Follow procedures as specified for pre-installation TV inspection, except as specified below.
- (3) The Post-Installation TV inspection shall be completed by the Contractor in the presence of the County. The Post-Installation TV inspection shall be completed to confirm completion of rehabilitation and replacement work and any repairs, review the location and nature of any defects, and to verify that the rehabilitation work is free of defects and conforms to the requirements of these Specifications. Provide a color CCTV inspection video showing the completed work, including the condition of restored service connections and replaced laterals as specified on the contract drawings and/or required by the County. Prepare and submit Television Inspection Logs providing location of service connections along with location of any discrepancies.
- (4) For Post-Installation TV inspection, exercise the full capabilities of the camera equipment to document the completion of the rehabilitation and replacement work and the conformance of the work to the Specifications. Provide a full 360 degree view of pipe, manhole, joints, service connections, and laterals.
- (5) Digital Photographs: Noted post-rehabilitation defects and lateral connections shall be documented as digital files. Photo logs shall accompany each photo submitted.

(6) Flow Control and Documentation of Television Inspection shall be conducted as specified in paragraph 2742.03.01 of this specification.

2742.03.04 Final Acceptance TV Inspection.

- (a) **Procedure.**
 - (1) Final Acceptance TV inspection shall not be completed until all work, including lateral replacement or rehabilitation, is complete on a section of line. The Final Acceptance TV inspection shall be submitted to the County within ten (10) working days of the inspection via the County's FTP site. If defects are observed during the Final Acceptance inspection, the Contractor shall make the repairs as specified herein. Final Completion will not be given until all defects are repaired, television inspected, and approved by the County.
 - (2) Follow procedures as specified for pre-installation TV inspection, except as specified below.
 - The Final Acceptance TV inspection shall be completed by the (3) Contractor in the presence of the County. The Final Acceptance TV inspection shall be completed to confirm completion of rehabilitation and replacement work and any repairs, review the location and nature of any defects, and to verify that the rehabilitation work is free of defects and conforms to the requirements of these Specifications. Provide a color video inspection showing the completed work, including the condition of manholes, restored service connections, service connection sealing and/or rehabilitation, lateral rehabilitation, and replaced laterals as specified on the contract drawings and/or required by the County. Prepare and submit Television Inspection Logs providing location of service connections along with location of any discrepancies. All manhole work, including benches, inverts and pipe penetrations into manhole, shall be complete prior to Final Acceptance TV work.
 - (4) Length of Final Acceptance TV Inspections: If the entire pipe is being lined, regardless of whether there is other work being performed, the TV inspection shall be the entire length of pipe. If only a point repair is being performed or a segmental liner is being installed, the TV inspection shall be from the closest manhole to just beyond the end of the repair or segmental liner, with the realization that reverse set-up may be needed. If the only work is being performed on the laterals and the pipe is already CIPP lined, the TV inspection shall be the entire length of pipe. If the only work is being performed on the laterals and the pipe is not lined, the TV inspection shall be to the farthest lateral on which work is being performed.

- (5) For Final Acceptance TV inspection, exercise the full capabilities of the camera equipment to document the completion of the rehabilitation and replacement work and the conformance of the work to the Specifications. Provide a full 360 degree view of pipe, manhole, joints, service connections, and laterals.
- (6) Digital Photographs: Noted post-rehabilitation defects and lateral connections shall be documented as digital files. Photo logs shall accompany each photo submitted.
- (7) Flow Control and Documentation of Television Inspection shall be conducted as specified in paragraph 2742.03.01 of this specification.
- (8) Final Acceptance Television inspection results will be accepted by the County when the inspection video in mpeg4 format, inspection logs in pdf format, PACP database in version 7.0 or later and observation photos in jpeg format meet the requirements of this and related specification sections and upon review and approval by the County.

2742.04 MEASUREMENT AND PAYMENT

- 2742.04.01 Pre- or Post-Installation Television Inspection for Pipes, Manholes, and/or Laterals to be Rehabilitated. This item will not be measured.
 - (a) **Basis of Payment.** Payment for television inspection for the purpose of pre- or post-lining operations, will be included in the prices bid for items in the proposal and as defined in these Specifications. Any or all payment may be withheld until the final inspections showing all completed work described have been completed and submitted.
- **2742.04.02 Television Inspection, Without Main/ Lateral Rehabilitation.** The quantity of sewer lines televised will be measured in linear feet, of each size range, from center line of manhole to centerline of manhole for main lines, and service connection to the point of termination for laterals, horizontally along the center line of the televised pipes. Payment will only be made for accepted CCTV inspection footage.
 - (a) **Basis of Payment.** The payment for sewer inspection televising shall be based on the linear feet of pipeline televised as measured in the field at grade, for the size ranges given. The unit price per linear foot will be full compensation for providing for all labor, traffic control, confined space entry and equipment, flow control, materials, equipment, tools and incidentals for inspection televising of sewer of pipe size 4 to 18 inches. Payment will not be made for the following: poor or unacceptable quality videos, re-televising any segment without prior approval of the County, portions of the sewer not televised, linear feet of sewer through which the camera could not pass, and reverse setups required to bracket an obstruction. Payment for television inspection will be considered incidental if completed in coordination with manhole and pipeline rehabilitation, or joint and service connection testing and sealing.

- **2742.04.03** Final Acceptance Television Inspection for Pipes, Manholes, and/or Laterals to be Rehabilitated. The quantity of sewer lines televised will be measured in linear feet, of each size range, from center line of manhole to centerline of manhole for main lines, horizontally along the center line of the televised pipes, except as otherwise defined in Section 2742.03.04 (a) (4). Payment will be at a fixed price per linear foot set by the County. Payment will only be made for CCTV inspection footage reviewed and approved by the County.
 - (a) **Basis of Payment.** The payment for sewer inspection televising shall be based on the linear feet of pipeline televised as measured in the field at grade, for the size ranges given. See 2742.03.04 (a) (4) for the required and payable length for Final Acceptance Television Inspections. The unit price per linear foot will be full compensation for providing for all labor, traffic control, confined space entry and equipment, flow control, materials, equipment, tools and incidentals for inspection televising of sewer of pipe size 6 to 30 inches. Payment will not be made for the following: poor or unacceptable quality inspections, re-televising any segment without prior approval of the County, portions of the sewer not televised, linear feet of sewer through which the camera could not pass, and reverse setups required to bracket an obstruction. Payment will only be made once for each mainline section on which any rehabilitation, replacement, and/or repair work is performed. Payment of this item for a section indicates acceptance by the County of lining and lateral work on that section.

END OF SECTION

SECTION 2744

POINT REPAIRS (EXCAVATE AND REPAIR)

2744.01 DESCRIPTION

- **2744.01.01 Reference.** All applicable requirements of other portions of the Contract Documents apply to the Work of this Section.
- **2744.01.02 Description of Work.** The work covered by this section consists of providing all labor, equipment, material and supplies and performing all operations required to perform the designated point repairs, including the replacement of outside drop connections. This includes supplying all labor, materials, equipment, and apparatus not specifically mentioned herewith or noted on the plans but which are incidental and necessary to complete the work specified.
- **2744.01.03** This Section shall supplement and amend the Baltimore County Department of Public Works and Transportation Standard Specifications and Maryland State Highway Administration Standards.
- **2744.01.04** Point repairs (excavate to make repair) are considered sewer pipe repairs required to repair defective sections of existing sewers when "insitu or in-place" pipe rehabilitation methods cannot successfully repair a defect. Excavation from the surface is required to accomplish the necessary repairs. Generally, the work will require repair of existing pipe sags, offset joints, protruding laterals which cannot be removed internally, removal and replacement of short sections of damaged pipe, sewer house connections and/or any other defects deemed necessary by the County after defects are identified through review of the initial closed-circuit televised (CCTV) inspection.
- **2744.01.05** Sequencing: Lateral repairs, including reconnection/replacement, identified in the contract documents shall be completed prior to rehabilitation of the main sewer line.
- **2744.01.06** Flow control, if required to accomplish the repair, shall be performed as described in the Flow Control Section of these Specifications, Section 2740. The Contractor shall complete point repairs only after determining that it is absolutely necessary and has been approved by the County. The work shall include: verifying the location of the point repair, locating all interfering utilities, providing temporary flow bypassing or control, installing suitable access to the site, permitting, excavating, shoring, dewatering, completing the required pipe repairs or section replacement, backfilling, and surface restoring.
- 2744.01.07 All point repairs discovered through subsequent investigations, and/or directed by the County, shall be completed prior to rehabilitating the pipe by grouting or cured-in-place pipe (CIPP) lining or other method of repair. The defects shall be recorded on DVD and submitted for prior approval by Baltimore County Engineering. Once approved, the exact location of the point repairs will be determined by the Contractor and approved by the County after the pipe is exposed. All work to expose and correct the defects, and the materials and methods used, shall conform to Baltimore County Standards. All point repairs shall be visually inspected and shall be measured by the County prior to backfilling.

- **2744.01.08** The Contractor shall excavate and repair all sections of pipe which are obstructed (after mechanical or jet hose cleaning has been attempted) which prevent the insertion of a liner, as directed or approved by the County. Pipe material for point repairs shall be compatible or adaptable to the existing sewer and meet County Standard Specifications. The County will not accept responsibility, nor incur additional costs for point repairs required as a result of the liner set-up or installation. All repairs shall be as detailed and specified within the contract documents and drawings.
- **2744.01.09** Pavement patches in County roads shall be as per the County Standard Specifications. Pavement patches in SHA roads shall be as per the Maryland State Highway Administration Standards. Final bituminous overlay shall be done by a prequalified contractor with an A2 classification (at time of bid) as approved by the Baltimore County Bureau of Engineering and Construction; temporary paving does not apply.
- **2744.01.010** Point Repairs Identified on the Contract Documents: Point repairs identified prior to rehabilitation and addressed in the Contract Documents will include, to the best extent possible, pertinent information such as main line diameter, approximate depth at manholes, description of line location, the number of points to be repaired, and the location of each point. The depths shown do not necessarily reflect the excavation depth required to make the repair, but are for reference only.
- **2744.01.10** Site Conditions. The Contractor shall conduct operations and shall schedule cleanup in a manner which causes the least possible inconvenience to traffic, pedestrians, and adjacent property owners or tenants.
- 2744.01.11 Submittals. The Contractor shall submit the information listed below
 - (a) Detailed plan, including the location, method, and linear footage of point repairs
 - (**b**) Pipe material and fittings
 - (c) Bedding and backfill material
 - (d) The Contractor shall submit a plan for bypassing or controlling sewage flows around the work area and facilities where sewage flows must be interrupted to complete the work. The plan shall be reviewed by the County and shall be acknowledged as acceptable before any work is started. Bypass Pumping shall be performed in accordance with Section 2740- Flow Control.

2744.02 MATERIALS

- **2744.02.01** Pipe materials used for completing point repairs shall be of the same internal dimensions as the pipe section being repaired and shall be acceptable to the installation conditions.
- **2744.02.02** Repairs shall provide a watertight seal between the existing pipe sections and point repair pipe.

2744.03 CONSTRUCTION REQUIREMENTS

- **2744.03.01 Test Pits.** Test pits should be utilized as determined by the Contractor when point repairs (excavate and repair) are required to locate pipes to be repaired or existing utilities that may be within the influence of the Contractor's construction activities.
- **2744.03.02 Notification.** The Contractor shall notify the County not less than 48 hours in advance of the time he plans to begin point repair work at a particular location within the project area.
 - (a) After the point repair is located and exposed, the County shall inspect the damaged pipe and shall confirm the required repair and methods proposed by the Contractor. Prior to performing the work, the sewer shall be inspected to verify the location of the repair, the requirements of the repair, and the necessity of the repair.
- 2744.03.03 **Repair Method.** The following method will be used to complete the required repair.
 - (a) Remove and Replace Pipe and Fittings: Excavate and remove defective pipe or fittings to the nearest pipe joint, or saw cut a straight line in a pipe section which is perpendicular to the pipe axis to leave a plain end. Prepare a replacement section of replacement pipe with the same internal dimensions as the pipe to be replaced, or as otherwise approved by the County. Make connections using standard joints or couplings. All connections shall be watertight.
- **2744.03.04 Steel Plating.** Any excavation that will be required to convey traffic, or will remain open when the Contractor's forces are not present, shall have steel road-crossing plates installed over the excavation. Plating shall be of suitable size and thickness to accommodate the excavation and installation requirements.
- 2744.03.05 **Backfill.** Backfill, including pipe bedding, shall be placed and compacted as specified in the Baltimore County Department of Public Works and Transportation Standard Specifications. Flow shall be returned into the repaired section prior to placement of backfill.
 - (a) The Contractor shall correct any settlement of backfill which may occur within the warranty period at no cost to the County.

2744.04 MEASUREMENT AND PAYMENT

- **2744.04.01 Point Repairs.** Measurement for payment will be the actual linear footage measured horizontally along the centerline of the trench for the length of the repair of each pipe size, including fittings.
 - (a) **Basis of Payment.** Payment shall be made per linear foot completed. Pricing shall include, but shall not be limited to, the following: all labor and materials, permits, resident notification and access requirements needed, flow control, removal and disposal of existing sewer pipe and unsuitable material, furnishing and placing all pipe, fittings, house connections, and joining materials, unclassified excavation and refill removal, Class 3 Excavation, storage and re-handling of excavated materials, bracing, pipe to manhole connector, No. 6 aggregate bedding, sediment and erosion control, flow control, excavation and shoring, excavation steel plating, traffic control, concrete encasement as necessary, dewatering, all pre- and post-installation CCTV inspection, debris collection and disposal, installation of repair

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and connection materials, fittings, testing, initial and general backfill and compaction, borrow for backfilling as necessary, pavement removal and disposal, roadway repair and site restoration, and all items necessary to successfully complete the point repairs as specified herein or as required to complete the work.

- (b) If this type of repair is not indicated on the Contract Documents but is needed at the time of construction, the Contractor shall notify the County immediately and shall provide the necessary documentation for the County to determine if the repair is required. The costs associated with completing the repair shall be per the contingent item identified in the Contract.
- (c) If a point repair is required as a result of defective work by the Contractor or his subcontractors, this item will not be measured and will be included in the prices bid for items in the proposal.
- 2744.04.02 **Replace Outside Drop Connection.** Measurement for payment will be for each outside drop connection replaced, including fittings, based on the depth the drop connection extends below the existing ground surface.
 - (a) **Basis of Payment.** Payment shall be made per each outside drop connection replaced. Pricing shall include, but shall not be limited to, the following: all labor and materials, permits, resident notification and access requirements needed, flow control, traffic control, removal and disposal of existing sewer drop connection furnishing and placing all pipe, fittings, house and unsuitable material, connections, and joining materials, unclassified excavation and refill removal, Class 3 Excavation, storage and re-handling of excavated materials, bracing, pipe to manhole connector, No. 6 aggregate bedding, sediment and erosion control, excavation and shoring, excavation steel plating, concrete encasement as necessary, dewatering, all pre- and post-installation CCTV inspection, debris collection and disposal, installation of repair and connection materials, fittings, testing, initial and general backfill and compaction, borrow for backfilling as necessary, pavement removal and disposal, site restoration, and all items necessary to successfully complete the point repairs as specified herein or as required to complete the work.
 - (b) If this type of repair is not indicated on the Contract Documents but is needed at the time of construction, the Contractor shall notify the County immediately and shall provide the necessary documentation for the County to determine if the repair is required. The costs associated with completing the repair shall be per the contingent item identified in the Contract.

END OF SECTION

SECTION 2751

SANITARY SEWER HOUSE CONNECTION REINSTATEMENT AND LATERAL REPLACEMENT

2751.01 DESCRIPTION

- **2751.01.01 Reference.** All applicable requirements of other portions of the Contract Documents, including Section 1007 of the Baltimore County Department of Public Works and Transportation Standard Specification for Construction and Materials, apply to the Work of this Section.
- **2751.01.02 Description of Work.** Work included in this Section consists of reconnection/reinstatement of service laterals or connections of new service laterals along a rehabilitated sanitary sewer main. Reinstated service connections and replacement service connections and laterals shall be watertight, constructed in accordance with the County's Standard Specifications and Details, and as specified herein. The Contractor shall perform all required permanent landscape restoration of disturbed areas on private property and within County, State, or City rights-of-way upon completion of the service reconnections, to the satisfaction of the County.
- **2751.01.03** Sequencing. Lateral repairs, including reconnection/replacement, identified in the contract documents shall be completed prior to rehabilitation of the main sewer line. Requirements of this section apply to connection or reconnection of laterals to sewer main lines which have been previously rehabilitated.
- **2751.01.04 Submittals After Notice of Award.** After the Notice of Award, the Contractor shall submit the information listed below for review and approval. The notice to proceed will not be issued until all of the listed information has been reviewed and approved by the County and/or the Engineer.
 - (a) The Contractor shall submit the type of watertight service fitting (wye, saddle wye, inserta tee, etc.) to be installed for the re-establishment of service connections at replaced or new laterals. This information shall also include the type of cutting device used to re-establish the service connection. The County only accepts the shell cutting method for re-establishing service connections. Reciprocal saws shall not be used to re-establish service connections. The Contractor shall provide shop drawings and product data for the reconnection method.
 - (b) The Contractor shall submit a schedule of anticipated duration of service interruptions, for approval by the County.
 - (c) Product Warranty and Certification Form: To insure that all products and materials proposed for use on this project are of the highest quality and specifically designed and manufactured for the intended installation or use, a Product Warranty and Certification Form shall be completed by the fitting manufacturer(s), manufacturer's representative or vendor as well as the (replacement) fitting installer certifying that the product(s) they

are proposing to use is specifically designed for the intended application, installation and/or function. Failure to complete this form may prevent the product(s) from being used on this project.

PRODUCT WARRANTY AND CERTIFICATION FORM

REFERENCE (PROJECT NAME AND CONTRACT NUMBER):_____

THE UNDERSIGNED HEREBY ATTESTS THAT HE HAS EXAMINED ALL THE REFERENCED PROJECT INFORMATION, PROJECT INSTALLATION REQUIREMENTS AND THE CONTRACT SPECIFICATIONS AND HEREBY WARRANTS AND CERTIFIES THAT THE PRODUCTS THAT THEY PROPOSE TO FURNISH, DELIVER AND INSTALL FOR THIS PROJECT MEETS OR EXCEEDS THE REQUIREMENTS OF THESE CONTRACT SPECIFICATIONS, IS SUITABLE FOR THE INTENDED PURPOSE AND INSTALLATION, AND WILL SATISFACTORILY PERFORM TO THE CRITERIA SPECIFIED. THIS WARRANTY SHALL BE IN ADDITION TO, AND NOT IN LIEU OF, ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED.

PRODUCT:_____

MANUFACTURER:_____

Address:

By:____

(Typed Name and Title) (SEAL)

/s/ _____/s/ _____

(Date)

The Product Warranty and Certification must be signed by a Principal Person (President, Vice-President, etc.) of the Product's Manufacturer. In the event the manufacturer is not the Supplier then a Principal Person of the Supplier must <u>also</u> sign this form.

MANUFACTURER'S REPRESENTATIVE/VENDOR:

Address:

By:

(Typed Name and Title) (SEAL)

(Signature)

(Date)

The Product Warranty and Certification must be signed by a Principal Person (President, Vice-President, etc.) of the Installation Contractor. In the event the manufacturer is not the Installation Contractor then a Principal Person of the Installation Contractor must also sign this form.

_____/s/ _____

(Signature)

(Date)

2751.02 MATERIALS.

2751.02.01 Flexible Connectors between Manhole Structures and Pipes or Laterals.

- (a) Pipe to manhole connection shall be sealed with a flexible boot, gasket, or sleeve.
 - (1) When the boot is used, the port shall be cored to the size, shape, surface finish, and location required and not cast in the manhole. Angular adjustments through 20 degrees shall be allowed. The flexible boot shall meet ASTM C923 specifications. The boot shall be secured to the port with an internal aluminum expanding band and to the pipe with a nonmagnetic corrosion resistant steel external band. Boot seal shall be "Kor-N-Seal" as manufactured by Trelleborg Pipe Seals Milford, Inc., or equal.
 - (2) When gasket is used, the gasket shall be a rubber pressed wedge gasket cast into the manhole as manufactured by Press-Seal Gasket Corporation, or equal.
 - (3) When sleeve is used, the sleeve shall be a flexible rubber sleeve cast into the manhole complete with stainless steel strap.
 - i. Pipe to sleeve sealant shall be grouting compound. Grouting compound shall be as manufactured by 3M Company or be an equivalent product having strength properties of 80 psi tensile and 700 percent elongation in accordance with ASTM D3574-81 test E, and linear dimension change shall not exceed 18 percent when subject to wet and dry cycles in accordance with ASTM D1042-51 (1978).
 - ii. Mechanical type pipe to wall sleeve seals shall be "Link-Seal" pipe to wall closures "S-316" model with Type 316 stainless steel bolts, or equal. Seals shall be modular mechanical type, consisting of interlocking synthetic rubber links shaped to fill annular space between pipe and wall opening and shall provide watertight seal between pipe and wall opening.

2751.02.02 Service Connection.

- (a) Unless otherwise noted on Contract Drawings or directed by the County, the service connections shall be 6 inches in diameter.
- (b) Connection of service pipe to rehabilitated pipes shall be made with a watertight connection between the new rehabilitated pipe liner and the new service connection. A watertight connection between the existing "host" pipe and new service connection only is not acceptable.
 - (1) An inserta type tee or PVC saddle wye and gasket with mechanical strap connection shall be used for connection to lined pipes.

(2) The inserta tee shall be sized to accept 6-inch service lines on sewer mains 10-inches and larger in diameter. The PVC saddle wye and gasket shall be sized to accept 6-inch service lines on sewer mains 8-inches and larger in diameter.

2751.02.03 Inserta Tee.

- (a) Use pipe inserta tees on rehabilitated sanitary sewer mains only.
- (b) The inserta tee is comprised of three parts; PVC hub, stainless steel band and rubber boot as manufactured by Fowler Manufacturing Co., Inc.
- (c) PVC hub and rubber boot shall be engineered to accept the wall thickness and internal radius of the pipe. The PVC hub and rubber boot shall not protrude more than $\frac{1}{2}$ inch into the sewer pipe.
- (d) The PVC hub shall be in accordance with ASTM D3034.
- (e) The rubber boot shall be in accordance with ASTM C443.
- (f) All hardware shall be stainless steel in accordance with ASTM F593 and F594.
- (g) The inserta tee shall be sized to accept 6-inch service lines unless indicated otherwise by the Contract Drawings.

2751.02.04 Pipe Saddle Wye (or Tee) and Gasket with Mechanical Strap

- (a) Use the saddle wye (or tee) and gasket with mechanical strap on rehabilitated sanitary sewer mains only.
- (b) Use one-piece prefabricated saddle wye, either PVC or polyethylene, and neoprene gaskets only on rehabilitated sanitary sewer mains. Use ½ inch stainless steel bands for securing saddles to liner pipe. Bands shall be resistant to corrosion for a minimum service life of 50 years. Saddle wyes shall only be used when the existing connection is a wye. Saddle tees may be used when the existing connection is a tee.
- (c) Materials: All PVC fittings shall meet the requirements of ASTM specification D3034 for 6-inch through 8-inch SDR 35. All fittings shall be made from virgin PVC compound and/or the manufacturer's own clean reworked material to provide physical and mechanical properties that equal or exceed cell class 12454 as defined in ASTM D1784.
- (d) Fittings: All fittings shall be suitable for use as gravity sewer conduit. Provisions must be made for expansion and contraction at each joint with an elastomeric ring. The joint design shall meet the qualification requirements of ASTM D3212, under both 25 ft of head pressure and 22 in. Hg vacuum. Pipe installation and usage shall be in compliance with the JM EagleTM Publication JME-05B, "Ring-TiteTM Gravity Sewer Installation Guide" or equal.

- (e) Drop Impact Test: Minimum impact strength shall be a minimum of 75 ft/lbf for 6- or 8-inch fittings, in accordance with ASTM method of test D2444. No shattering or splitting is acceptable when the impact energy is applied.
- (f) Load Support: When subjected to 1970 lbm for 6-inch fittings and 2630 lbm for 8-inch fittings, per ASTM F1336, there shall be no cracking or separation of the fitting.
- (g) Heat Reversion: When fittings are subjected to the heat reversion test, per ASTM F610, the fitting shall not split, delaminate, or show weld line separation of more than 50% of the wall thickness at the point of penetration.
- (h) All hardware shall be stainless steel in accordance with ASTM F593 and F594.
- (i) The saddle wye or tee shall not protrude into the waterway of the fitting.

2751.02.05 Cleanout

- (a) Vacuum excavated vertical tee pipe.
 - (1) Four inch diameter vertical pipe attached with watertight seal.
 - i. Approved manufacturers.
 - 1.) LMK Vac-a-Tee.
 - 2.) Jed Saddle Clean-out.
 - 3.) Or equal.
- (b) Open cut excavated cleanout.
 - (1) Refer to the County Standard Specifications and Details.

2751.03 CONSTRUCTION REQUIREMENTS.

2751.03.01 Preparation.

(a) Provide a minimum of 72 hours' notice to customers whose sanitary sewer service will potentially be interrupted. This includes delivering written notices to each home or business including a local telephone number for inquiries or complaints. Provide the owner or occupant with the summary of work to be completed, and the time and duration of service interruption to the building. Contact any home or business that cannot be reconnected within the time stated in the written notice. Fax or email copies of all delivered notices to the County. No house shall be without sewer service for more than 8 hours.

(b) The approximate locations of identified active service taps are shown on the Contract Drawings; however, the Contractor shall determine the exact location and number of service connections by the dye test method, CCTV, or other methods approved by the County. The Contractor shall accurately field locate existing service connections, whether in service or not. For rehabilitated lines, the Contractor shall use existing service locations to reconnect service lines to new liner, unless otherwise specified on the Contract Drawings or directed by the County. During the line preparation and work operation, inactive sewer house connections shall not be cut but shall be left lined over, unless directed by the County.

2751.03.02 Reconnection on Rehabilitated Segments.

- (a) During the terms of the Contract, the Contractor shall maintain an emergency crew fully equipped and capable of reactivating sewer house connections and responding to customer problems after normal work hours. Any costs incurred because of an emergency response to a misidentified house connection, and reinstatement thereof, will be the responsibility of the Contractor and performed at no extra cost to the County and will be considered as incidental to the Contract and not measured for payment. The Contractor will be responsible for all damages to homeowner property that results from deficient house connection reactivations, misidentification of house connections or sewage back-ups resulting from bypass operations. Costs to reinstate service if County emergency utility personnel have to respond shall be billed to the Contractor.
- (b) Contractor shall be responsible for monitoring and supplying sewer service to affected parcels during main line, service lateral, and connection rehabilitation activities as necessary to prevent any sanitary sewer overflows.
- (c) Contractor shall allow liner to normalize to ambient temperature and recover from imposed stretch. For cured-in-place and pulled-in-place glass reinforced plastic liners, verify that liner is completely cured.
- (d) The Contractor shall isolate the lateral to be reinstated or reconnected, as necessary, from the remainder of the sewer in a manner approved by the County. Such method may include bypassing the flow from the section or temporarily plugging the upstream manhole. The Contractor shall conduct operations so as to prevent backflow into residences. Flow control/bypassing shall be completed in accordance with Section 2740.
- (e) Connection Reinstatement Only: After the liner pipe has cured, the Contractor shall reactivate existing sewer house connections. Activation of the connections shall be from the interior of the lined sewer by means of a television camera-directed cutting device that locates the covered sewer service connections and cuts away liner pipe in such a way that a smooth edge is established between the connection and the liner pipe. A standard router bit and wire brush shall be used to complete all service

connection reinstatements. The use of "ball-type" cutters or any other device that causes damage to the existing mainline or service connection piping will not be allowed and any damage caused shall be repaired using a method determined appropriate by the County, up to and including replacement of damaged pipe, at no additional cost to the County. The Contractor shall open each active service connection to a minimum of 75% before the end of each working day, and a minimum of 95% upon completion. Liner pipe shall be tight to existing sewer so there is no annular space between sewer service connection pipe and the liner pipe. Any gaps between the connection pipe and liner pipe shall be filled with a non-shrink chemical grout, verified to be compatible with the liner pipe, to provide a smooth transition. The Contractor shall be responsible for restoring/correcting (by a method approved by the County), without any delay, all missed or faulty reconnections, as well as for any damage caused to property owners for not reconnecting the services soon enough or for not giving notice to the owners. The Contractor shall be also be responsible for repairing any holes drilled/cut in error.

- (f) Contractor shall properly disconnect existing connections from the existing sewer and reconnect to the rehabilitated liner.
- (g) When excavating to expose the house connection, hand excavation shall commence within one foot of the host pipe, to avoid damaging the host pipe liner. The sewer host pipe at the house connection shall be saw cut on both sides of the damaged connection to a flat vertical surface. Remove the host pipe from the liner. If pipe with bell end is removed, spigot end of pipe shall be saw cut and removed a minimum length of the bell depth.
- (h) All connections to a liner shall be made using a shell cutter or hole saw to ensure a proper fit for the new watertight service connection device. The Contractor shall be responsible for completing point repairs of any inactive service connection that is opened but is not specified on the Contract Drawings or required by the County, or has misaligned pilot holes. These point repairs shall be conducted at no additional cost to the County. These repairs shall be as directed and approved by the County.
- (i) The house connection cuts shall be uniform, free of burrs and sharp edges. Any remedial work directed by the County to correct deficient cuts shall be at the Contractor's expense.
- (j) The proposed house connection material and installation shall be in accordance with County Standard Details S-12 and S-12A.
- (k) If the house connection is specified to be replaced, in conjunction with rehabilitation of the main, the inserta tee method and rubber boot wye (or tee) type saddle are the only methods permitted for making the connection to the rehabilitated sewer.
- (I) Inserta Tee Method

- (1) The Contractor shall remove a portion of the existing sanitary sewer main or carrier pipe to expose the liner pipe. Sufficient working space shall be provided to install an inserta tee.
- (2) Remove the existing service connection.
- (3) The Contractor shall precisely cut a circular hole, per the manufacturer's recommendations, in the liner pipe that will form a tight fit between the liner pipe, PVC hub and rubber boot.
- (4) The Contractor shall install the rubber boot into the cored hole, making sure the boot is properly oriented to the mainline. Lubricate the rubber boot with a special solution provided by the inserta tee manufacturer. Make sure the upper and lower ribs of the rubber boot are correctly seated against the inside and outside diameter of the liner pipe.
- (5) The Contractor shall insert the PVC hub into the rubber boot, per manufacturer's recommended instructions. Place stainless steel band around the top of the rubber boot and tighten to form a watertight seal.
- (6) Reinstatements by the inserta tee method that do not produce a watertight seal between the tee and the liner pipe shall be replaced at the Contractor's expense. Sealing such reconnections will not be considered as an option for correcting deficient work.
- (m) PVC Saddle Wye and Gasket with Mechanical Strap
 - (1) Remove a portion of the existing sanitary sewer main or carrier pipe to expose the liner pipe. Clean off liner's exterior and prepare surface for seating saddle. Grinding the surface to make it smooth is not permitted. Provide sufficient working space to install a PVC saddle tee and gasket with mechanical strap.
 - (2) Remove the existing service connection.
 - (3) Precisely cut a circular hole, per the manufacturer's recommendations, in the liner pipe that will form a tight fit between the liner pipe and PVC hub and saddle.
 - (4) Install the PVC hub and saddle over the cored hole, making sure the fittings are properly oriented to the mainline. Make sure the gasket of the saddle is correctly seated against the outside diameter of the liner pipe. The saddle may be required to sit on a bed of resin to smooth out surface.
 - (5) Place stainless steel band around the PVC saddle and tighten to form a watertight seal without crushing or distorting the liner shape.

- (6) Repair any defect to lateral or main, as a result of this Work, at no cost to the County.
- (n) All connections shall be watertight and flush with the liner or replacement pipe. No gaps or areas of infiltration shall exist upon completion of the service connection installation.
- (o) If required, the Contractor shall replace the active sanitary sewer house connections from the rehabilitated sewer main to 6-inches behind the public right-of-way-line and/or edge of easement. In this case, the Contractor shall also locate and replace or install new cleanouts at the property/easement line for all active laterals, unless otherwise directed by the County.
- (**p**) The Contractor shall provide appropriate sleeves and/or adapters and new PVC or ductile iron pipe to reconnect to the existing sewer house service pipe. All mated ends shall be flush to each other across the face with no gaps or offsets and matched inverts on inside diameter.
- (q) Reconnection of the service lateral at the property line shall be the responsibility of the Contractor. Work shall include but not be limited to service line connections, public property line cleanouts, and restoration. If specified in the Contract Documents (plans or specifications), the Contractor shall also be responsible for the installation of the private laterals (from the property line to the house), and cleanouts (typically within five feet outside the house).
- (r) All services which are reconnected to the rehabilitated or replaced sewer main shall be shown on the "As Built Drawings" with the exact distance from the nearest upstream/downstream manhole.

2751.03.03 Protection.

- (a) The Contractor shall provide barricades, warning lights and signs for excavations created for service connections.
- (b) Sand, debris or runoff shall not be allowed to enter sewer system.

2751.03.04 Trenching and Backfilling.

- (a) Perform work in accordance with OSHA standards.
- (b) Unless otherwise directed by the County, when the excavation shows that a service line is not active and/or not connected to an active private lateral, the Contractor shall plug the lateral at the connection to the main and backfill the excavation.
- (c) Determine locations where excavation cannot be performed by excavation machinery. Reasons shall include: excavation equipment has limited access; and buildings or structures are adjacent to or over easements. In such cases, obtain approval from County for extra hand excavation.

- 2751.03.05 Testing.
 - (a) Perform a Post TV inspection as specified in Section 2742 Television Inspection. Unless otherwise requested by the County, all replaced service connections shall be post televised inspected. If the lateral has been insitu lined and/or the County requests inspection of the lateral due to possible defects, the lateral, from the main line connection to the cleanout, shall be inspected as specified in Section 2742 – Television Inspection.

2751.03.06 Cleanout.

- (a) Install if there is no existing cleanout or existing cleanout needs to be repaired.
- (b) If replacing existing cleanout, install assembled cleanout in the same off- property location.
- (c) Installation Method
 - (1) Vacuum excavation
 - i. Excavate pit 24 inches maximum diameter to depth of lateral pipe following manufacturer's recommendation.
 - ii. Install cleanout vertical tee pipe.
 - 1.) Apply curing epoxy on underside of saddle at thickness of .2 inches or 5mm. Epoxy: Able to cure in presence of water.
 - 2.) Saddle to snap fit by compression over 50% of host pipes outside diameter.
 - 3.) Conduct water tight test using minimum water column height of 6 feet.
 - a.) Shallow laterals: Install sufficient amount of vertical pipe to accommodate 6 foot water column.
 - 4.) Core through the host lateral.
 - (2) Open cut excavation
 - i. Install per the County Standard Specifications and Details.

2751.03.07 Cleanup.

- (a) Upon completion of installation work and testing, clean and restore project area affected by the work.
- (b) Conduct site restoration to repair any damage caused during completion of this Work, including replacement of pavement or sidewalks removed or

damaged by excavation. In unpaved areas, bring surface to grade and slope surrounding the excavation. Replace topsoil and seed.

2751.04 MEASUREMENT AND PAYMENT.

- **2751.04.01 Reinstatement (Only) of House Connections to Rehabilitated Main Lines.** This item will not be measurement for payment.
 - (a) **Basis of Payment.** Payment for reinstatement only of connections to rehabilitated main lines shall be included in the prices bid for items in this proposal and as defined in these Specifications.
- **2751.04.02 Replacement of House Connection and Lateral to Rehabilitated Main Lines.** Payment for the replacement of sewer house connections and laterals to rehabilitated main lines shall be based on the unit price per linear foot of lateral replaced, measured horizontally along the centerline of the trench from the wye (or tee) branch on the main sewer through the upstream replaced fittings and/or cap, including the fittings and/or cap, complete-in-place.
 - (a) Basis of Payment: The unit price bid per linear foot for furnishing and laying sanitary sewer house connections and laterals shall include cutting paving; unclassified excavation and refill removal; storage and rehandling of excavated materials; bracing; furnishing and placing all pipe, fittings, and joining materials, including the encased 6-inchx6-inchx4-inch wye and 45 degree elbow on house connections (if required as part of the lateral replacement); testing; incidentals and related work as shown, specified, and directed; removing and disposing of existing sewer pipes; stack house connection (per Standard Detail S-12); pipe to manhole connector; riser; plug; fittings; cap; Class 1 excavations; full-depth saw cut; concrete encasement (mix No. 1); No. 6 Aggregate bedding; confined space entry and equipment; sewage flow control; erosion and sediment control; traffic control; resident notification; post-television inspection; initial and general backfill and compaction; borrow for backfilling (Contractor shall assume all excavated material is unsuitable and trenches shall be backfilled with borrow); proper offsite disposal of unsuitable material.
- **2751.04.03 Installation of Cleanout by Vacuum Excavation.** Payment for the installation of a cleanout by vacuum excavation shall be based on the unit price per each cleanout installed, complete-in-place.
 - (a) **Basis of Payment:** The unit price per each cleanout installed by vacuum excavation shall include vacuum excavation; cutting paving; unclassified excavation and refill removal; storage and rehandling of excavated materials; furnishing and placing all pipe, fittings, and connection to service; testing; incidentals and related work as shown, specified, and directed; removing and disposing of existing cleanouts; full-depth saw cut; sewage flow control; erosion and sediment control; traffic control; resident notification; No. 6 aggregate bedding; initial and general backfill and compaction; borrow for backfilling (Contractor shall assume all excavated material is unsuitable excavation shall be backfilled with borrow); proper offsite disposal of unsuitable material.

- **2751.04.04 Installation of Cleanout by Open Cut Excavation.** Payment for the installation of a cleanout by open cut excavation shall be based on the unit price per each cleanout installed, complete-in-place.
 - (a) **Basis of Payment:** The unit price per each cleanout installed by open cut excavation shall include vacuum excavation; cutting paving; unclassified excavation and refill removal; storage and rehandling of excavated materials; bracing; furnishing and placing all pipe, fittings, and connection to service; testing; incidentals and related work as shown, specified, and directed; removing and disposing of existing cleanouts; full-depth saw cut; confined space entry and equipment; sewage flow control; erosion and sediment control; traffic control; resident notification; No. 6 aggregate bedding; initial and general backfill and compaction; borrow for backfilling (Contractor shall assume all excavated material is unsuitable excavation shall be backfilled with borrow); proper offsite disposal of unsuitable material.

END OF SECTION

SECTION 2752

SEWER HOUSE CONNECTION LATERAL SEALS

2752.01 REQUIREMENTS

- 2752.01.01 **Intent:** It is the intent of this portion of the Specification to provide for the rehabilitation and reconnection of sewer house connections using cured-in-place (CIP) sewer house connection lateral seals (SHCLS) as designated by the Contract Documents to mainline sewers without excavation, by installation of a resin-impregnated, flexible fiberglass or polyester felt seal in the form of a tube with a full circumferential seal that will be installed into the sewer house connection (SHC) lateral utilizing pressure apparatus and either ambient cured or cured using steam, hot water or ultraviolet light. The SHC to be repaired may be a combination of tee's, wyes or break-in taps of varying sizes and angles up to and beyond 30 degrees. The resin shall rapidly cure to transform the flexible liner insert into a hard, impermeable seal around and in the SHC. The SHCLS product shall extend from the mainline sewer through the first connection joint of the SHC lateral pipe to the desired termination location or to a minimum of 1 foot, whichever is longer, in a continuous tight fitting, watertight fashion creating a pipe-within-a-pipe to eliminate any visible ground water leakage and future root growth at the SHC lateral to the mainline sewer connection. The SHCLS system shall be compatible with any mainline sewer and/or SHC pipe or liner system and provide a thorough bond to the mainline sewer cured-in-place pipe (CIPP) liner. The SHCLS shall contain a 16" long full circle sleeve in the mainline sewer and provide a watertight seal between the mainline sewer and the SHC. When cured, the SHCLS shall extend over the required length of the sewer house connection and a particular section of the mainline sewer as a continuous, one piece, tight fitting, corrosion resistant and verifiable non-leaking cured-in-place pipe. If within the warranty period, the SHCLS product installed in the sewer system is not acceptable due to leakage, delaminating or any other defects, the Contractor shall repair or replace the affected portion at no cost to the County. It is understood that if the Contractor fails to do such work as required, the Contractor shall be responsible for said costs of repairs or replacement.
- **2752.01.02 Quality Assurance**: For quality assurance, the manufacturer of the specific SHCLS system and installer must be able to document a minimum of 1,500 successful SHCLS installations in the U.S. within the past five years.
- **2752.01.03 Submittals**: The Contractor shall submit the information listed below for review and approval. The notice to proceed for this item of work will not be issued until all of the listed information has been reviewed and approved by the County.
 - (a) Infrared spectrum for proposed resin and confirmation of the resins meeting ASTM D5813.
 - (b) Certification of resin volume and required 5 to 10 percent addition.
 - (c) Certification from resin manufacturer regarding approval of resin dye quantity and type.

- (d) Information on the maximum allowable tensile stress for the tube, from the felt manufacturer.
- (e) Documentation of Installer's Experience: Information provided shall include the location of the job, the number of SHCLS installed, project completion date, and the Owner's contact for the job including name, title, address, and phone number. Documentation shall also be provided showing that the installer has been trained by the manufacturer in the installation of their product.
- (f) Documentation of Manufacturer's Experience: Information provided shall include the location of the job, the number of SHCLS installed, project completion date, and the Owner's contact for the job including name, title, address, and phone number.
- (g) Product Warranty and Certification Form: To insure that all products and materials proposed for use on this project are of the highest quality and specifically designed and manufactured for the intended installation or use, a Product Warranty and Certification Form shall be completed by the rehabilitative product manufacturer(s), manufacturer's representative or vendor as well as the Sewer House Connection Lateral Seal installer certifying that the product(s) they are proposing to use is specifically designed for the intended application, installation and/or function. Failure to complete this form may prevent the product(s) from being used on this project.

PRODUCT WARRANTY AND CERTIFICATION FORM

REFERENCE: (PROJECT NAME AND CONTRACT NUMBER) - Sewer House Connection Lateral Seals

THE UNDERSIGNED HEREBY ATTESTS THAT HE HAS EXAMINED ALL THE REFERENCED PROJECT INFORMATION, PROJECT INSTALLATION REQUIREMENTS AND THE CONTRACT SPECIFICATIONS AND HEREBY WARRANTS AND CERTIFIES THAT THE REHABILITATION PRODUCTS THAT THEY PROPOSE TO FURNISH, DELIVER AND INSTALL FOR THIS PROJECT MEETS OR EXCEEDS THE REQUIREMENTS OF THESE CONTRACT SPECIFICATIONS, IS SUITABLE FOR THE INTENDED PURPOSE AND INSTALLATION, AND WILL SATISFACTORILY PERFORM TO THE CRITERIA SPECIFIED. THIS WARRANTY SHALL BE IN ADDITION TO, AND NOT IN LIEU OF, ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED.

PRODUCT:_____

MANUFACTURER:_____

Address:

By:___

(Typed Name and Title)

(SEAL)

(Signature)

The Product Warranty and Certification must be signed by a Principal Person (President, Vice-President, etc.) of the Product's Manufacturer. In the event the manufacturer is not the Supplier then a Principal Person of the Supplier must also sign this form.

_____/s/ _____

MANUFACTURER'S REPRESENTATIVE/VENDOR:

Address:

By:_

(Typed Name and Title)

(SEAL)

(Signature)

_____/s/ _____(Date)

(Date)

The Product Warranty and Certification must be signed by a Principal Person (President, Vice-President, etc.) of the Installation Contractor. In the event the manufacturer is not the Installation Contractor then a Principal Person of the Installation Contractor must also sign this form.

INSTALLATION CONTRACTOR:_____

Address:

By:___

(Typed Name and Title)

(SEAL)

(Signature)

_____/s/ _____(Date)

2752.02 MATERIAL REQUIREMENTS:

2752.02.01 General Corrosion Requirements:

- (a) The finished SHCLS product shall be either a polyester felt or ECR (E-glass corrosion resistant) fiberglass laminate, impregnated with resin to cure via steam, hot water, UV light, or ambient cure, and which, when cured, is chemically resistant to domestic sewage over the expected life time of the rehabilitated pipe.
- (b) The SHCLS product shall be compatible with the lining system utilized for the main and/or lateral sewer lines and provide a thorough bond between the lining materials.
- (c) This Specification references the American Society for Testing and Materials (ASTM) standards that are made part hereof by reference and shall be the latest edition and revision.
 D543 Testing Method of Plastics to Chemical Reagents
 D578 Standard Specifications for Glass Fiber Strands
 D1600 Abbreviations of Terms Relating to Plastics
 D 790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
- (d) Reference is further made to NASSCO Standard: Recommended Specification for Sewer Collection Systems Rehabilitation.

2752.02.02 Materials:

- (a) The flexible fiberglass or polyester felt SHCLS is a tube type insert that shall be fabricated to the proper size for the SHC and mainline sewer pipe where the seal is to be installed. The proper fit will allow the SHCLS to key into the internal surface irregularities of the SHC lateral joint and neatly fit tight to the internal circumference of the SHC. The SHCLS tube shall be a laminate made of non-woven fiberglass or polyester felt materials that allows for circumferential stretching and angular alignment with the SHC lateral pipes connection geometry during the seals installation.
- (b) The minimum length shall be that deemed necessary by the installer to effectively span the distance from the SHC at the mainline sewer through the first connection joint to the desired termination location or a minimum of 1 foot, whichever is longer, in the SHC lateral pipe.
- (c) Unless otherwise specified, the SHCLS installer shall furnish a specially designed, unsaturated polyester or vinyl ester resin, and catalyst system compatible with the seals curing process that provides cured physical strengths as specified herein.

2752.02.03 Physical Properties:

(a) The structural performance of the finished seal must be adequate to accommodate all anticipated loads throughout its design life.

- (b) Design methods are to be derived from traditionally accepted pipe formula for various loading parameters and modes of failure. All equations will be modified to include ovality as a design parameter. The design method shall be submitted to the County for approval prior to the pre-construction conference.
- (c) The cured SHCLS shall conform to the minimum structural standards as listed below:

Final SHCLS	ASTM Standard	Results
Flexural Stress	ASTM D790	4,500 psi
Flexural Modulus of Elasticity	ASTM D790	250,000 psi

2752.02.04 Deviations:

(a) Should pre-inspection reveal that the SHCLS cannot be used, the Contractor shall notify the County and provide the location(s), reason(s) each SHCLS cannot be installed, and supporting CCTV for each location. The Contractor will provide an alternate repair option at each of these locations where the SHCLS cannot be installed. The County will review and determine what, if any, method of repair will be used.

2752.03 CONSTRUCTION REQUIREMENTS:

2752.03.01 Inspection: After suitable cleaning and video inspection have confirmed that the lateral connection is suitable for installation of the seal, introduce the fiberglass or polyester felt SHCLS from the mainline into the lateral as follows:

2752.03.02 Installation:

- (a) Flow control shall be in accordance with Section 02740 Flow Control Section of these Specifications.
- (b) A flexible resin impregnated tube sized to the existing SHC will be inserted into the SHC lateral by means of a robotic manipulator device. The robotic device, together with a CCTV inspection camera, will be used to align the repair product with the SHC opening. Air pressure, supplied to the applicator through an air hose, shall be used to invert the resin impregnated SHCLS into the existing SHC. The inversion pressure will be adjusted to fully deploy the SHCLS into the SHC lateral and hold it tight to the mainline sewer and SHC pipe walls. Care shall be taken during the curing process so as not to over-stress the liner tube.
- (c) The inserted product will be inspected using a CCTV camera to confirm the product is correctly positioned and/or centered in the SHC lateral opening prior to curing.
- (d) The pressure apparatus shall include a bladder of sufficient size and length in both the mainline sewer and SHC lateral to extend beyond the ends of both the SHCLS tube and mainline connection segments. A smooth transition from the SHCLS to the mainline and SHC pipe diameters without a step, ridge or gap between the product and the inner diameters of the SHC lateral and mainline sewer must be achieved.

2752.03.03 Curing:

- (a) After inversion of the SHCLS is completed, manufacturer recommended pressure is maintained on the impregnated SHCLS tube for the duration of the curing process.
- (b) The cure shall be deemed to be completed when the SHCLS has been ambient cured, or cured using UV light, steam, or hot water for the time period specified by the SHCLS manufacturer.

2752.03.04 Cool-down:

(a) The Contractor shall cool the hardened SHCLS before relieving the pressure in the pressure apparatus. Cool-down may be accomplished by the introduction of cool air into the pressure apparatus. Care shall be taken to maintain proper pressure throughout the cure and cool-down period.

2752.03.05 Finish:

- (a) The finished SHCLS liner shall be free from visual defects such as foreign inclusions, dry spots, keel, boat hull, pinholes, wrinkles, and other deformities and increase the flow rate. The SHCLS shall taper at each end providing a smooth transition for accommodating video inspection or cleaning equipment and providing proper flow in the mainline. Frayed ends of the SHCLS shall be removed prior to acceptance. Defects that negatively impact the flow, or create obstructions for debris to get caught on will not be allowed, and SHCLS rejected. If rejected, the SHCLS shall be repaired, or lateral replaced, at the Contractor's expense and in a manner acceptable to the County.
- (b) During the warranty period, any defects which will affect the integrity or strength of the SHCLS shall be repaired, or lateral replaced, at the Contractor's expense and in a manner acceptable to the County.
- (c) After work is completed, the Contractor shall provide the County with preinstallation CCTV inspection and CCTV of the SHCLS installation process per Specification Section 2742.

2752.03.06 CLEAN-UP:

(a) Upon acceptance of the SCHLS installation work, the Contractor shall restore the project area affected by their operations.

2752.03.07 INSTALLATION AND FINAL ACCEPTANCE INSPECTIONS:

- (a) Contractor shall take video showing the installation process for the seals and submit this video to the County prior to payment for the seals.
- (b) Final acceptance of this work is contingent on the receipt, review, and approval of the Final Acceptance TV Inspection described in Section 2742.

2752.04 MEASUREMENT AND PAYMENT:

- **2752.04.01** Sewer House Connection Lateral Seals: Measurement for payment will be per each full circumferential (full-wrap) SHCLS successfully installed and accepted in-place by the County. SHCLS may be added or removed at the County's discretion.
 - (a) Basis for payment: Payment for the installation of SHCLS will be full compensation for the successful installation of the lateral seals. Work will include sewer flow control, public notification, traffic control, any required excavation and restoration, mainline and/or SHC pipe cleaning, root and debris removal, installation of the SHCLS, pre-installation and installation CCTV inspection including submission of videos and television logs, testing, clean-up and site restoration and all other incidental items required to successfully install the SHCLS. Payment for this item does not indicate final acceptance of this item; final acceptance is contingent on the receipt, review, and approval of the Final Acceptance TV Inspection described in Section 2742.
- **2752.04.02** Sewer House Connection Lateral Seals, Additional Length. Measurement and payment will be per linear foot of full circumferential (full-wrap) SHCLS successfully installed and accepted in-place by the County beyond the minimum SHCLS length described herein.
 - (a) Basis for payment: Payment shall be made at the contract unit price bid per linear foot beyond the minimum SHCLS length described herein for the successful installation of the lateral seals additional length. Work will include sewer flow control, public notification, any required excavation and restoration, mainline and/or SHC pipe cleaning, root and debris removal, installation of the SHCLS, pre-installation and installation CCTV inspection including submission of videos and television logs, testing, clean-up and site restoration and all other incidental items required to successfully install the SHCLS. Payment for this item does not indicate final acceptance of this item; final acceptance is contingent on the receipt, review, and approval of the Final Acceptance TV Inspection described in Section 2742.

END OF SECTION

SECTION III

Permits



JOHN A. OLSZEWSKI, JR. County Executive

DAVID V. LYKENS, Director Department of Environmental Protection and Sustainability

August 4, 2021

Mr. Christopher J. Kriegner Ramboll Executive Plaza III, Suite 304 11350 McCormick Road Hunt Valley, Maryland 21031

Re: Gray Manor Interceptor Rehabilitation Forest Conservation Special Variance Tracking #07-21-3418

Dear Mr. Kriegner:

A request for a variance from Baltimore County's Forest Conservation Law was received by the Department of Environmental Protection and Sustainability (EPS) on March 18, 2021. The referenced project consists of the rehabilitation of sanitary sewer infrastructure; specifically, approximately 15,000 linear feet of existing sanitary sewer pipe and 55 manholes in the Dundalk section of Baltimore County. Baltimore County entered into a Consent Decree with the USEPA, the State of Maryland, and the Department of Justice, with the purpose of eliminating sanitary sewer overflows within the service area. The project will primarily consist of trenchless repair techniques to rehabilitate the sewer system. Activities include sewer lining, external and internal point repairs, pipe and manhole protection and the replacement of these structures where necessary. Much of the land disturbance associated with this project is required to provide sanitary sewer access to facilitate the proposed trenchless repairs. The total area within the limit of disturbance (LOD) is 7.8 acres. No grading is proposed and no new impervious surfaces will be created as part of this project.

This variance request proposes to impact two specimen trees, whose critical root zones are located significantly within the LOD. The two specimen trees are Silver maples; one tree is 33-inch diameter at breast height (DBH) in poor condition, and the other tree is 38-inch DBH in good condition.

The Director of DEPS may grant a special variance to the Forest Conservation Law in accordance with criteria outlined in Section 33-6-116 of the Baltimore County Code. There are six (6) criteria listed in Subsection 33-6-116(d) and (e) that shall be used to evaluate the variance request. One of the three criteria under Subsection 33-6-116 (d) must be met, and all three of the criteria under Subsection 33-6-116 (e) must be met, in order to approve the variance.

The first criterion (Subsection 33-6-116 (d)(1) of the Code) requires that the petitioner show that the land in question cannot yield a reasonable return if the requirement from which the special variance is requested is imposed and will deprive the petitioner of all beneficial use of his

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111 West Chesapeake Avenue, Main Office | Towson, Maryland 21204 www.baltimorecountymd.gov Mr. Christopher J. Kriegner Gray Manor Sewer Interceptor Forest Conservation Special Variance Tracking # 07-21-3418 August 4, 2021 Page 2

property. The applicant proposes to remove two specimen trees for this project, which is under a Consent Decree and which requires rehabilitation of an existing sewer system. Impacts to these trees are unavoidable, and denying this variance request would deprive the applicant of all reasonable and beneficial use of the site. The applicant has demonstrated to the satisfaction of the Department, why these specimen trees must be removed, that reasonable efforts have been made to protect other specimen trees and forest onsite, and that the plan cannot be reasonably altered. Therefore, this criterion is met, as shown on the plan.

The second criterion (Subsection 33-6-116 (d) (2) of the Code) requires that the petitioner show that his/her plight is due to unique circumstances and not the general conditions in the neighborhood. Repair of the existing sewer infrastructure is a required activity. The variance request arises from a unique situation concerning the location of the specimen trees on the site, relative to the infrastructure requirements. The proposal is based on these unique conditions of the site, and not from general conditions of the neighborhood. Therefore, this criterion is met.

The third criterion (Subsection 33-6-116 (d) (3) of the Code) requires that the petitioner show that the special variance requested will not alter the essential character of the neighborhood. The improvements proposed to an existing sanitary sewer system will not alter the essential character of the neighborhood, as they provide essential services to the surrounding neighborhood. Therefore, this criterion is met.

The fourth criterion (Subsection 33-6-116 (e) (1) of the Code) requires that the granting of the special variance will not adversely affect water quality. Rehabilitation of the existing sanitary sewer system is required and necessary to eliminate sewer overflows, and will improve water quality. Therefore, this criterion is met.

The fifth criterion (Subsection 33-6-116 (e) (2) of the Code) requires that the special variance request does not arise from a condition or circumstance, which is the result of actions taken by the petitioner. The petitioner has not taken any action on the property that would necessitate this variance request. Therefore, this criterion is met.

The sixth criterion (Subsection 33-6-116 (e)(3) of the Code) requires that the Director of EPS find that the special variance, as granted, would be consistent with the spirit and intent of Article 33, Title 6 of the Baltimore County Code. The variance request is consistent with the spirit and intent of the Forest Conservation Law, as only unavoidable impacts to specimen trees will occur, the rehabilitation of the sewer system will enhance water quality and public safety, and mitigation will be provided. The applicant has demonstrated to the satisfaction of the Department why these specimen trees must be removed, that reasonable efforts have been made to protect other specimen trees and forest onsite, and that the plan cannot be reasonably altered. The two specimen trees to be impacted are located within existing forest, and the applicant is required to mitigate forest impacts by meeting all forest conservation requirements. Therefore, this criterion is met for the removal of the two specimen trees shown on the plan with this variance request.

Mr. Christopher J. Kriegner Gray Manor Sewer Interceptor Forest Conservation Special Variance Tracking # 07-21-3418 August 4, 2021 Page 3

Based upon our review, this Department also finds that the required variance criteria have been met for the removal of the two specimen trees identified on the plan. Therefore, the variance is hereby approved, in accordance with Section 33-6-116 of the Baltimore County Code, with the following conditions:

- 1. Meeting forest conservation requirements for the area of forest cleared will provide the necessary mitigation for the impacts to the two specimen trees to be removed. A Forest Conservation Plan for this project must be approved prior to grading permit approval.
- 2. A note must be added to all plans stating that "A variance was granted by Baltimore County DEPS to allow impacts to two specimen trees on this project site, and mitigation was provided by meeting all forest conservation requirements as outlined on the forest conservation plan for the project."

It is the intent of this Department to approve this variance subject to the above conditions. Any changes to site layout may require submittal of revised plans and an amended, or new variance request.

If you have any questions regarding this correspondence, please contact Thomas Panzarella at (410) 887-3980.

Sincerely yours,

David V. Lykens Director

DVL/tcp

c: Marian Honeczy MDDNR



JOHN A. OLSZEWSKI, JR. County Executive

STORMWATER MANAGEMENT

DAVID V. LYKENS, Director Department of Environmental Protection and Sustainability

410-887-3768

July 8, 2021

Ramboll Executive Plaza III, Suite 803 11350 McCormick Road Hunt Valley, MD 21031 Attn: PJ Crow, P.E

> RE: Gray Manor Interceptor Rehabilitation Stormwater Management Variance Baltimore Harbor Watershed **Project I.D. M210083 Tracking Number: 07-21-3488**

Dear Mr. Crow;

This office has reviewed the information submitted and finds that a stormwater management variance can be granted for this project under Section 33-4-113 (a) (2) of Title 4 of the Baltimore County Code. Section 33-4-113 (a) (2) allows a stormwater management variance to be granted if there are exceptional circumstances such that strict adherence to the provisions of the design standards would result in unreasonable hardship or practical difficulty and not fulfill the intent of the regulations.

This project is for the rehabilitation of sanitary sewer infrastructure by cut and cover. The existing cover conditions will be re-established once the improvements are made. Although the disturbed area is in excess of 5,000 square feet, there will be no increase in impervious area or runoff resulting from the project.

Please contact Ella Kaplan, E.I.T. at 410-887-3768 should you have any questions.

ery truly yours, Kritty Udhin, P.E., Manager Stormwater Management Department of Environmental Protection & Sustainability

KU:eak

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DEPARTMENT OF ENVIRONMENTAL PROTECTION & SUSTAINABILITY INTEROFFICE CORRESPONDENCE

TO:	\boxtimes	SWM	
		Attn. Ella Kaplan	
	\bowtie	PAI	
		Attn. Jerry Chen	

DATE: November 21, 2022

PROJECT NAME:	,	or Interceptor
	Rehabilitat	lion
TYPE OF PLAN:	Grading &	Sediment Control
EPS Project ID #:	M210083	
PLAN/REV. DATE:	10/4/22	EIR received 10/31/22

Staff of Environmental Impact Review (EIR) have reviewed the subject submission. The following recommendations are made:



Disapproved

ADVISORY COMMENTS:

1. An Environmental Agreement is required.

REVIEWER: Libby Errickson

PHONE: 410-887-3980

c. PAI Email Recipients

Gray Manor Interceptor Rehab SCP 11.21.22.docx/libby/s

BALTIMORE COUNTY, MARYLAND DEPARTMENT OF ENVIRONMENTAL PROTECTION AND SUSTA Religing County Environmental Finance Administration



ENVIRONMENTAL AGREEMENT

All grading and stormwater management permit application numbers should be included on this Environmental Agreement (EA). Please return completed form with ORIGINAL signatures to EPS, 111 W. Chesapeake Avenue, Room 319, Towson, MD 21204.

ENVIRONMENTAL AGREEMENT for:	Project Name: <u>Gray M</u> Plat Reference: <u>N/A</u> Tax Acct. No.: N/A	Aanor Interceptor Rehabilitation
M210083	Total Estimated Cost: No. (All Environmental Securitie	
Grading Permit # <u>CEN24-000071</u> Stormwater Management Permit # EIR Plan #'sTracking # 07-21-34		M210083

, hereinafter referred to as the applicant, party of the first part, and BALTIMORE COUNTY, MARYLAND, a political subdivision of the State of Maryland, hereinafter referred to as the County, party of the second part.

WHEREAS, the applicant agrees to implement all environmental measures as set forth in this agreement, at no cost to the County, including:

		AMOUNT	APPLICATION DATE
a.	Grading, erosion and sediment control Required performance security amount	N/A	*
b.	Storm water management Required performance security amount (List facilities separately)	N/A	*
C.	Forest conservation Required performance security amount	N/A	*
d.	Forest buffer mitigation Required performance security amount	N/A	*
e.	Wetland mitigation Required performance security amount	N/A	*
f.	Chesapeake Bay Critical Area mitigation Required performance security amount	N/A	*
g.	Other (Specify)Required performance security amount	N/A	*

★ Applicant – please leave blank

Now, THEREFORE, THIS AGREEMENT WITNESSETH:

THAT, for and in consideration of the provisions and benefits herein contained, the parties do hereby agree as follows:

- 1. The applicant agrees:
 - a. To implement all required environmental measures for this project in accordance with applicable permits, plans and performance requirements.
 - b. To post security(ies) with the County as required in Baltimore County Code Section 32-4-312, in accordance with applicable time frames and procedures specified in the Baltimore County Code and the Department of Environmental Protection and Resource Management Policy, Rules and Regulations Manual.
 - c. To process any request(s) for reduction to security(ies) in accordance with Baltimore County Code Section 32-4-313 and the Department of Environmental Protection and Resource Management Policy, Rules and Regulations Manual.

WITNESS the signatures of:

Date:	07/12/2024	Signed: Amy Bley Contraction of the second state of the second sta
Printed Nan	ne: Amy Bley	Baltimore County Sewer Design
		Address: County Office Building
Witness Signature: Witness Printed Name:		111 W. Chesapeake Ave.
		Towson, MD 21204
		Email:abley1@baltimorecountymd.gov
		Phone: 410-887-3871

APPROVED By Sustainability rector of Envi Horacio lada C Rev. 2, March 1, 2017 S>EPS>Shared>ReferenceMaterial

Date: * July 18, 2024



Baltimore County, Maryland Department of Permits, Approvals, and Inspections BUILDING PERMIT

Permit Number: CEN24-000071

Permit Type: Commercial Environmental

Sub Type: Grading

Date Issued: 10/26/2024

Expiration Date: 10/25/2026

Property Information	Lot Size and Setbacks
Property Address:	Size:
City, State, Zip: , ,	Set Backs - Front Yard:
Tax ID: 1202058810	
District: 12	Set Backs - Rear Yard:
Existing Use:	Set Backs - Right Side Yard:
Proposed Use:	Set Backs - Left Side Yard:
Is this property located in a Floodplain: YES	
Sprinkler to be Installed?:	
Plumbing Work?:	
Electrical Work?:	
Ои	vner Information

Owner: Baltimore County

Owner Address: 111 West Chesapeake Avenue, Towson, MD, 21204

Tenant:

Applicant: Asha-Anne Tyagi

C.f.b. 3 C. Pete Gutwald, AICP, Director

E. John Bryan

E. John Bryan, Building Engineer

*Please log into your account to get up-to-date information regarding the permit process and related inspections. Refer to the Permit Number when making inquires.



Baltimore County, Maryland Department of Permits, Approvals, and Inspections BUILDING PERMIT

Permit Number: CEN24-000071

Permit Type: Commercial Environmental

Sub Type: Grading

Date Issued: 10/26/2024

Expiration Date: 10/25/2026

Building Permit Contractor

Name of Contractor: TBD

Phone Number:

Address:

City, State, Zip: , ,

Is Owner Contractor?:

Building Permit Information

Description of Work: Grade 326,825sf to replace existing sanitary sewer main. Permit expires two years from date of issue. No construction to begin until pre-construction meeting. Failure to comply will result in penalties. Schedule your pre-construction meeting in your portal. Work is not in Floodplain.

Cfill ald, AICP, Director

E. John Bryan

E. John Bryan, Building Engineer

*Please log into your account to get up-to-date information regarding the permit process and related inspections. Refer to the Permit Number when making inquires.

STATE OF MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER AND SCIENCE ADMINISTRATION WETLANDS AND WATERWAYS PROTECTION PROGRAM LETTER OF AUTHORIZATION

AUTHORIZATION NUMBER: 21-NT-0341/202160709

EFFECTIVE DATE: September 11, 2023

EXPIRATION DATE: September 11, 2028

AUTHORIZED PERSON: Baltimore County Department of Public Works 111 West Chesapeake Avenue, Room 200 Towson, Maryland 21204 Attn: Lisa Eicholtz, P.E.



IN ACCORDANCE WITH ENVIRONMENT ARTICLE §5-503(a) AND §5-906(b), ANNOTATED CODE OF MARYLAND, COMAR 26.17.04 AND 26.23.01, AND 26.08.02 AND THE ATTACHED CONDITIONS OFAUTHORIZATIONS, <u>Baltimore County Department of Public Works</u> (AUTHORIZED PERSON"), IS HEREBY AUTHORIZED BY THE WATER AND SCIENCE ADMINISTRATION ("ADMINISTRATION") TO CONDUCT A REGULATED ACTIVITY IN A NONTIDAL WETLAND, BUFFER, OR EXPANDED BUFFER, AND/OR TO CHANGE THE COURSE, CURRENT OR CROSS-SECTION OF WATERS OF THE STATE, IN ACCORDANCE WITH THE ATTACHED PLANS APPROVED BY THE ADMINISTRATION ON <u>September 11, 2023</u> ("APPROVED PLAN") AND PREPARED BY <u>Ramboll</u> AND INCORPORATED HEREIN, AS DESCRIBED BELOW:

Rehabilitation of an existing sewer conveyance infrastructure. The project will result in temporary impacts to 14,545 square feet of forested nontidal wetland, 8,840 square feet of 25-foot nontidal wetland buffer, and 249 linear feet (3,212 square feet) of stream. The project is located along the existing sewer infrastructure from Lynch Road to Lynhurst Road, Dundalk, Maryland.

MD Grid Coordinates N 178360 x E 444821

Heather L

Heather L. Nelson Program Manager Wetlands and Waterways Protection Program

Attachments:	Conditions of Authorization	
	Plans	
	BMPs	

cc: MDE WSA Compliance Program Baltimore County w/file Christopher J. Kriegner, Ramboll

THE FOLLOWING CONDITIONS OF AUTHORIZATION APPLY TO ALL ACTIVITIES AUTHORIZED BY AUTHORIZATION NUMBER 21-NT-0341/202160709 PAGE 2 of 4

- 1. <u>Validity</u>: Authorization is valid only for use by Authorized Person. Authorization may be transferred only with prior written approval of the Administration. In the event of transfer, the transferee agrees to comply with all terms and conditions of Authorization.
- 2. <u>Initiation of Work, Modifications and Extension of Term:</u> Authorized Person shall initiate authorized activities in waterways, including streams and the 100-year floodplain, within two (2) years of the Effective Date of this Authorization or the Authorization shall expire. [Annotated Code of Maryland, Environment Article 5-510(a)-(b) and Code of Maryland Regulations 26.17.04.12]. Authorized Person may submit written requests to the Administration for (a) extension of the period for initiation of work, (b) modification of Authorization, including the Approved Plan, or, (c) not later than 45 days prior to Expiration Date, an extension of term. Requests for modification shall be in accordance with applicable regulations and shall state reasons for changes, and shall indicate the impacts on nontidal wetlands, streams, and the floodplain, as applicable. The Administration may grant a request at its sole discretion. (Annotated Code of Maryland, Environment Article 5-510(c), and Code of Maryland Regulations 26.17.04.12, and Annotated Code of Maryland, Environment Article 5-907 and Code of Maryland Regulations 26.23.02.07).
- 3. <u>Responsibility and Compliance</u>: Authorized Person is fully responsible for all work performed and activities authorized by this Authorization shall be performed in compliance with this Authorization and Approved Plan. Authorized Person agrees that a copy of the Authorization and Approved Plan shall be kept at the construction site and provided to its employees, agents and contractors. A person (including Authorized Person, its employees, agents or contractors) who violates or fails to comply with the terms and conditions of this Authorization, Approved Plan or an administrative order may be subject to penalties in accordance with §5-514 and §5-911, Department of the Environment Article, Annotated Code of Maryland (2007 Replacement Volume).
- 4. **Failure to Comply:** If Authorized Person, its employees, agents or contractors fail to comply with this Authorization or Approved Plan, the Administration may, in its discretion, issue an administrative order requiring Authorized Person, its employees, agents and contractors to cease and desist any activities which violate this Authorization, or the Administration may take any other enforcement action available to it by law, including filing civil or criminal charges.
- 5. <u>Suspension or Revocation</u>: Authorization may be suspended or revoked by the Administration, after notice of opportunity for a hearing, if Authorized Person: (a) submits false or inaccurate information in Permit application or subsequently required submittals; (b) deviates from the Approved Plan, specifications, terms and conditions; (c) violates, or is about to violate terms and conditions of this Authorization; (d) violates, or is about to violate, any regulation promulgated pursuant to Title 5, Department of the Environment Article, Annotated Code of Maryland as amended; (e) fails to allow authorized representatives of the Administration to enter the site of authorized activities at any reasonable time to conduct inspections and evaluations; (f) fails to comply with the requirements of an administrative action or order issued by the Administration; or (g) does not have vested rights under this Authorization and new information, changes in site conditions, or amended regulatory requirements necessitate revocation or suspension.
- 6. <u>Other Approvals</u>: Authorization does not authorize any injury to private property, any invasion of rights, or any infringement of federal, State or local laws or regulations, nor does it obviate the need to obtain required authorizations or approvals from other State, federal or local agencies as required by law.
- 7. <u>Site Access</u>: Authorized Person shall allow authorized representatives of the Administration access to the site of authorized activities during normal business hours to conduct inspections and evaluations necessary to assure compliance with this Authorization. Authorized Person shall provide necessary assistance to effectively and safely conduct such inspections and evaluations.
- 8. Inspection Notification: Authorized Person shall notify the Administration's Compliance Program at least five (5) days before starting authorized activities and five (5) days after completion. For Allegany, Garrett, and Washington Counties, Authorized Person shall call 301-689-1480. For Carroll, Frederick, Howard, Montgomery and Prince George's Counties, Authorized Person shall call 301-665-2850. For Baltimore City, Anne Arundel, Baltimore, Calvert, Charles, Harford and St. Mary's Counties, Authorized Person shall call 410-537-3510. For Caroline, Cecil, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico and Worcester Counties, Authorized Person shall call 410-901-4020. If Authorization is for a project that is part of a mining site, please contact the Land and Materials Administration's Mining Program at 410-537-3557 at least five (5) days before starting authorized activities and five (5) days after completion.
- 9. <u>Sediment Control</u>: Authorized Person shall obtain approval from the Baltimore County Soil Conservation District for a grading and sediment control plan specifying soil erosion control measures. The approved grading and sediment control plan shall be included in the Approved Plan and shall be available at the construction site.
- 10. Best Management Practices During Construction: Authorized Person, its employees, agents and contractors shall conduct authorized activities in a manner consistent with the Best Management Practices specified by the Administration.
- 11. **Disposal of Excess:** Unless otherwise shown on the Approved Plan, all excess fill, spoil material, debris, and construction material shall be disposed of outside of nontidal wetlands, nontidal wetlands buffers, and the 100-year floodplain, and in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands.
- 12. <u>Temporary Staging Areas</u>: Temporary construction trailers or structures, staging areas and stockpiles shall not be located within nontidal wetlands, nontidal wetlands buffers, or the 100-year floodplain unless specifically included on the Approved Plan.

CONDITIONS OF AUTHORIZATION PAGE 3 of 4

- 13. <u>Temporary Stream Access Crossings</u>: Temporary stream access crossings shall not be constructed or utilized unless shown on the Approved Plan. If temporary stream access crossings are determined necessary prior to initiation of work or at any time during construction, Authorized Person, its employees, agents or contractors shall submit a written request to the Administration and secure the necessary permits or approvals for such crossings before installation of the crossings. Temporary stream access crossings shall be removed and the disturbance stabilized prior to completion of authorized activity or within one (1) year of installation.
- 14. <u>Discharge:</u> Runoff or accumulated water containing sediment or other suspended materials shall not be discharged into waters of the State unless treated by an approved sediment control device or structure.
- 15. <u>Instream Construction Prohibition</u>: To protect important aquatic species, motor driven construction equipment shall not be allowed within stream channels unless on authorized ford crossings. Activities within stream channels are prohibited as determined by the classification of the stream (COMAR 26.08.02.08): Bear Creek and its tributaries are Use I waterways; instream work may not be conducted from February 15 through June 15, inclusive, of any year.
- 16. <u>Instream Blasting</u>: Authorized Person shall obtain prior written approval from the Administration before blasting or using explosives in the stream channel.
- 17. <u>Minimum Disturbance</u>: Any disturbance of stream banks, channel bottom, wetlands, and wetlands buffer authorized by this Authorization or Approved Plan shall be the minimum necessary to conduct permitted activities. All disturbed areas shall be stabilized vegetatively no later than seven (7) days after construction is completed or in accordance with the approved grading or sediment and erosion control plan.
- 18. <u>Restoration of Construction Site:</u> Authorized Person shall restore the construction site upon completion of authorized activities. Undercutting, meandering or degradation of the stream banks or channel bottom, any deposition of sediment or other materials, and any alteration of wetland vegetation, soils, or hydrology, resulting directly or indirectly from construction or authorized activities, shall be corrected by Authorized Person as directed by the Administration.

FEDERALLY MANDATED STATE AUTHORIZATIONS

The State of Maryland issued a Water Quality Certification to the U.S. Army Corps of Engineers for projects receiving federal authorization under the Maryland State Programmatic General Permit, Regional General Permit for Chesapeake Bay Total Maximum Daily Load (TMDL) Activities and non-suspended Nationwide Permits. In addition, as applicable, this Authorization constitutes the State's concurrence with the Applicant's certification that the activities authorized herein are consistent with the Maryland Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. Activities in the following counties are not subject to the Maryland Coastal Zone Management requirement: Allegany, Carroll, Frederick, Garrett, Howard, Montgomery, and Washington.

U.S. ARMY CORPS OF ENGINEERS AUTHORIZATION

The U.S. Army Corps of Engineers has reviewed this activity as a Category B and determined that no authorization is required from the U.S. Army Corps of Engineer as the project qualifies for a Category A Activity b(1) Repair and Maintenance under the Maryland State Programmatic General Permit 6. The terms and conditions of the MDSPGP-6 as outlined in the documents found on the Maryland Department of the Environment's website, <u>https://mde.maryland.gov/programs/Water/WetlandsandWaterways/Pages/</u>MDSPGP6_conditions.aspx, should be followed when performing the authorized work.

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS AND 100-YEAR FLOODPLAINS

- 1) No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- 2) Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- 3) Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
- 4) Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- 5) Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill.
- 6) Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction.
- 7) All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species: Annual Ryegrass (Lolium multiflorum), Millet (Setaria italica), Barley (Hordeum sp.), Oats (Uniola sp.), and/or Rye (Secale cereale). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. Kentucky 31 fescue shall not be utilized in wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
- 8) After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
- 9) To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream:

Use I waters: In-stream work shall not be conducted during the period February 15 through June 15, inclusive, during any year.

- 10) Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
- 11) Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.



THE MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION (MDOT SHA)

320 West Warren Road Hunt Valley, MD 21030

Utility Permit

Permit Number: SHA-4-BA-0716-24

Route No.: MD 151

Limits : NORTH POINT RD - CO 8007 to OLD BATTLE GROVE RD - CO 5558

Issue Date : 11/26/2024

U.C. Ref or Job ID#: 201-007-7308 Project Number:

Route Name (optional): NORTH POINT BLVD - MD 151 Mile Point : 4.230, 3.890

Expiration Date : 11/26/2025

Duration of Work :

Anticipated Start Date :

So far as the MDOT State Highway Administration has the right and power to grant same, permission is hereby given to:

Permittee : Baltimore County Government 111 W. Chesapeake Avenue Room 200 Towson, MD 21204 Attention : Randolph Roll man Phone#: (410) 887-3781 Email: rrollman@baltimorecountymd.gov

Description of Work:

Rehabilitation of the sanitary sewer system within North Point Blvd. This includes manhole coating, and CIPP lining of pipe segments. A bypass line will be required to be trenched across North Point Blvd to facilitate CIPP liner installation.

The following Special Conditions apply to this permit.

Permittee must communicate with the MDOT/SHA Utility Inspector one (1) week prior to the commencement of work being executed under this permit to discuss Maintenance of Traffic.

An approved MDOT/SHA Traffic Control Permit shall be required prior to commencement of work.

All facilities must be placed in accordance with current MDOT/SHA's "Accessibility Policy & Guidelines for Pedestrian Facilities Along State Highways".

All excavation outside of paved section shall be backfilled using suitable material as stated in the MDOT/SHA Specification Book (current revision) or approved by MDOT/SHA Utility Inspector.

✓ Pavement section must be patched using 19 mm PG64-22 base course HMA and (2") inches surface course 12.5mm PG64-22 HMA or as directed by MDOT/SHA Utility Inspector.

Steel Plates - All excavation in MDOT/SHA State Right-of-Way shall be backfilled or plated daily. All steel plates shall be recessed, pegged on all four (4) corners, properly shimmed/wedged, and filled around the edges to provide smooth transition. If more than one plate is utilized adjacent to each other, they shall

✓ be supported from the underside and tack welded to prevent flexing and shifting. All steel plates shall have identification. Inspections of steel plates must occur twice daily using approved MDOT/SHA Inspection Report. Any steel plate placed between December 1st and March 30th, shall have pre-approval from MDOT/SHA Utility Inspector and paving restoration plan/schedule must be identified.

Cold Mix Asphalt is PROHIBITED unless approved by MDOT SHA Utility Inspector. Only approved cold patch materials (CPM) identified on the MDOT/SHA List of Qualified Products is approved for use on Maryland State roadways. CPM's are only to be utilized as a temporary repair until full roadway restoration can be achieved.

Any temporary roadway patch placed between October 30th and April 15th must consist of at least six (6") inches of Hot Mixed Asphalt (HMA) with last two (2") inches being placed by paver and monitored weekly by the Permittee until permanent repair is completed. All roadway patches shall have spray painted identification.

Trench repair less than six (6') feet in width will require a two (2') foot cut back in accordance with
 ✓ MDOT/SHA Standard 578.01 using an approved dry/fresh backfill material as specified in the MDOT/SHA Specification Book or per the MDOT/SHA Utility Inspector.

ROADWAY RESTORATION: All backfill must be compacted and tested. Compaction reports must be provided to SHA (trenches of a 1000' or longer). Roadway repair may require a (2") inch grind and overlay a minimum of (20') feet (max. 250') feet on each side of excavation as directed by MDOT/SHA Utility Inspector. If permanent patch is not compatible to existing roadway, patch will be grinded (2")

✓ inches in depth and (20') feet on each side of patch, the entire width of the lane(s) and overlaid using an approved MDOT/SHA Hot Mix Asphalt (HMA) or as directed by MDOT/SHA Utilities Inspector. Any temporary roadway patch placed between October 30th and April 15th must consist of at least (6") inches HMA and monitored weekly by Permittee until permanent repair is completed. All roadway patches MUST have spray painted identification.

Prior to any work being performed in the State Highway Administration Right-of-Way, a pre-construction meeting shall be held with representatives of the State Highway Administration. The

Permittee is required to schedule the per-construction meeting with the MDOT SHA Utility Area Engineer before any excavation can start. All materials placed in MDOT SHA Right-of-Way must be State approved products.

Notifications:

a. Permittee must notify **ADAM RUPPERT**, the MDOT State Highway Administration **Utilities Area Engineer**, at **(410) 229-2344** or **aruppert@mdot.maryland.gov**, 48 hours prior to commencement of any activities related to this permit.

b. The permittee will designate the Traffic Manager for this permit and a 24 hour emergency number at the pre-construction meeting.

c. All work for this permit shall be in conformance with the above referenced documentation supplied by the utility company.

d. The Permittee is <u>requested</u> to provide Geographic Information System (GIS) coordinates of any of its facilities, infrastructure, and appurtenances installed within the permitted area(s) to MDOT SHA District Office within Sixty (60) calendar days (or agreed upon timeline) of the completion of the Permittee's installation. The GIS coordinates should be provided on <u>As Constructed Plans</u> or other agreed upon mechanism. Please see the <u>2022 UTILITY PERMIT GENERAL PROVISIONS</u>, Section 001.03.03.06 <u>As Constructed Deliverables</u>.

THIS PERMIT IS ISSUED WITH THE REQUIREMENT THAT IT WILL BE ENFORCED WITH THE UTILITY PERMIT GENERAL PROVISIONS. A COPY OF THE UTILITY PERMIT GENERAL PROVISIONS SHALL BE ATTACHED TO EACH AND EVERY INDIVIDUAL WORK ORDER PERMIT ALONG WITH ANY SPECIAL PROVISIONS, ATTACHMENTS, PLANS, AND ADDENDA IN ORDER TO CONSTITUTE A COMPLETE AUTHORIZED UTILITY PERMIT. THE COMPLETE AUTHORIZED UTILITY PERMIT OR DISTRICT OFFICE PERMIT WHICH MUST BE FOUND ON THE JOB SITE <u>AT ALL TIMES.</u>

Bran Ienda

FOR

By: _____

District Engineer MDOT State Highway Administration



THE MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION (MDOT SHA)

320 West Warren Road Hunt Valley, MD 21030

Utility Permit

Permit Number: SHA-4-BA-0717-24

Route No. : Limit From : Begin Mile :

Issue Date : 11/26/2024

Anticipated Start Date :

U.C. Ref or Job ID#: 201-0077-7308 Project Number:

Route Name : Limit To : End Mile :

Expiration Date: 11/26/2025

Duration of Work :

So far as the MDOT State Highway Administration has the right and power to grant same, permission is hereby given to:

Permittee :

Baltimore County Government 111 W. Chesapeake Avenue Room 200 Towson, MD 21204 Attention : Randolph Roll man Phone#: (410) 887-3781 Email: rrollman@baltimorecountymd.gov

Description of Work:

Rehabilitation of the sanitary sewer system adjacent to North Point Road, within SHA owned property. Temporary, above-ground sanitary sewer bypass piping and pumps will be required. This permit is for the ROW off of I 695 Inner Loop near Lynhurst Rd.

The following Special Conditions apply to this permit.

Permittee must communicate with the MDOT/SHA Utility Inspector one (1) week prior to the commencement of work being executed under this permit to discuss Maintenance of Traffic.

An approved MDOT/SHA Traffic Control Permit shall be required prior to commencement of work.

✓ All facilities must be placed in accordance with current MDOT/SHA's "Accessibility Policy & Guidelines for Pedestrian Facilities Along State Highways".

✓ All excavation outside of paved section shall be backfilled using suitable material as stated in the MDOT/SHA Specification Book (current revision) or approved by MDOT/SHA Utility Inspector.

Prior to any work being performed in the State Highway Administration Right-of-Way, a

Pre-construction meeting shall be held with representatives of the State Highway Administration. The Permittee is required to schedule the per-construction meeting with the MDOT SHA Utility Area Engineer before any excavation can start. All materials placed in MDOT SHA Right-of-Way must be State approved products.

Notifications:

a. Permittee must notify **ADAM RUPPERT**, the MDOT State Highway Administration **Utilities Area Engineer**, at **(410) 229-2344** or **aruppert@mdot.maryland.gov**, 48 hours prior to commencement of any activities related to this permit.

b. The permittee will designate the Traffic Manager for this permit and a 24 hour emergency number at the pre-construction meeting.

c. All work for this permit shall be in conformance with the above referenced documentation supplied by the utility company.

d. The Permittee is <u>requested</u> to provide Geographic Information System (GIS) coordinates of any of its facilities, infrastructure, and appurtenances installed within the permitted area(s) to MDOT SHA District Office within Sixty (60) calendar days (or agreed upon timeline) of the completion of the Permittee's installation. The GIS coordinates should be provided on <u>As Constructed Plans</u> or other agreed upon mechanism. Please see the <u>2022 UTILITY PERMIT GENERAL PROVISIONS</u>, Section 001.03.03.06 <u>As Constructed Deliverables</u>.

THIS PERMIT IS ISSUED WITH THE REQUIREMENT THAT IT WILL BE ENFORCED WITH THE UTILITY PERMIT GENERAL PROVISIONS. A COPY OF THE UTILITY PERMIT GENERAL PROVISIONS SHALL BE ATTACHED TO EACH AND EVERY INDIVIDUAL WORK ORDER PERMIT ALONG WITH ANY SPECIAL PROVISIONS, ATTACHMENTS, PLANS, AND ADDENDA IN ORDER TO CONSTITUTE A COMPLETE AUTHORIZED UTILITY PERMIT. THE COMPLETE AUTHORIZED UTILITY PERMIT OR DISTRICT OFFICE PERMIT WHICH MUST BE FOUND ON THE JOB SITE <u>AT ALL TIMES.</u>

Brian Lenda

FOR

By:

District Engineer MDOT State Highway Administration

Baltimore County Job Order Number: 201-007	7-7308 Date: *//v/2/			
A Consent for Access is hereby granted to the Baltimore County, Maryland, its				
employees, agents, contractors, and subcontractors, to enter upon the real property of:				
Owner (print): Rev, Ross Con Nin Co-Owner (print):				
Owner (signature): The form Conten Co-Owner (signature):				
Property ID (address, map ID): DIEHLWOOD RD				
Subdivision/City/Town/County: DUNDALK				
Maryland Zip Code: 21222	Telephone Number: (4/a) 78/~/8/0			
This Consent for Access Agreement ("Agreement"), entered into and effective this day of				
RECI	TALS			
WHEREAS the County desires to enter upon portions of the Property to repair, rehabilitate or maintain Baltimore County's existing public sanitary sewer systems. To complete the structural rehabilitation, the County must have legal access to enter upon the Property to access the existing sanitary sewer (the "Work"); and				
WHEREAS, the Property Owner is willing to grant the Cour assigns (the "County"), permission to immediately enter the fences or gates, to perform the Work.				
NOW THEREFORE, in consideration of the premises and and sufficiency of which is hereby acknowledged by the paragrees as follows:				
1. Property Owner hereby grants this Letter of Permission to the County to enter upon the portions of the Property as shown Entry Exhibit, prepared by Ramboll Americas Engineering Solutions Inc., formerly known as O'Brien & Gere Engineers, Inc., and hereby incorporated as Exhibit "A" respectively, to perform the Work, those rights to include pedestrian and vehicular access, as necessary, for the purposes of repairing, maintaining or rehabilitating the County sewer system, and the rights to perform any tasks normally required for and related to this type of work.				
2. The term of this Agreement shall be effective immediately upon full execution hereof by both parties and run for a period of 365 days beginning with the date of commencement of construction activities at or in close proximity to the Property.				
3. As consideration for the rights of entry set forth in this Agreement, the County, subject to the limitations set forth in the Local Government Tort Claims Act, Sections 5-301 through 5-304 of the Courts and Judicial Proceedings Article, as amended, agrees on behalf of itself, its respective successors, assigns, and licensees, to indemnify, protect, and hold harmless the undersigned property owners, its successors and assigns from and against any and all costs, liability, suits, and expenses in respect to any and all loss of life, property, injury, or damages to persons or property of any person, firm, or corporation (including the parties hereto, their respective officers, agents, contractors, employees and licensees) and from and against any and all claims, demands, and actions in respect to such loss, injury, or damages caused by or growing out of the Work, provided said costs, liability, suits, expenses, claims, demands, and/or actions were caused by the negligence of the County, its successors, assigns, agents, employees, contractors or licensees.				
 4. The County will make reasonable efforts to restore the Property to the condition it was in before the County entered the Property pursuant to this Agreement. 5. The Property Owner hereby certifies to being the fee simple titleholder of the Property seized of the right and title to grant the rights herein without the joinder or agreement of any other party, and without violating the terms of any other agreements or interests of others in the Property. 				
Property Owner(s)				
Owner's Signature: Ner Rom Conth	Owner's Signature			
Witness: Alle Farril Witness				
Date \$/10/21	Date			
0/10/01				

Baltimore County Job Order Number: 201,007	7-7308 Date: 6 - 26 - 21				
A Consent for Access is hereby granted to the Baltimore County, Maryland, its employees, agents, contractors, and subcontractors, to enter upon the real property of:					
Owner (print): Charles T Gripm Co-Owner (print):					
Owner (signature): /ka brt far Co-Owner (signature):					
Property ID (address, map ID): DEBOY AVE	co conter (orginataro).				
Subdivision/City/Town/County: DUNDALK					
Maryland Zip Code: 21222	Telephone Number: (443 386-90 72				
This Consent for Access Agreement ("Agreement"), entered	l into and effective this day of				
SONE, SOST, is by and between Baltimore	e County, Maryland, (the "County") and (the "Owner").				
Charles / Orthand	(me Owner).				
RECI	TALS				
WHEREAS the County desires to enter upon portions of the	Property to repair, rebabilitate or maintain Baltimore				
County's existing public sanitary sewer systems. To complete	ete the structural rehabilitation, the County must have				
legal access to enter upon the Property to access the existi					
WHEREAS, the Property Owner is willing to grant the Cour	the its officials, accepts, amplevenes, contractors and				
assigns (the "County"), permission to immediately enter the					
fences or gates, to perform the Work.	, , ,				
NOW THEREFORE in consideration of the promises and a	when other good and valuable consideration, the receipt				
NOW THEREFORE, in consideration of the premises and s and sufficiency of which is hereby acknowledged by the part	ties hereto, the Property Owner hereby covenants and				
agrees as follows:					
1. Descents Ourses beachy erects this Letter of Des	mission to the County to option upon the participa of the				
1. Property Owner hereby grants this Letter of Permission to the County to enter upon the portions of the Property as shown Entry Exhibit, prepared by Ramboll Americas Engineering Solutions Inc., formerly known as					
O'Brien & Gere Engineers, Inc., and hereby incorporated a	s Exhibit "A" respectively, to perform the Work, those				
rights to include pedestrian and vehicular access, as neces	sary, for the purposes of repairing, maintaining or				
rehabilitating the County sewer system, and the rights to perturbed type of work.	erform any tasks normally required for and related to this				
	nmediately upon full execution hereof by both parties and				
run for a period of 365 days beginning with the date of com	mencement of construction activities at or in close				
proximity to the Property.	in this Agreement, the County, subject to the limitations				
set forth in the Local Government Tort Claims Act, Sections					
Proceedings Article, as amended, agrees on behalf of itself	, its respective successors, assigns, and licensees, to				
indemnify, protect, and hold harmless the undersigned prop					
any and all costs, liability, suits, and expenses in respect to any and all loss of life, property, injury, or damages to persons or property of any person, firm, or corporation (including the parties hereto, their respective officers, agents,					
contractors, employees and licensees) and from and against any and all claims, demands, and actions in respect to					
such loss, injury, or damages caused by or growing out of the Work, provided said costs, liability, suits, expenses, claims, demands, and/or actions were caused by the negligence of the County, its successors, assigns, agents,					
employees, contractors or licensees.	gence of the County, its successors, assigns, agents,				
4. The County will make reasonable efforts to restore the Property to the condition it was in before the					
County entered the Property pursuant to this Agreement.					
5. The Property Owner hereby certifies to being the fee simple titleholder of the Property seized of the right and title to grant the rights herein without the joinder or agreement of any other party, and without violating the terms					
of any other agreements or interests of others in the Property.					
Bronorty Owner(a)					
Property Owner(s)					
Owner's Signature: Challer Them	Owner's Signature:				
Witness: Witness: Witness:					
Date: 0-26-21	Date:				

Baltimore County Job	Order Number: 201-0077-	-7308 Date: 6/30/52021		
A Consent for Access is hereby granted to the Baltimore County, Maryland its				
employees, agents, contractors, and subcontractors, to enter upon the real property of:				
Owner (print): Kersen A Spocker Co-Owner (print):				
Owner (signature):		Co-Owner (signature):		
Property ID (address, n	hap ID): 7839 DEBOY AVE			
Subdivision/City/Town/0			1	
Maryland	Zip Code: 21222	Telephone Number: (Hid) 977 8388		
			-	
This Consent for Access Agr	eement ("Agreement"), entered	into and effective this 30 day of		
JONE 202	Is by and between balumore	County, Maryland, (the County / and		
Jelse St	Spoende ((the "Owner").	- 8	
	RECIT	TALS		
WHEREAS the County desir	es to enter upon portions of the	Property to repair, rehabilitate or maintain Baltimore		
		ete the structural rehabilitation, the County must have ng sanitary sewer (the "Work"); and		
legal access to enter upon th	le Property to access the existing	ig sanitary sewer (the work), and		
WHEREAS, the Property Ov	vner is willing to grant the Count	ty, its officials, agents, employees, contractors and		
		Property, which will include entry through any and all		
fences or gates, to perform t	he Work.			
NOW THEREFORE, in cons	sideration of the premises and si	uch other good and valuable consideration, the receip	,t	
and sufficiency of which is h	ereby acknowledged by the part	ties hereto, the Property Owner hereby covenants and	t	
agrees as follows:				
1 Dramarty Owners	horoby prosto this Latter of Dars	mission to the County to option the portions of the		
1. Property Owner I Property as shown Entry Ex	hibit prepared by Ramboll Ame	mission to the County to enter upon the portions of the ericas Engineering Solutions Inc., formerly known as	:	
		s Exhibit "A" respectively, to perform the Work, those		
rights to include pedestrian a	and vehicular access, as necess	sary, for the purposes of repairing, maintaining or		
	ver system, and the rights to per	rform any tasks normally required for and related to the	lis	
type of work.	Agreement shall be effective in	nmediately upon full execution hereof by both parties	and	
run for a period of 365 days	beginning with the date of com	mencement of construction activities at or in close		
proximity to the Property.				
3. As consideration	n for the rights of entry set forth	in this Agreement, the County, subject to the limitatio	ns	
set forth in the Local Govern	ment Tort Claims Act, Sections	s 5-301 through 5-304 of the Courts and Judicial , its respective successors, assigns, and licensees, to		
indemnify protect and hold	harmless the undersigned prop	perty owners, its successors, assigns, and licensees, to	ainst	
		any and all loss of life, property, injury, or damages to		
persons or property of any p	person, firm, or corporation (inclu	uding the parties hereto, their respective officers, age	nts,	
		st any and all claims, demands, and actions in respec		
		the Work, provided said costs, liability, suits, expenses	5,	
employees, contractors or li		gence of the County, its successors, assigns, agents,		
		tore the Property to the condition it was in before the		
County entered the Property pursuant to this Agreement.				
5. The Property Owner hereby certifies to being the fee simple titleholder of the Property seized of the right				
and title to grant the rights herein without the joinder or agreement of any other party, and without violating the terms of any other agreements or interests of others in the Property.				
or any other agreements or interests of others in the Froperty.				
	1			
Property	Owner(s)			
(XII				
Owner's Signature:	Xelon	Owner's Signature:		
Witness: Debana	4 Bornsh	Witness:		
Date: 6/30/20	21	Date		
	· ·			
R 2				

[Baltimore County Job Order Number: 201-0077-7308 Date: 6-26-2021					
	A Consent for Access is hereby granted to the Baltimore County, Maryland, its					
	employees, agents, contractors, and subcontractors, to enter upon the real property of:					
	Owner (print): Joyce & Loch rdge Co-Owner (print):					
	Owner (signature): Co-Owner (signature):					
	Property ID (address, map ID): 7841 DEBOY AVE					
	Subdivision/City/Town/County: DUNDALK					
	Maryland	Zip Code: 21222	Telephone Number: ()			
0	This Consent for Access Agreement ("Agreement"), entered into and effective this day of Joyce E. Lochridge (the "Owner").					
		RE	CITALS			
	WHEREAS the County desires to enter upon portions of the Property to repair, rehabilitate or maintain Baltimore County's existing public sanitary sewer systems. To complete the structural rehabilitation, the County must have legal access to enter upon the Property to access the existing sanitary sewer (the "Work"); and					
		ission to immediately enter t	ounty, its officials, agents, employees, contractors and the Property, which will include entry through any and all			
			d such other good and valuable consideration, the receipt parties hereto, the Property Owner hereby covenants and			
	 Property Owner hereby grants this Letter of Permission to the County to enter upon the portions of the Property as shown Entry Exhibit, prepared by Ramboll Americas Engineering Solutions Inc., formerly known as O'Brien & Gere Engineers, Inc., and hereby incorporated as Exhibit "A" respectively, to perform the Work, those rights to include pedestrian and vehicular access, as necessary, for the purposes of repairing, maintaining or rehabilitating the County sewer system, and the rights to perform any tasks normally required for and related to this type of work. 2. The term of this Agreement shall be effective immediately upon full execution hereof by both parties and 					
	 run for a period of 365 days beginning with the date of commencement of construction activities at or in close proximity to the Property. 3. As consideration for the rights of entry set forth in this Agreement, the County, subject to the limitations set forth in the Local Government Tort Claims Act, Sections 5-301 through 5-304 of the Courts and Judicial Proceedings Article, as amended, agrees on behalf of itself, its respective successors, assigns, and licensees, to indemnify, protect, and hold harmless the undersigned property owners, its successors and assigns from and against any and all costs, liability, suits, and expenses in respect to any and all loss of life, property, injury, or damages to persons or property of any person, firm, or corporation (including the parties hereto, their respective officers, agents, contractors, employees and licensees) and from and against any and all claims, demands, and actions in respect to such loss, injury, or damages caused by or growing out of the Work, provided said costs, liability, suits, expenses, claims, demands, and/or actions were caused by the negligence of the County, its successors, assigns, agents, employees, contractors or licensees. 4. The County will make reasonable efforts to restore the Property to the condition it was in before the 					
	County entered the Property pursuant to this Agreement. 5. The Property Owner hereby certifies to being the fee simple titleholder of the Property seized of the right and title to grant the rights herein without the joinder or agreement of any other party, and without violating the terms of any other agreements or interests of others in the Property.					
	Property C	Dwner(s)				
	Owner's Signature:	ex Lochud of	Owner's Signature:			
	Witness: Read the Di pare Witness:					
	Date: -6.27-2821 Date:					
	- A MAN	64				

	1 1
Baltimore County Job Order Number:	Date: 8/31/21
A Consent for Access is hereby granted to the	Baltimore County, Maryland, its
employees, agents, contractors, and subcontr	
Owner (print): Nain Kchoush	Co-Owner (print): Angela Graiten
Owner (signature):	Co-Owner (signature):
	DRTH POINT RD
Subdivision/City/Town/County: DUNDALK	
	Tolophone Number (01) (1) 6 (555
Maryland Zip Code: 21222	Telephone Number: (216) 469-1555
This Consent for Access Agreement ("Agreement"), enter A Consent for Access Agreemen	nore County, Maryland, (the "County") and
RE	CITALS
WHEREAS the County desires to enter upon portions of County's existing public sanitary sewer systems. To con egal access to enter upon the Property to access the ex	f the Property to repair, rehabilitate or maintain Baltimore mplete the structural rehabilitation, the County must have kisting sanitary sewer (the "Work"); and
WHE REAS, the Property Owner is willing to grant the Co assigns (the "County"), permission to immediately enter fences or gates, to perform the Work.	ounty, its officials, agents, employees, contractors and the Property, which will include entry through any and all
NOW THEREFORE, in consideration of the premises ar and sufficiency of which is hereby acknowledged by the agrees as follows:	nd such other good and valuable consideration, the receipt parties hereto, the Property Owner hereby coven ants and
Property as shown Entry Exhibit, prepared by Rambol / O'Brien & Gere Engineers, Inc., and hereby incorporate rights to include pedestrian and vehicular access, as ne rehabilitating the County sewer system, and the rights to type of work. 2. The term of this Agreement shall be effective	o perform any tasks normally required for and related to this re immediately upon full execution hereof by both parties and
set forth in the Local Government Tort Claims Act, Sect Proceedings Article, as amended, agrees on behalf of it indemnify, protect, and hold harmless the undersigned any and all costs, liability, suits, and expenses in respec persons or property of any person, firm, or corporation (contractors, employees and licensees) and from and ag such loss, injury, or damages caused by or growing out	orth in this Agreement, the County, subject to the limitations
 The County will make reasonable efforts to County entered the Property pursuant to this Agreemen 5. The Property Owner hereby certifies to bein 	ng thefee simple titleholder of the Property seized of the right agreement of any other party, and without violating the terms
Property Owner(s)	
Owner's Signature:	Owner's Signature:
Witness:	
	Witness:
Date: 8/31/21	Date: 8/31/21

Baltimore County Job Order Number: 201-0077-7308 Date: 7AUG ZOZ (
A Consent for Access is hereby granted to the Baltimore County, Maryland, its				
employees, agents, contractors, and subcontractors, to enter upon the real property of:				
Owner (print): Dennis M Angst Co-Owner (print): Angela M. Angst				
Owner (signature): Dennir M Angel Co-Owner (signature):				
Property ID (address, map ID): 3835 ANNADALE RD				
Subdivision/City/Town/County: DUNDALK				
Maryland Zip Code: 21222 Telephone Number: (141) 900 2017				
This Consent for Access Agreement ("Agreement"), entered into and effective this $\frac{7t^{h}}{10000000000000000000000000000000000$				
RECITALS				
WHEREAS the County desires to enter upon portions of the Property to repair, rehabilitate or maintain Baltimore County's existing public sanitary sewer systems. To complete the structural rehabilitation, the County must have legal access to enter upon the Property to access the existing sanitary sewer (the "Work"); and				
WHEREAS, the Property Owner is willing to grant the County, its officials, agents, employees, contractors and assigns (the "County"), permission to immediately enter the Property, which will include entry through any and all fences or gates, to perform the Work.				
NOW THEREFORE, in consideration of the premises and such other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by the parties hereto, the Property Owner hereby covenants and agrees as follows:				
1. Property Owner hereby grants this Letter of Permission to the County to enter upon the portions of the Property as shown Entry Exhibit, prepared by Ramboll Americas Engineering Solutions Inc., formerly known as O'Brien & Gere Engineers, Inc., and hereby incorporated as Exhibit "A" respectively, to perform the Work, those rights to include pedestrian and vehicular access, as necessary, for the purposes of repairing, maintaining or rehabilitating the County sewer system, and the rights to perform any tasks normally required for and related to this type of work.				
2. The term of this Agreement shall be effective immediately upon full execution hereof by both parties and run for a period of 365 days beginning with the date of commencement of construction activities at or in close proximity to the Property.				
3. As consideration for the rights of entry set forth in this Agreement, the County, subject to the limitations set forth in the Local Government Tort Claims Act, Sections 5-301 through 5-304 of the Courts and Judicial Proceedings Article, as amended, agrees on behalf of itself, its respective successors, assigns, and licensees, to indemnify, protect, and hold harmless the undersigned property owners, its successors and assigns from and against any and all costs, liability, suits, and expenses in respect to any and all loss of life, property, injury, or damages to persons or property of any person, firm, or corporation (including the parties hereto, their respective officers, agents, contractors, employees and licensees) and from and against any and all claims, demands, and actions in respect to such loss, injury, or damages caused by or growing out of the Work, provided said costs, liability, suits, expenses, claims, demands, and/or actions were caused by the negligence of the County, its successors, assigns, agents, employees, contractors or licensees.				
 4. The County will make reasonable efforts to restore the Property to the condition it was in before the County entered the Property pursuant to this Agreement. 5. The Property Owner hereby certifies to being the fee simple titleholder of the Property seized of the right and title to grant the rights herein without the joinder or agreement of any other party, and without violating the terms of any other agreements or interests of others in the Property. 				
Property Owner(s)				
Owner's Signature: Dennis MAuget Owner's Signature:				
Traven . engerne				
Date: 8-7-2021 0 Date: 8-7-2021 0				

We have Days - need to be forced

	01-0077-7308 Date: 7-7-202
A Consent for Access is hereby granted to	
	ontractors, to enter upon the real property of:
Owner (print): Thomas Mokey	Co-Owner (print): preprint March
Owner (signature):	Co-Owner (signature):
Property ID (address, map ID): 3923 NOR	TH POINT BLVD
Subdivision/City/Town/County: DUNDALK	
Maryland Zip Code: 21222	Telephone Number: (1/) 23/ 370
This Consent for Access Agreement ("Agreement"),	, entered into and effective this day of Baltimore County, Maryland, (the "County") and (the "Owner").
100	RECITALS
	ons of the Property to repair, rehabilitate or maintain Baltimore o complete the structural rehabilitation, the County must have the existing sanitary sewer (the "Work"); and
	the County, its officials, agents, employees, contractors and enter the Property, which will include entry through any and all
	ses and such other good and valuable consideration, the receipt y the parties hereto, the Property Owner hereby covenants and
Property as shown Entry Exhibit, prepared by Ram O'Brien & Gere Engineers, Inc., and hereby incorporights to include pedestrian and vehicular access, a rehabilitating the County sewer system, and the rigit type of work. 2. The term of this Agreement shall be eff run for a period of 365 days beginning with the date proximity to the Property. 3. As consideration for the rights of entry set forth in the Local Government Tort Claims Act, Proceedings Article, as amended, agrees on behal indemnify, protect, and hold harmless the undersing any and all costs, liability, suits, and expenses in re- persons or property of any person, firm, or corporation contractors, employees and licensees) and from ar such loss, injury, or damages caused by or growing claims, demands, and/or actions were caused by the employees, contractors or licensees.	er of Permission to the County to enter upon the portions of the boll Americas Engineering Solutions Inc., formerly known as orated as Exhibit "A" respectively, to perform the Work, those as necessary, for the purposes of repairing, maintaining or ghts to perform any tasks normally required for and related to this ffective immediately upon full execution hereof by both parties and e of commencement of construction activities at or in close set forth in this Agreement, the County, subject to the limitations Sections 5-301 through 5-304 of the Courts and Judicial If of itself, its respective successors, assigns, and licensees, to gned property owners, its successors and assigns from and against espect to any and all loss of life, property, injury, or damages to ation (including the parties hereto, their respective officers, agents, nd against any and all claims, demands, and actions in respect to g out of the Work, provided said costs, liability, suits, expenses, the negligence of the County, its successors, assigns, agents, rts to restore the Property to the condition it was in before the ement
County entered the Property pursuant to this Agree 5. The Property Owner hereby certifies to	o being the fee simple titleholder of the Property seized of the right er or agreement of any other party, and without violating the terms
County entered the Property pursuant to this Agree 5. The Property Owner hereby certifies to and title to grant the rights herein without the joind	o being the fee simple titleholder of the Property seized of the right er or agreement of any other party, and without violating the terms
County entered the Property pursuant to this Agree 5. The Property Owner hereby certifies to and title to grant the rights herein without the joind of any other agreements or interests of others in th	o being the fee simple titleholder of the Property seized of the right ler or agreement of any other party, and without violating the terms ne Property.
County entered the Property pursuant to this Agree 5. The Property Owner hereby certifies to and title to grant the rights herein without the joinde of any other agreements or interests of others in th Property Owner(s)	o being the fee simple titleholder of the Property seized of the right er or agreement of any other party, and without violating the terms ne Property.
County entered the Property pursuant to this Agree 5. The Property Owner hereby certifies to and title to grant the rights herein without the joinde of any other agreements or interests of others in th Property Owner(s)	o being the fee simple titleholder of the Property seized of the right ler or agreement of any other party, and without violating the terms he Property.

Baltimore County Job Order Number: 201-0077-73	308 Date: 3-3-2022		
A Consent for Access is hereby granted to the Balt			
employees, agents, contractors, and subcontractors	s, to enter upon the real property of:		
	D-Owner (print):		
	o-Owner (signature):		
Property ID (address, map ID): OLD NORTH POIN	NT RD		
Subdivision/City/Town/County: DUNDALK			
Maryland Zip Code: 21222	Telephone Number: (717) 24° 2159		
This Consent for Access Agreement ("Agreement"), entered int March 2022, is by and between Baltimore Co Daily Expression (th RECITAL	e "Owner").		
WHEREAS the County desires to enter upon portions of the Property to repair, rehabilitate or maintain Baltimore County's existing public sanitary sewer systems. To complete the structural rehabilitation, the County must have legal access to enter upon the Property to access the existing sanitary sewer (the "Work"); and			
WHEREAS, the Property Owner is willing to grant the County, assigns (the "County"), permission to immediately enter the Prifences or gates, to perform the Work.	its officials, agents, employees, contractors and operty, which will include entry through any and all		
NOW THEREFORE, in consideration of the premises and such and sufficiency of which is hereby acknowledged by the parties agrees as follows:			
 agrees as follows: 1. Property Owner hereby grants this Letter of Permission to the County to enter upon the portions of the Property as shown Entry Exhibit, prepared by Ramboll Americas Engineering Solutions Inc., formerly known as O'Brien & Gere Engineers, Inc., and hereby incorporated as Exhibit "A" respectively, to perform the Work, those rights to include pedestrian and vehicular access, as necessary, for the purposes of repairing, maintaining or rehabilitating the County sewer system, and the rights to perform any tasks normally required for and related to this type of work. 2. The term of this Agreement shall be effective immediately upon full execution hereof by both parties and run for a period of 365 days beginning with the date of commencement of construction activities at or in close proximity to the Property. 3. As consideration for the rights of entry set forth in this Agreement, the County, subject to the limitations set forth in the Local Government Tort Claims Act, Sections 5-301 through 5-304 of the Courts and Judicial Proceedings Article, as amended, agrees on behalf of itself, its respective successors, assigns, and licensees, to indemnify, protect, and hold harmless the undersigned property owners, its successors and assigns from and against any and all costs, liability, suits, and expenses in respect to any and all loss of life, property, injury, or damages to persons or property of any person, firm, or corporation (including the parties hereto, their respective officers, agents, contractors, employees and licensees) and from and against any and all claims, demands, and actions in respect to such loss, injury, or damages caused by the negligence of the County, its successors, assigns, agents, employees, contractors were caused by the negligence of the County, its successors, assigns, agents, employees, contractors or licensees. 4. The County will make reasonable efforts to restore the Property to the condition it was in before the County entered			
Property Owner(s)			
Owner's Signature: Du, In Express Moulo C	wner's		
Witness MILEA	(itness: CARA CARA express, inc		
Date: 3-3-2-22	ate: UDUIJE CAP-COS, me		
	00 00		

MARK S. EYER VICE PRESIDENT OF OPERATIONS

Baltimore County Job Order Number: 201-0077-	7308 Date: 630 2			
A Consent for Access is hereby granted to the Baltimore County, Maryland, its				
employees, agents, contractors, and subcontractors, to enter upon the real property of:				
Owner (print): OFLITWAY VICILL Co-Owner (print):				
	Co-Owner (signature):			
Property ID (address, map ID): 4030 OLD NORTH	POINT RD			
Subdivision/City/Town/County: DUNDALK				
Maryland Zip Code: 21222	Telephone Number: (HD) 247-5700			
This Consent for Access Agreement ("Agreement"), entered into and effective this day of is by and between Baltimore County, Maryland, (the "County") and (the "County").				
RECITA	ALS			
WHEREAS the County desires to enter upon portions of the I County's existing public sanitary sewer systems. To complet legal access to enter upon the Property to access the existing	te the structural rehabilitation, the County must have			
WHEREAS, the Property Owner is willing to grant the County assigns (the "County"), permission to immediately enter the F fences or gates, to perform the Work.				
NOW THEREFORE, in consideration of the premises and su and sufficiency of which is hereby acknowledged by the parti agrees as follows:				
Property pwner(s)				
	Owned Classifier			
Owner's Signature	Owner's Signature:			
Witness: Witness:				
Date: 6/10/21	Date:			

Baltimore County Job Order Number: 201-007	7-7308 Date: 1//10/2/			
A Consent for Access is hereby granted to the E				
employees, agents, contractors, and subcontractors, to enter upon the real property of:				
Owner (print): The Joseph Kave wach Co. Twe Co-Owner (print):				
Owner (signature): OM 9 - President	Co-Owner (signature):			
Property ID (address, map ID): 8100 LYNHURST RD				
Subdivision/City/Town/County: DUNDALK				
Maryland Zip Code: 21222	Telephone Number: (410) 388 -8070			
This Consent for Access Agreement ("Agreement"), entered into and effective this 104 day of <u>Neurobactical access</u> , is by and between Baltimore County, Maryland, (the "County") and <u>The Toroph Kavewach Control access</u> (the "Owner").				
REC	ITALS			
WHEREAS the County desires to enter upon portions of th County's existing public sanitary sewer systems. To comp legal access to enter upon the Property to access the exist	lete the structural rehabilitation, the County must have			
WHEREAS, the Property Owner is willing to grant the Cou assigns (the "County"), permission to immediately enter the fences or gates, to perform the Work. Property 15 10	Property, which will include entry through any and all cked at the entrance, Access allowed			
NOW THEREFORE, in consideration of the premises and and sufficiency of which is hereby acknowledged by the pa agrees as follows:				
1. Property Owner hereby grants this Letter of Permission to the County to enter upon the portions of the Property as shown Entry Exhibit, prepared by Ramboll Americas Engineering Solutions Inc., formerly known as O'Brien & Gere Engineers, Inc., and hereby incorporated as Exhibit "A" respectively, to perform the Work, those rights to include pedestrian and vehicular access, as necessary, for the purposes of repairing, maintaining or rehabilitating the County sewer system, and the rights to perform any tasks normally required for and related to this type of work.				
 The term of this Agreement shall be effective immediately upon full execution hereof by both parties and run for a period of 365 days beginning with the date of commencement of construction activities at or in close proximity to the Property. 				
3. As consideration for the rights of entry set forth in this Agreement, the County, subject to the limitations set forth in the Local Government Tort Claims Act, Sections 5-301 through 5-304 of the Courts and Judicial Proceedings Article, as amended, agrees on behalf of itself, its respective successors, assigns, and licensees, to indemnify, protect, and hold harmless the undersigned property owners, its successors and assigns from and against any and all costs, liability, suits, and expenses in respect to any and all loss of life, property, injury, or damages to persons or property of any person, firm, or corporation (including the parties hereto, their respective officers, agents, contractors, employees and licensees) and from and against any and all claims, demands, and actions in respect to such loss, injury, or damages caused by or growing out of the Work, provided said costs, liability, suits, expenses, claims, demands, and/or actions were caused by the negligence of the County, its successors, assigns, agents, employees, contractors or licensees.				
 4. The County will make reasonable efforts to restore the Property to the condition it was in before the County entered the Property pursuant to this Agreement. 5. The Property Owner hereby certifies to being the fee simple titleholder of the Property seized of the right and title to grant the rights herein without the joinder or agreement of any other party, and without violating the terms of any other agreements or interests of others in the Property. 				
Property Owner(s)				
Owner's Signature: AM Tare Housert	Owner's Signature:			
Witness: Jan M. Kary 1 Witness:				
Date: 11 /1/ /2/	Date:			

Baltimore County Job Order Number: 201-0077-73	
A Consent for Access is hereby granted to the Baltin	
employees, agents, contractors, and subcontractors	
Owner (print): DAUTIO A Etty C Manager Co	-Owner (print):
	-Owner (signature):
Property ID (address, map 10): 4070 NORTH POINT	r RD
Subdivision/City/Town/County: DUNDALK	
Maryland Zip Code: 21222	Telephone Number: ()
This Consent for Access Agreement ("Agreement"), entered into SUMA, 1021, is by and between Baltimore Con GRP 4070 Work Print - LLC (the	and effective this day of unty, Maryland, (the "County") and "Owner").
RECITALS	6
WHEREAS the County desires to enter upon portions of the Pro County's existing public sanitary sewer systems. To complete the legal access to enter upon the Property to access the existing satisfies the second se	he structural rehabilitation, the County must have
WHEREAS, the Property Owner is willing to grant the County, it assigns (the "County"), permission to immediately enter the Prop fences or gates, to perform the Work.	
NOW THEREFORE, in consideration of the premises and such and sufficiency of which is hereby acknowledged by the parties agrees as follows:	other good and valuable consideration, the receipt hereto, the Property Owner hereby covenants and
 Property Owner hereby grants this Letter of Permissi Property as shown Entry Exhibit, prepared by Ramboll Americas O'Brien & Gore Engineers, Inc., and hereby incorporated as Ext rights to include pedestrian and vehicular access, as necessary, rehabilitating the County sewer system, and the rights to perform type of work. The term of this Agreement shall be effective immed run for a period of 365 days beginning with the date of commend proximity to the Property. As consideration for the rights of entry set forth in the set forth in the Local Government Tort Claims Act, Sections 5-30 Proceedings Article, as amended, agrees on behalf of itself, its in indemnify, protect, and hold harmless the undersigned property any and all costs, liability, suits, and expenses in respect to any persons or property of any person, firm, or corporation (including 	s Engineering Solutions Inc., formerly known as hibit "A" respectively, to perform the Work, those , for the purposes of repairing, maintaining or n any tasks normally required for and related to this diately upon full execution hereof by both parties and cement of construction activities at or in close his Agreement, the County, subject to the limitations 01 through 5-304 of the Courts and Judicial respective successors, assigns, and licensees, to owners, its successors and assigns from and against and all loss of life, property, injury, or damages to
contractors, employees and licensees) and from and against an such loss, injury, or damages caused by or growing out of the W claims, demands, and/or actions were caused by the negligence employees, contractors or licensees.	y and all claims, demands, and actions in respect to Vork, provided said costs, liability, suits, expenses, e of the County, its successors, assigns, agents,
 4. The County will make reasonable efforts to restore County entered the Property pursuant to this Agreement. 5. The Property Owner hereby certifies to being the fe and title to grant the rights herein without the joinder or agreements of any other agreements or interests of others in the Property. 	e simple titleholder of the Property seized of the right
Property Dwner(s) Owner's Signature:	mer's Si thess: te: parlod or 6/29/27
Witness: Yohana Martio J Wit	iness:
Date: 1.77. 71 Da	te: navlat in 6/29/2
	ficonace pleifer

(0P1, d "/26/21

Baltimore County Job Order Number: 201-0077-7308 Date: N		ovember	15, 202	21		
A Consent for Access is hereby granted to the Baltimore County, Maryland, its						
employees, agents, contractors, and subcontractors, to enter upon the real property of:						
Owner (print): Lynhur:	st Property, LLC	Co-Owner (p	<mark>rint):</mark> Ten	ant R.E	. West	fransp.
Owner (signature): Chr	istopher Schuste	Co-Owner (s	ignature):	(931)	510-132	2
Property ID (address, m	ap ID): LYNHURST RE	0	Attn:	Robbie	Walker	
Subdivision/City/Town/C	County: DUNDALK				an Williams	
Maryland	Zip Code: 21222	Telephone	Number:	(41) -	833-830	3

This Consent for Access Agreement ("Agreement"), entered into and effective this <u>15th</u> day of <u>November</u>, <u>2021</u>, is by and between Baltimore County, Maryland, (the "County") and <u>Lynhurst Property</u>, <u>LLC</u> (the "Owner").

RECITALS

WHEREAS the County desires to enter upon portions of the Property to repair, rehabilitate or maintain Baltimore County's existing public sanitary sewer systems. To complete the structural rehabilitation, the County must have legal access to enter upon the Property to access the existing sanitary sewer (the "Work"); and

WHEREAS, the Property Owner is willing to grant the County, its officials, agents, employees, contractors and assigns (the "County"), permission to immediately enter the Property, which will include entry through any and all fences or gates, to perform the Work.

NOW THEREFORE, in consideration of the premises and such other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by the parties hereto, the Property Owner hereby covenants and agrees as follows:

1. Property Owner hereby grants this Letter of Permission to the County to enter upon the portions of the Property as shown Entry Exhibit, prepared by Ramboll Americas Engineering Solutions Inc., formerly known as O'Brien & Gere Engineers, Inc., and hereby incorporated as Exhibit "A" respectively, to perform the Work, those rights to include pedestrian and vehicular access, as necessary, for the purposes of repairing, maintaining or rehabilitating the County sewer system, and the rights to perform any tasks normally required for and related to this type of work.

2. The term of this Agreement shall be effective immediately upon full execution hereof by both parties and run for a period of 365 days beginning with the date of commencement of construction activities at or in close proximity to the Property.

3. As consideration for the rights of entry set forth in this Agreement, the County, subject to the limitations set forth in the Local Government Tort Claims Act, Sections 5-301 through 5-304 of the Courts and Judicial Proceedings Article, as amended, agrees on behalf of itself, its respective successors, assigns, and licensees, to indemnify, protect, and hold harmless the undersigned property owners, its successors and assigns from and against any and all costs, liability, suits, and expenses in respect to any and all loss of life, property, injury, or damages to persons or property of any person, firm, or corporation (including the parties hereto, their respective officers, agents, contractors, employees and licensees) and from and against any and all claims, demands, and actions in respect to such loss, injury, or damages caused by or growing out of the Work, provided said costs, liability, suits, expenses, claims, demands, and/or actions were caused by the negligence of the County, its successors, assigns, agents, employees, contractors or licensees.

4. The County will make reasonable efforts to restore the Property to the condition it was in before the County entered the Property pursuant to this Agreement.

5. The Property Owner hereby certifies to being the fee simple titleholder of the Property seized of the right and title to grant the rights herein without the joinder or agreement of any other party, and without violating the terms of any other agreements or interests of others in the Property.

for Lynhurst Property, LLC
Øwner's Signature:
Witness:
Date:

233

On behalf of R.E. West Transportation, Lessee/Occupant of the Property I agree that Baltimore County may enter the Demised Property to perform maintenance, work on the public sanitary sewer system.

Robert	Walker,	Authorized	Agent	of	R.E.	West	Inc.

alle

Baltimore County Job Order Number: 201-0077-7308 Date: November 15, 2021	1
A Consent for Access is hereby granted to the Baltimore County Maryland its	-
employees, agents, contractors, and subcontractors, to enter upon the real property of	
Owner (print): Lynnurst Property, LLC Co-Owner (print): Tenant - R E West T	rans
Owner (signature): Christopher Schuster Co-Owner (signature): (931) 510-1322	L'uno .
Property ID (address, map ID): LYNHURST RD	
Subdivision/City/Town/County: DUNDALK	
Maryland Zip Code: 21222 Telephone Number: (41) 833-8303	

This Consent for Access Agreement ("Agreement"), entered into and effective this <u>15th</u> day of <u>November</u>, <u>2021</u>, is by and between Baltimore County, Maryland, (the "County") and <u>Lynhurst Property</u>, <u>LLC</u> (the "Owner").

RECITALS

WHEREAS the County desires to enter upon portions of the Property to repair, rehabilitate or maintain Baltimore County's existing public sanitary sewer systems. To complete the structural rehabilitation, the County must have legal access to enter upon the Property to access the existing sanitary sewer (the "Work"); and

WHEREAS, the Property Owner is willing to grant the County, its officials, agents, employees, contractors and assigns (the "County"), permission to immediately enter the Property, which will include entry through any and all fences or gates, to perform the Work.

NOW THEREFORE, in consideration of the premises and such other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by the parties hereto, the Property Owner hereby covenants and agrees as follows:

1. Property Owner hereby grants this Letter of Permission to the County to enter upon the portions of the Property as shown Entry Exhibit, prepared by Ramboll Americas Engineering Solutions Inc., formerly known as O'Brien & Gere Engineers, Inc., and hereby incorporated as Exhibit "A" respectively, to perform the Work, those rights to include pedestrian and vehicular access, as necessary, for the purposes of repairing, maintaining or rehabilitating the County sewer system, and the rights to perform any tasks normally required for and related to this type of work.

2. The term of this Agreement shall be effective immediately upon full execution hereof by both parties and run for a period of 365 days beginning with the date of commencement of construction activities at or in close proximity to the Property.

3. As consideration for the rights of entry set forth in this Agreement, the County, subject to the limitations set forth in the Local Government Tort Claims Act, Sections 5-301 through 5-304 of the Courts and Judicial Proceedings Article, as amended, agrees on behalf of itself, its respective successors, assigns, and licensees, to indemnify, protect, and hold harmless the undersigned property owners, its successors and assigns from and against any and all costs, liability, suits, and expenses in respect to any and all loss of life, property, injury, or damages to persons or property of any person, firm, or corporation (including the parties hereto, their respective officers, agents, contractors, employees and licensees) and from and against any and all claims, demands, and actions in respect to such loss, injury, or damages caused by or growing out of the Work, provided said costs, liability, suits, expenses, claims, demands, and/or actions were caused by the negligence of the County, its successors, assigns, agents, employees, contractors or licensees.

4. The County will make reasonable efforts to restore the Property to the condition it was in before the County entered the Property pursuant to this Agreement.

5. The Property Owner hereby certifies to being the fee simple titleholder of the Property seized of the right and title to grant the rights herein without the joinder or agreement of any other party, and without violating the terms of any other agreements or interests of others in the Property.

Property Owner(s)	Contra da la contra
Christopher F. Schuster Attorney	for Lynhurst Property LLC
Owner's Signature: Wyleflers (flettely	Owner's Signature:
Witness:	Witness:
Date: November 15,2021	Date:
Authorized Agent	

234

On behalf of R.E. West Transportation, Lessee/Occupant of the Property, I agree that Baltimore County may enter the demised Property to perform maintenance work on the public sanitary

A Consent for Access is hereby granted to the Baltimore County, Maryland, is employees, agents, contractors, and subcontractors, to enter upon the real property of: Owner (print) If a number of the subcontractors, and subcontractors, to enter upon the real property of: Owner (signature) Decommer (grint) If a number of the subcontractors, and subcontractors, to subcontractors, and subcontractors, to subcontractors, and su	Baltimore County Job Order Number: 201-0077-7308 Date:	
Owner (print) CPLIM (I is Size no if Co-Owner (print): In print Signature) Advectors Owner (signature) Advectors Co-Owner (signature) Advectors Advectors Property ID (address; map ID): 7920 WISE AXE Subdivision/Clity/Town/County: DUNDALK Maryland Zip Code: 21222 Telephone Number: With Signature) Advectors This Consent for Access Agreement (Agreement'), entered into and effective tims With Signature) Signature) Figure 2014 Signature) Record advectors WHEREAS the County desires to enter upon portions of the Property to repair; rehabilitate or maintain Baltimore County's existing public sanitary sever systems. To complete the structural rehabilitation, the County must have legal access to enter upon the Property to access the existing sanitary sever (fer "Work"); and WHEREAS, the Property Owner is willing to grant the County, its officials, agents, employees, contractors and assigns (the "County"), permission to the property advectors, which will include entry through any and all fences or galactions to the Work. NOW THEREFORE, in consideration of the premises and such other good and valuable consideration, the receipt and satificiency of which is hereby achowledged by the partiles heretor, the "Yong", there advectors advectors, as necessary, for the purposes of repairing, maintaining or rehabilitating the County sever system, and the rights to perform any tasks normally required for and related to this type of work.		
Owner (signature): Description Co-Owner (signature): Co-Owner		
Property ID (address), map (D): 7920 WISE AVE Subdivision/City/Town/County: DUNDALK Maryland Zip Code: 2122 Telephone Number: (4/M) 52/L-4/H/L This Consent for Access Agreement (*Agreement'), entered into and effective this for a structure of the "Owner'). The county' and between Baltimore County, Maryland, (the "County") and the county' and the county's existing public sanitary sever systems. To complete the structural rehabilitation, the County must have legal access to enter upon portions of the Property to repair, rehabilitate or maintain Baltimore County sexisting public sanitary sever systems. To complete the structural rehabilitation, the County must have legal access to enter upon the Property to repair, enability sever (the "Work'), and WHEREAS, the Property Owner is willing to grant the County, its officials, agents, employees, contractors and assigns (the "County"), permission to immediately enter the Property, which will include entry through any and all lences or gates, to perform the Work. NOW THEREFORE, in consideration of the premises and such other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by the parties hereto, the Property Owner hereby covenants and agrees as follows: 1. Property Owner hereby grants this Letter of Permission to the County to enter upon the portions of the Property as hown. Entry Exhibit, prepared by Rambol Americas Engineering Solutions Inc., formerly Known as Offine A Cere Engineers, Inc., and hereby incorporated as Exhibit 'A "respectively, to perform the Work, those rights to include pedestrian and vehicular access, as necessary, for the purposes of repaining, maintaining or rehabilitating the County seve		7
Subdivision/City/Town/County: DUNDALK Maryland Zip Code: 21222 This Consent for Access Agreement ('Agreement'), entered into and effective this We day of Abs/2016/0000000000000000000000000000000000		u
Maryland Zip Code: 21222 Telephone Number: (HH) 5.2.6.446.6 This Consent for Access Agreement ('Agreement'), entered into and effective this		
This Consent for Access Agreement ('Agreement'), entered into and effective this		
Action proc. 2007 is by and between Baltimore County, Maryland, (the "County") and Sablo work (the "Owner"). RECITALS WHEREAS the County desires to enter upon portions of the Property to repair, rehabilitation, the County must have legal access to enter upon the Property to access the existing sanitary sewer (the "Work"); and WHEREAS, the Property Owner is willing to grant the County, its officials, agents, enclosed on the receipt and sufficiency of which is hereby acknowledged by the parties hereto, the Property Coverants and agrees as follows: 1. Property Owner hereby repairs this Letter of Permission to the County to enter upon the portions of the Property as shown Entry Exhibit, prepared by Rambol Americas Engineering Solutions Inc., formerly known as O'Brine & Gere Engineers, Inc., and hereby incorporated as Exhibit "A respectively, to perform the Work, those rights to include pedestrian and vehicular access, as necessary, for the purposes of repaining, maintaining or rehabilitating the County setting to grant the Edel of commencement to construction activities at or in colse proximity to the Property. 3. As consideration for the rights of entry set forth in this Agreement, the County, subject to the limitations set forth in the Local Government Tort Claims Act, Sections 5-301 through 5-304 of the Counts and Judicial Proceedings Article, as amended, agrees on behalf of fitself. Its respectively, to gertorm the additions set forth in the Local Government Tort Claims Act, Sections 5-301 through 5-304 of the County and Judicial proceedings Article, as amended, agrees on behalf of fitself. Its respectively, their engines, inclaims and and agrees to any and all claims, demands, and actions in respect to such these, inclus, and thereights of entry set forth in the Sort in the respective officers, agents, contractors or the rights of entry set forth in this Agreement, the County, subject to the limitations set forth in the Local Government Tort Claims Act, Sections 5-301 through 5-304 of the	Maryland Zip Code: 21222 Telephone Number: (410) 526-9760	
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and title to grant the rights herein without the joinder or agreement of any other party, and without violating the terms of any other agreements or interests of others in the Property. Property Owner(s) Owner's Signature: Witness: Date: 17-19-2 Date: 17-18-24	set forth in the Local Government Tort Claims Act, Sections 5-301 through 5-304 of the Courts and Judicial Proceedings Article, as amended, agrees on behalf of itself, its respective successors, assigns, and licensees, to indemnify, protect, and hold harmless the undersigned property owners, its successors and assigns from and against any and all costs, liability, suits, and expenses in respect to any and all loss of life, property, injury, or damages to persons or property of any person, firm, or corporation (including the parties hereto, their respective officers, agents, contractors, employees and licensees) and from and against any and all claims, demands, and actions in respect to such loss, injury, or damages caused by or growing out of the Work, provided said costs, liability, suits, expenses, claims, demands, and/or actions were caused by the negligence of the County, its successors, assigns, agents, employees, contractors or licensees. 4. The County will make reasonable efforts to restore the Property to the condition it was in before the	
Owner's Signature: Monda Jubo Withess: Self Date: 17-19-24 Date: 11-18-24 Date:	and title to grant the rights herein without the joinder or agreement of any other party, and without violating the terms	
Date: 11-19-21 Date: 11-18-21	all helinger Alige algor	ouste
	Witness: Self Witness: Self	
Put everything back The way you		
200	Put everything back The way you found i T235 ()	

Baltimore County Job Order Number: 201-007	7-7308 Date: 6/26/2021				
A Consent for Access is hereby granted to the Ba					
employees, agents, contractors, and subcontract					
Owner (print): TERRI LIMACCAUSIAND	Co-Owner (print):				
Owner (signature): Jerri J. MocCausland	Co-Owner (signature): 10/H				
Property ID (address, map ID): 7932 WISE AVE					
Subdivision/City/Town/County: DUNDALK	Talashara Number (1412) (1/ 20				
Maryland Zip Code: 21222	Telephone Number: (193) 453 - 4639				
This Consent for Access Agreement ("Agreement"), entered	e County, Maryland, (the "County") and				
RECI	TALS Opining				
WHEREAS the County desires to enter upon portions of the County's existing public sanitary sewer systems. To complee legal access to enter upon the Property to access the existi	ete the structural rehabilitatic				
WHEREAS, the Property Owner is willing to grant the Cour assigns (the "County"), permission to immediately enter the fences or gates, to perform the Work.	nty, its officials, agents, emply On 62621 Property, which will include				
NOW THEREFORE, in consideration of the premises and s and sufficiency of which is hereby acknowledged by the par agrees as follows:					
Property as shown Entry Exhibit, prepared by Ramboll Ame O'Brien & Gere Engineers, Inc., and hereby incorporated a rights to include pedestrian and vehicular access, as neces rehabilitating the County sewer system, and the rights to pe type of work.	as Exhibit "A" respectively, to perform the Work, those sary, for the purposes of repairing, maintaining or erform any tasks normally required for and related to this				
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of any other agreements or interests of others in the Property.					
Property Owner(s)					
Owner's Signature. Levri S. Mar Caus low	Owner's Signature:				
Witness: Patti Brosun	Witness:				
Date: 10/26/2021	Date:				

Baltimore County Job Order Number:	Date: 8/16/2021							
A Consent for Access is hereby granted to the Baltimore County, Maryland, its								
employees, agents, contractors, and subcontractors, to enter upon the real property of:								
Owner (print): TERRI L. MACCAUS AND CO	o-Owner (print):							
Owner (signature): Jerri S. Mac Causland Co	o-Owner (signature): N/IT							
Property ID (address, map ID): 7932 WISE AVE								
Subdivision/City/Town/County: DUNDALK								
Maryland Zip Code: 21222	Telephone Number: (410) 285-7018							
Hugu St , 2021, is by and between Baltimore Co	This Consent for Access Agreement ("Agreement"), entered into and effective this day of							
RECITAL	LS							
WHEREAS the County desires to enter upon portions of the Pr County's existing public sanitary sewer systems. To complete legal access to enter upon the Property to access the existing s	the structural rehabilitation, the County must have							
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Property Owner(s)								
Owner's Signature: Perry 3. Mar Countand O	Owner's Signature:							
	Vitness:							
	Date:							

X Please note I did not miss your first letter. I responded as soon as I received it. Did you miss my respone? I've enclosed another copy in case you did. Perhaps it is still rerhaps it is still JOHN OLSZEWSKI, Jr. Sitting in a post office some where with my County Executive Acting Director Marine Department of Public Works and Transportation Sincerly, P. Brosious **DID YOU MISS OUR FIRST LETTER?** THIS IS OUR SECOND ATTEMPT TO REACH YOU. PLEASE RESPOND TO THIS IMPORTANT LETTER! August 6, 2021

Dear PATTI ANN BROUSIOUS:

We are pleased to tell you that Baltimore County is improving many parts of our sewer system to help protect our streams, rivers and the Chesapeake Bay. We need your help. To complete this important work, we need to access your property at 7934 WISE AVE, DUNDALK, MD, 21222 to reach the manholes and sewer lines.

Enclosed is a map of your property that shows where we need to either travel across your property or make repairs to the sewer system located within your property's boundaries. On the back of the map is an agreement. We respectfully ask that you sign the agreement to give us temporary rights to access your property.

We are now in the design phase for this work and expect to be on site sometime between Spring 2022 and Summer 2023; we will notify you by mail before construction begins. We are happy to work with you to avoid conflicting with outdoor events and family functions, if possible. A Baltimore County representative will closely watch over the work to limit the disturbance to your property. When finished, the contractor will restore the disturbed area to a condition similar to how we found it.

Please sign, date and fill in **all highlighted areas** on both copies of the enclosed agreement **and mail one copy to us within 5 days** using the enclosed postage-paid envelope. Keep the other copy for your records. Baltimore County thanks you in advance for your cooperation and for doing your part to improve the sanitary sewer system and to protect our streams, rivers, and the Chesapeake Bay. If you have any questions, please call me, Gary Moore, at (301) 731-4808 or email me at gmoore@bryant-engrs.com.

Sincerely,

Gary Moore Right of Entry Coordinator Bryant Associates On behalf of the Baltimore County Department of Public Works and Transportation

Enclosure



Baltimore County Job	Order Number: 201-00	077-7308	Date:	6	26	21
A Consent for Access is	hereby granted to the	Baltimore Cou	nty, Mar	ylan	d, its	
employees, agents, con	tractors, and subcontra	actors, to enter i	upon the	real	prop	erty of:
Owner (print): Patti 7	prosious	Co-Owner (p	rint):	_ /	JJF	ł
Owner (signature): Pa	ti Brossi	Co-Owner (s	ignature)	:		
Property ID (address, m	ap ID): 7934 WISE AV	Έ				
Subdivision/City/Town/C	County: DUNDALK					
Maryland	Zip Code: 21222	Telephone	e Numbe	r. (41	0) 2	84-7379
						22.10

This Consent for Access Agreement ("Agreement"), entered into and effective this _____ day of ______, 2021___, is by and between Baltimore County, Maryland, (the "County") and ______ (the "Owner").

RECITALS

WHEREAS the County desires to enter upon portions of the Property to repair, rehabilitate or maintain Baltimore County's existing public sanitary sewer systems. To complete the structural rehabilitation, the County must have legal access to enter upon the Property to access the existing sanitary sewer (the "Work"); and

WHEREAS, the Property Owner is willing to grant the County, its officials, agents, employees, contractors and assigns (the "County"), permission to immediately enter the Property, which will include entry through any and all fences or gates, to perform the Work.

NOW THEREFORE, in consideration of the premises and such other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by the parties hereto, the Property Owner hereby covenants and agrees as follows:

1. Property Owner hereby grants this Letter of Permission to the County to enter upon the portions of the Property as shown Entry Exhibit, prepared by Ramboll Americas Engineering Solutions Inc., formerly known as O'Brien & Gere Engineers, Inc., and hereby incorporated as Exhibit "A" respectively, to perform the Work, those rights to include pedestrian and vehicular access, as necessary, for the purposes of repairing, maintaining or rehabilitating the County sewer system, and the rights to perform any tasks normally required for and related to this type of work.

2. The term of this Agreement shall be effective immediately upon full execution hereof by both parties and run for a period of 365 days beginning with the date of commencement of construction activities at or in close proximity to the Property.

3. As consideration for the rights of entry set forth in this Agreement, the County, subject to the limitations set forth in the Local Government Tort Claims Act, Sections 5-301 through 5-304 of the Courts and Judicial Proceedings Article, as amended, agrees on behalf of itself, its respective successors, assigns, and licensees, to indemnify, protect, and hold harmless the undersigned property owners, its successors and assigns from and against any and all costs, liability, suits, and expenses in respect to any and all loss of life, property, injury, or damages to persons or property of any person, firm, or corporation (including the parties hereto, their respective officers, agents, contractors, employees and licensees) and from and against any and all claims, demands, and actions in respect to such loss, injury, or damages caused by or growing out of the Work, provided said costs, liability, suits, expenses, claims, demands, and/or actions were caused by the negligence of the County, its successors, assigns, agents, employees, contractors or licensees.

4. The County will make reasonable efforts to restore the Property to the condition it was in before the County entered the Property pursuant to this Agreement.

5. The Property Owner hereby certifies to being the fee simple titleholder of the Property seized of the right and title to grant the rights herein without the joinder or agreement of any other party, and without violating the terms of any other agreements or interests of others in the Property.

Property Owner(s)	
Owner's Signature: Patri Brosion	Owner's Signature:
Witness: Ten: MocCaulond	Witness:
Date: 1/2/0/21	Date:

Baltimore County Job Order Number: 201-0077-	7308 Date: 7/21/2021				
A Consent for Access is hereby granted to the Ball					
employees, agents, contractors, and subcontractors, to enter upon the real property of:					
Owner (print): Rev. Muthia Moser Co-Owner (print): Kimberly Sounder					
	Co-Owner (signature): Kurluy Aonder				
Property ID (address, map ID): 1624 LYNCH RD					
Subdivision/City/Town/County: DUNDALK	0				
Maryland Zip Code: 21222	Telephone Number: (4/0)288-5136				
This Consent for Access Agreement ("Agreement"), entered in 2019 2019 2021, is by and between Baltimore Conserved to the Agreement (the Agre					
RECITA	ALS				
WHEREAS the County desires to enter upon portions of the F County's existing public sanitary sewer systems. To complete legal access to enter upon the Property to access the existing	e the structural rehabilitation, the County must have				
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Property Owner(s)					
Owner's Signature: Act With M	Owner's Signature: Knubulh Anyther				
	Witness: For Martho MA				
	1 2221				
(A) 20 X1	Date: 7/21/2021				

SECTION IV

Proposal

This Section to be Completed by Time of Bid

<u>SECTION-IV</u> PROPOSAL

DESCRIPTION OF WORK

Bid Opening via Teleconference WebEx <u>Thursday, March 27, 2025 at 10:30 a.m. EST</u> WebEx Phone Number 1-415-655-0001, Access Code Number 2305 461 7161##.

Begin Work Within Fifteen (15) Days After NOTICE TO PROCEED

Calendar Days for Completion: Four Hundred (400)

Liquidated and Other Damages:

Day 1 through Day 30 - \$2,000 per Calendar Day Day 31 through Day 60 - \$3,500 per Calendar Day Day 61 and thereafter - \$6,500 per Calendar Day

Cost Group <u>"F (\$5,000,001 to \$10,000,000)"</u> (Prequalified contractors with a Cost Group restriction must bid within the dollar amount stated on their Certificate of Prequalification).

Work Classification: <u>F-6</u>

TO BALTIMORE COUNTY, MARYLAND: <u>Work includes mobilization, clearing and grubbing; demolition (if</u> required); structural rehabilitation of the collection system, including manholes, laterals, and sewers through excavation or trenchless means; traffic control; all related excavation, shoring, dewatering, backfill; base and surface pavement replacement; landscaping and restoration; testing; and demobilization. District 12, 15 c 7.

The following listed Drawing Number(s) are collectively the "Drawings", and are hereby incorporated in the Contract.

Job Order Number Workday Number

231-203-0077-7308 010777308

2021-2618 through 2021-2677

Drawing Number(s)

A pre-bid meeting will be held on Wednesday, March 5, 2025 at 10:00 a.m. EST via WebEx. *Phone-In (Audio Only)* – 1-415-655-0001, Meeting Number 2301 988 7868## *Video Conference* – Meeting Number 2301 988 7868, **Password HcmPTAfK636**, go to <u>https://signin.webex.com/join</u>,or for the WebEx link go to <u>www.baltimorecountymd.gov/departments/public-works/engineering/contracts/current-solicitations</u>

NOTE: No successful bidder may withdraw their bid within NINETY (90) days after the opening thereof.

The Contractor hereby declares that it has carefully examined the solicitation, plans and specifications, form of contract, Special Provisions and Drawings (collectively the "Contract Documents"). The Contractor also hereby declares that it has carefully examined the September 2023 "Standard Specifications for Construction and Materials" and "Standard Details for Contraction", collectively the "Applicable County Law" and any and all Department of Public Works and Transportation revisions thereto as of the date of advertisement. The Contract Documents, the Applicable County Law and the Department of Public Works and Transportation revisions thereto are collectively the "Specifications" and are incorporated herein. Copies of any and all Department of Public Works and Transportation revisions including but not limited to the General Conditions Building Projects, are available online at <u>www.baltimorecountymd.gov/departments/public-works/standards</u>. Also, the Contractor has, to its satisfaction, examined the locality of the proposed work and agrees to furnish all labor, tools, materials, machinery, equipment, and other means of construction called for in the manner provided in the Specifications for the prices shown on the next page(s) and as evidenced by Contractor's signature on the last page thereof.

SCHEDULE OF PRICES

NOTE: The Bidder shall fill out this Proposal, write in the unit prices in clear numerals, and make the extensions.

For complete information concerning these items, see Specifications and contract forms.

CONTRACT PROPOSAL

GRAY MANOR INTERCEPTOR REHABILITATION CONTRACT NUMBER 21202 SX0 WORKDAY NUMBER 010777308 JOB ORDER NUMBER 231-203-0077-7308 FOUR HUNDRED (400) CALENDAR DAYS

CONTRACTOR: ADDRESS: PHONE:

BID ITEM	COMM. CODE		DESCRIPTION	UNIT	ESTIMATED QUANTITY		TOTAL AMOUNT
1			MOBILIZATION / DEMOBILIZATION	LS	1		\$
2		F	TEST PIT EXCAVATION (TRADITIONAL METHOD)	CY	31	\$360.00	\$11,160.00
3		С	STORM DRAIN INLET PROTECTION	EA	5		\$
4		С	TREE PROTECTION FENCING	LF	75		\$
5		С	SILT FENCE	LF	750		\$
6			SUPER SILT FENCE	LF	6,053		\$
7			BORROW MATERIAL (WITH OFF-SITE DISPOSAL OF UNSUITABLE SOILS)	CY	5	\$80.00	\$400.00
8		F	CLASS 3 EXCAVATION & BACKFILL (WITH OFF-SITE DISPOSAL OF UNSUITABLE SOILS)	CY	5	\$130.00	\$650.00
9		С	TREE REMOVAL >10" DIAMETER BREAST HEIGHT (DBH)	EA	2		\$
10		С	CYCLONE FENCE, 4' HEIGHT	LF	530		\$
11			SIDEWALK REPLACEMENT	SF	90		\$
12			CONCRETE APRON REPLACEMENT	SF	90		\$

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13		CURB & GUTTER REPLACEMENT	LF	60	\$
14		CLEARING AND GRUBBING (INCLUDING TREES LESS THAN 10" DIAMETER BREAST HEIGHT)	LS	1	\$
15		STABILIZED CONSTRUCTION ENTRANCE	EA	10	\$
16	С	STABILIZED CONSTRUCTION ENTRANCE	EA	5	\$
17		HEAVY DUTY MULCH ACCESS MAT	SY	6,479	\$
18	С	HEAVY DUTY MULCH ACCESS MAT	SY	500	\$
19	С	GRAVEL ACCESS MAT	SY	100	\$
20	С	CONTINGENT TREE TRUNK PROTECTION	EA	15	\$
21		CIPP LINING OF 8" SEWER	LF	392	\$
22		CIPP LINING OF 15" SEWER	LF	427	\$
23		CIPP LINING OF 30" SEWER	LF	1,837	\$
24		CIPP LINING OF 33" SEWER	LF	2,351	\$
25		CIPP LINING OF 36" SEWER	LF	2,939	\$
26		CIPP LINING OF 42" SEWER	LF	1,147	\$
27		CIPP LINING OF 48" SEWER	LF	6,438	\$
28		ALTERNATE CIPP LINING OF 48" SEWER (PIPE SEGMENTS BETWEEN MH 44905 & MH 44903)	LF	266	\$
29		GEOPOLYMER LINING OF 48" SEWER (PIPE SEGMENTS BETWEEN MH 44905 & MH 44903, AND 41457 & NEW MH #3)	LF	266	\$
30		GEOPOLYMER LINING OF 33" SEWER (PIPE SEGMENTS BETWEEN MH 41457 & NEW MH #3)	LF	20	\$
31		PVC POINT REPAIR (EXCAVATE AND REPAIR) 30" SEWER, (UP TO 12- FEET DEEP)	LF	30	\$

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32	С	SUPPLEMENTAL HEAVY CLEANING OF SEWERS	LF	2,372	\$
33		12" SEWER RECONFIGURATION @ MH 44912	EA	1	\$
34		FINAL ACCEPTANCE CCTV INSPECTION 8" - 15" SEWER	LF	819	\$
35		FINAL ACCEPTANCE CCTV INSPECTION 30" - 48" SEWER	LF	15,846	\$
36		BRIM STYLE CIPP SEWER HOUSE CONNECTION LATERAL SEAL	EA	1	\$
37		FULL CIRCUMFERENTIAL CIPP SEWER HOUSE CONNECTION LATERAL SEAL	EA	4	\$
38	С	AIR TEST AND GROUT SHC	EA	9	\$
39		NEW 60-INCH DIAMETER PRECAST MANHOLE	VF	23	\$
40		NEW 72-INCH DIAMETER DOGHOUSE MANHOLE	VF	15	\$
41		MANHOLE REHAB (EPOXY)	VF	828	\$
42		REPLACE MANHOLE FRAME & COVER	EA	1	\$
43		REPLACE MANHOLE FRAME & COVER (WATERTIGHT)	EA	3	\$
44		RESET MANHOLE FRAME & COVER	EA	2	\$
45		REBUILD MANHOLE BENCH AND CHANNEL	EA	1	\$
46		EXTERIOR MANHOLE CONE REFINISHING	VF	3	\$
47	С	SET-UP BYPASS PUMPING SYSTEM (1.00 MGD - 3.00 MGD)	EA	1	\$
48		SET-UP BYPASS PUMPING SYSTEM (3.01 MGD - 6.00 MGD)	EA	1	\$
49	С	SET-UP BYPASS PUMPING SYSTEM (6.01 MGD - 9.00 MGD)	EA	1	\$
50		SET-UP BYPASS PUMPING SYSTEM (9.01 MGD - 12.00 MGD)	EA	3	\$

51	SET-UP BYPASS PUMPING SYSTEM (OVER 12.00 MGD)	EA	2		\$	
52	OPERATE SEWAGE BYPASS PUMPING SYSTEM	LS	1		\$	
TOTAL COST FOR CONTRACT						

TOTAL COST FOR CONTRACT IN WORDS

OFFICER SIGNATURE

TITLE

PROPOSAL AFFIDAVIT

1. AUTHORIZED REPRESENTATIVE

I HEREBY AFFIRM THAT:

I am the [title]_____and the duly authorized representative of [business]_____(the "Business") and that I possess the legal authority to make this Affidavit on behalf of myself and the Business for which I am acting.

2. PROPOSAL CERTIFICATION

THE UNDERSIGNED HEREBY ACKNOWLEDGES receipt of the following Addenda (list by number and date):

Accompanying this Proposal is a Bid Bond in an amount of 5% of the bid, the exact amount to be determined by the difference between the low bid and the next lowest bid, if two or more bids are received, or 5% of the bid if one bid is received. This guarantees payment to Baltimore County of the amount thus determined as liquidated damages in case of default in any matter specified as required before award or in any matter resulting in failure to execute and deliver an Agreement, together with Payment and Performance Bonds, after award.

3. AFFIRMATION REGARDING BRIBERY CONVICTIONS

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the Business, nor any of its officers, directors, partners, or any of its employees directly involved in obtaining or performing contracts with public bodies (as is defined in Section 16-101(f) of the State Finance and Procurement Article of the Annotated Code of Maryland), has been convicted of, or has had probation before judgment imposed pursuant to Section 6-225 of the Criminal Procedure Article of the Annotated Code of Maryland, or has pleaded nolo contendere to a charge of, bribery, attempted bribery, or conspiracy to bribe in violation of Maryland law, or of the law of any other state or federal law, except as follows [indicate the reasons why the affirmation cannot be given and list any conviction, plea, or imposition of probation before judgment with the date, court, official or administrative body, the sentence or disposition, the name(s) of person(s) involved, and their current positions and responsibilities with the Business]:

4. AFFIRMATION REGARDING OTHER CONVICTIONS

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the Business, nor any of its officers, directors, partners, or any of its employees directly involved in obtaining or performing contracts with public bodies, has:

(1) Been convicted under state or federal statute of a criminal offense incident to obtaining, attempting to obtain, or performing a public or private contract, fraud, embezzlement, theft, forgery, falsification or destruction of records, or receiving stolen property;

(2) Been convicted of any criminal violation of a state or federal antitrust statute;

(3) Been convicted under the provisions of Title 18 of the United States Code for violation of the Racketeer Influenced and Corrupt Organization Act, 18 U.S.C. §1961, et seq., or the Mail Fraud Act, 18 U.S.C. §1341, et seq., for acts arising out of the submission of bids or proposals for a public or private contract;

(4) Been convicted of a violation of the State Minority Business Enterprise Law, Section 14-308 of the State Finance and Procurement Article of the Annotated Code of Maryland;

(5) Been convicted of conspiracy to commit any act or omission that would constitute grounds for conviction or liability under any law or statute described in subsection (1), (2), (3), or (4) above;

(6) Been found civilly liable under a state or federal antitrust statute for acts or omissions in connection with the submission of bids or proposals for a public or private contract;

(7) Admitted in writing or under oath, during the course of an official investigation or other proceedings, acts or omissions that would constitute grounds for conviction or liability under any law or statute described above, except as follows [indicate reasons why the affirmations cannot be given, and list any conviction, plea, or imposition of probation before judgment with the date, court, official or administrative body, the sentence or disposition, the name(s) of the person(s) involved and their current positions and responsibilities with the Business, and the status of any debarment]:

5. AFFIRMATION REGARDING DEBARMENT

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the Business, nor any of its officers, directors, partners, or any of its employees directly involved in obtaining or performing contracts with public bodies, has ever been suspended or debarred (including being issued a limited denial of participation) by any public entity, except as follows [list each debarment or suspension providing the dates of the suspension or debarment, the name of the public entity and the status of the proceeding, the name(s) of the person(s) involved and their current positions and responsibilities with the Business, the grounds of the debarment or suspension, and the details of each person's involvement in any activity that formed the grounds of the debarment or suspension]:

6. AFFIRMATION REGARDING DEBARMENT OF RELATED ENTITIES

I FURTHER AFFIRM THAT:

(1) The Business was not established and it does not operate in a manner designed to evade the application of or defeat the purpose of debarment pursuant to Sections 16-101, et seq., of the State Finance and Procurement Article of the Annotated Code of Maryland; and

(2) The Business is not a successor, assignee, subsidiary, or affiliate of a suspended or debarred business, except as follows: [you must indicate the reasons why the affirmations cannot be given without qualification]:

Rev. 09/2024

7. SUB-CONTRACT AFFIRMATION

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the Business, has knowingly entered into a contract with a public body under which a person debarred or suspended under Title 16 of the State Finance and Procurement Article of the Annotated Code of Maryland will provide, directly or indirectly, supplies, services, architectural services, construction related services, leases of real property, or construction.

8. AFFIRMATION REGARDING COLLUSION

I FURTHER AFFIRM THAT:

Neither I, nor to the best of my knowledge, information, and belief, the Business, nor any of its officers, directors, members or partners, nor any of its employees, have in any way:

(1) Agreed, conspired, connived, or colluded to produce a deceptive show of competition in the compilation of the accompanying bid or offer that is being submitted;

(2) In any manner, directly or indirectly, entered into any agreement of any kind to fix the bid price or price proposal of the bidder or offeror or of any competitor, or otherwise take any action in restraint of free competitive bidding in connection with the contract for which the accompanying bid or offer is submitted;

(3) Colluded with anyone to obtain information concerning the bid that would give the Business an unfair advantage over others.

9. POLITICAL CONTRIBUTION DISCLOSURE AFFIRMATION

I FURTHER AFFIRM THAT:

The Business affirms that it is aware of, and will comply with, the provisions of Sections 14- 101 through 14-108 of the Election Law Article of the Annotated Code of Maryland, which require that every person who makes, during any 12-month period, one or more contracts, with one or more Maryland governmental entities involving cumulative consideration, or at least \$200,000.00, shall file with the State Board of Elections certain specified information to include disclosure of attributable political contributions in excess of \$500 during defined reporting periods.

10. CERTIFICATION OF CORPORATION REGISTRATION AND TAX PAYMENT

I FURTHER AFFIRM THAT:

(1) The Business is a <u>(State)</u> (Corporation), (LLC), (Partnership), (Sole Proprietor/Individual), (Other: <u>)</u>, that it **is** registered in accordance with the Corporations and Associations Article of the Annotated Code of Maryland, that it **is** in good standing in the State of Maryland, and that it **has** filed all of its annual reports, together with filing fees, with the Maryland State Department of Assessments and Taxation, and that the name and address of its resident agent filed with the State Department of Assessments and Taxation is:

(If none, so state)

(2) Except as validly contested, the Business has paid, or has arranged for payment of, all taxes due the State of Maryland and Baltimore County, and has filed all required returns and reports with the Comptroller of the Treasury, the State Department of Assessments and Taxation, and the Employment Security Administration, as applicable, and will have paid all withholding taxes due the State of Maryland prior to final settlement.

11. CONTINGENT FEES

I FURTHER AFFIRM THAT:

The Business has not employed or retained any person, partnership, corporation, or other entity, other than a bona fide employee or agent working for the Business, to solicit or secure the Contract, and that the Business has not paid or agreed to pay any person, partnership, corporation, or other entity, other than a bona fide employee or agent, any fee or other consideration contingent on the making of the Contract.

12. NONDISCRIMINATION IN EMPLOYMENT STATEMENT

I FURTHER AFFIRM THAT:

During the performance of any contract awarded of which this affidavit is a part:

(1) The Business will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, national origin, marital status, sexual orientation, genetic information, or disability unrelated in nature and extent so as to reasonably preclude the performance of the employment, or because of the individual's refusal to submit to a genetic test or make available the results of a genetic test. The Business will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, age, national origin, marital status, sexual orientation, genetic information, or disability unrelated in nature and extent so as to reasonably preclude the performance of the employment, or because of the individual's refusal to submit to a genetic test or make available titest. Such action shall include, but not be limited to the following: employment, promotion, upgrading, demotion or transfer, rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Business agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the owner setting forth provisions of this nondiscrimination clause.

(2) The Business will, in all solicitations or advertisements for employees placed by or on behalf of the Business, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age, national origin, marital status, sexual orientation, genetic information, or disability unrelated in nature and extent so as to reasonably preclude the performance of the employment, or because of the individual's refusal to submit to a genetic test or make available the results of a genetic test.

(3) The Business shall send to each labor union or representative of workers with which the Business has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the owner, advising the said labor union or workers' representative of these commitments, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The Business shall furnish, if requested by the County, a compliance report concerning our employment practices and policies in order for the County to ascertain compliance with the special provisions of this affidavit concerning nondiscrimination in employment.

(5) In the event of the Business's noncompliance with the nondiscrimination clause of this affidavit, the contract may be canceled, terminated, or suspended in whole or in part, and the Business may be declared ineligible for further County work.

(6) The Business shall include the special provisions outlined herein pertaining to nondiscrimination in employment in every subcontract, so that such nondiscrimination in employment provisions shall be binding on each subcontractor or vendor.

13. FOREIGN CONTRACTS

I FURTHER AFFIRM THAT:

The Business affirms that it is aware of, and will comply with, the provisions of Sections 10-2-110 Article 10. Finance, Title 2 – Purchasing, Baltimore County Code 2003, which requires that prior to the award of a contract for services under the provisions of this title, and during the entire term of a contract award, the bidder or vendor shall disclose to the County whether any services covered by the bid or contract, including any subcontracted services, will be performed outside the United States. The disclosure shall be made to the Office of Budget and Finance, Purchasing Bureau.

14. MINORITY BUSINESS ENTERPRISE AND FEMALE CONTRACTORS

THIS BUSINESS INTENDS to affirmatively seek out and consider minority business enterprises to participate in this contract as subcontractors and/or suppliers of materials and services.

THE UNDERSIGNED UNDERSTANDS AND AGREES: that any and all subcontracting of supplies and services in connection with this contract, whether undertaken before or after award of contract, will be in accordance with the Minority Business Enterprise and Female Contractor requirement included in the Bid Proposal package and incorporated herein as if fully set forth; and

THE UNDERSIGNED ALSO UNDERSTANDS AND AGREES that no subcontracting will be approved until Baltimore County has reviewed and approved the affirmative actions taken by this firm.

15. REQUIREMENTS FOR EXECUTING AFFIDAVIT & PROPOSAL

The Affidavit must be signed in ink in order for the bid to be accepted and that the Proposal must be typewritten or filled out in ink.

THE UNDERSIGNED ALSO UNDERSTANDS that:

Proposals submitted by an INDIVIDUAL must be signed by an individual.

Proposals submitted by a PARTNERSHIP must be signed by the partner who is legally authorized authority to bind the partnership. Attach a copy of the Partnership Agreement and a duly certified resolution evidencing the authority of the partner so signing on behalf of the partnership.

Proposals submitted by a CORPORATION must be signed by a legally authorized officer of the corporation and attested to by the Corporate Secretary. Attach a copy of the Articles of Incorporation, By-Laws and a duly certified Board Resolution evidencing the authority of the officer so signing on behalf of the corporation.

Proposals submitted by a LIMITED LIABILITY COMPANY must be signed by a legally authorized member of the company and attested to. Attach a copy of the Operating Agreement, Articles of Organization and a duly certified resolution evidencing the authority of the member so signing on behalf of the limited liability company.

NOTE: The contractor may file with the County a list of the names of those officers, partners or members, as applicable, having legal authority to execute documents on behalf of and legally bind the contractor, duly certified, as applicable and legally required, together with the aforesaid corporate documents, which shall remain in full force and effect until such time as the County Department of Public Works and Transportation, Construction Contract Administration is advised in writing to the contrary.

16. ACKNOWLEDGMENT

I ACKNOWLEDGE THAT this Affidavit is to be furnished to the County and may be distributed to units of (1) Baltimore County; (2) the State of Maryland; (3) other counties or political subdivisions of the State of Maryland; (4) other states; and (5) the federal government. I further acknowledge that this Affidavit is subject to applicable laws of the United States and the State of Maryland, both criminal and civil, and that nothing in this Affidavit or any contract resulting from the submission of this bid or proposal shall be construed to supersede, amend, modify or waive, on behalf of Baltimore County, or the State of Maryland or any unit of the State of Maryland having jurisdiction, the exercise of any statutory right or remedy conferred by the Constitution and the laws of Maryland with respect to any misrepresentation made or any violation of the obligations, terms and covenants undertaken by the Business with respect to (a) this Affidavit, (b) the contract, and (3) other Affidavits comprising part of the contract.

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THIS AFFIDAVIT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF.

WITNESS/ATTEST:

_____ By: _

Date:

Name: _____

BID BOND

Principal	Business A	Address of Principal	
Surety	Obligee:	BALTIMORE COUNT A body corporate	,
A Corporation of the State of	and authorized to de	o business in Maryland	
Five Percent of Bid Amount		\$	5% of Bid
Penal Sum of Bond [shall be determined pursuant to latest	t revised Specification / G	G.P. 2.07 (2000 Ed.)]	
Gray Manor Interceptor Rehabilitation Contract Name			
21202 SX0			

KNOW ALL MEN BY THESE PRESENTS, that we, the Principal, above named, and Surety, above named, and authorized to do business in the State of Maryland, are held and firmly bound unto the Obligee, above named, in the penal sum of the amount stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that if the aforesaid Principal is the apparent low bidder and complies with all specified matters required before award or if the aforesaid Principal is awarded the contract, the said Principal will, within the time required, execute and deliver to the Obligee a formal contract and good and sufficient payment and performance bonds in the form provided by the Obligee, then, this obligation to be void; otherwise the Principal and Surety will, upon demand, pay unto the Obligee the entire Penal Sum of this Bid Bond as liquidated damages.

THE SURETY FURTHER GUARANTEES No Proposal will be considered unless accompanied by a guaranty of the amount specified in the Proposal in the form of either a certified check, bank cashier's check or a Bid Bond on the form provided therein or an exact facsimile thereof. The Bid Bond must be executed by a Surety that is, as of the date of the Bid: (a) licensed in the State of Maryland, (b) rated "B" or better by the A.M. Best Company, (c) on federal funded projects, authorized by the underwriting limitation contained in the U.S. Department of the Treasury Circular 570, as amended, to guaranty the amount of the Bid, and (d) in good standing as determined by the County's Engineer. The Bid Bond must guaranty payment to the County of liquidated damages as follows: (a) if only one Bid is received, the guaranteed payment shall be five (5%) percent of the Bidder's Bid amount, (b) if two or more Bids are received, the guaranteed payment shall be the difference between the Bidder's Bid amount, and the next lowest Bid amount, subject to the limitation that the guaranteed payment not be greater than five (5%) percent of the Bidder's Bid amount. This Bid Bond is required in case the successful Bidder, after issuance of notice of Award, fails to comply, timely and completely, with each of the requirements set forth under Section GP-3.04.

Signed and sealed

Date

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals on the date indicated above, 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 Presence of:	Individual Principal	
Witness:	as to:	(SEAL)
Print Name:	Print Name:	
In Presence of:	Corporate Principal	
	(Name of Corporation)	
Witness:	Ву:	
Print Name:	Print Name:	(SEAL)
	Title:	
	Surety	
	(Name of Surety) Business Address:	
Witness:	Ву:	Affix
Print Name:	Print Name:	Corporate
	Title:	Seal

BALTIMORE COUNTY PREVAILING WAGE AND LOCAL HIRING

A<u>FFIDAVIT</u>

(Project Name)	
Proposal No.:	
Project No.:	

On behalf of

_____, I do solemnly declare and affirm,

under penalty of perjury, that to the best of my knowledge, information, and belief:

1. I have submitted all documentation in accordance with Baltimore County Code § 10-2-506 and § 10-2-507 regarding the prevailing wage and local hiring laws and requirements of the prevailing wage guidelines located at (<u>Prevailing Wage and Local Hire Laws</u>), and acknowledge that I have read and agree to all provisions of said law, as amended, and have a continuing obligation to be compliant with the law and any changes to the law.

2 I shall not knowingly provide any false information relating to payroll documentation and/or hiring of local employees for capital improvement contracts that are subject to the prevailing wage and/or local hiring laws of Baltimore County. I further attest and certify that all documentation relating to the same will be accurate and complete and will remain accurate and complete on an ongoing basis, and will reflect the payroll and/or local hiring status of contractors, subcontractors, apprentices, and independent contractors performing work for the Contract (contract n u m be r______). I acknowledge that I have been informed and am aware of the foregoing requirements and that I am authorized to make this certification on behalf of myself and all subcontractors and parties performing work pursuant to this Contract.

3. I certify and attest that I am an officer or agent of the Contractor or subcontractor who supervises the payment of employees. I understand and agree that all documentation related to prevailing wages and/or local hiring required by law shall be submitted to Baltimore County's Prevailing Wage Administrator or designee before any surety is released or final payment due under the terms of the Contract is made.

4. I further certify and attest that I will have personal knowledge of the wages paid to all employees of _______ for work performed on the Contract and of all of the hours worked, and that I am an authorized agent of the Contractor and assume responsibility for my actions.

5. I further certify and attest that ______will comply with prevailing wage rates set by the State of Maryland as the same apply to the Contract and are a part of the bid documents and Contract, and that ______will comply with applicable local hiring requirements. 6. I attest and certify that, if the Contract is subject to the local hiring requirement under §10-2-507 of the Baltimore County Code, _______ will make best efforts to ensure that residents of Baltimore County constitute at least 51% of the new hires made for the Contract, subject to all exceptions allowable by law.

7. I certify and attest that, if the Contract is subject to prevailing wage requirements, no rebates or deductions will be made, directly or indirectly, from any wages paid in connection with the Contract, other than those provided for by law.

8. I certify and attest that, if awarded the Contract and if the Contract is subject to prevailing wage law, I will submit certified payroll to the County through its electronic compliance system or as instructed by the Prevailing Wage and Local Hire Unit.

9. I certify that if awarded the Contract, I will provide a list of subcontractors who will participate as a beneficiary of this project to the agency and the Prevailing Wage and Local Hire Unit at PrevailingWage@baltimorecountymd.gov.

10. I understand that no funds will be dispersed by the County until an Employment Analysis has been issued to the Prevailing Wage and Local Hire Unit in compliance with the local hire law. The Employment Analysis will include how many jobs will be required to complete the project; how many current employees are available to complete the project, and how many of those jobs will require new hires.

Contra	ctor/Bidder/Offer	or	
By			
Printec	Name		
Printec	Title		
Date			
Phone			
Licens	e Number		
Busine	ss Email		

PREVAILING WAGE AND LOCAL HIRING AFFIDAVIT - 2 of 2

BALTIMORE COUNTY, MARYLAND

Prevailing Wage and Local Hiring Contract Requirements and Policies

The Contractor and all Subcontractors must comply with the Prevailing Wage and Local Hiring Laws, contained in Baltimore County Code § 10-2-506 and § 10-2-507, respectively, as amended. Prevailing wage means the wage rate paid by employers that is determined by a governmental authority, based upon a particular geographic area, for a given class of labor and type of project. The County will use the prevailing wage established by the State of Maryland (the "State") Department of Labor for state funded construction contracts in the County at the time of award. These rates include the basic hourly rate and fringe benefits. Apprentices must be paid at least the rate that the State's Apprenticeship and Training Council sets for an apprentice in the trade involved, based on a percentage of the prevailing wage rate in that trade. Any Contractor that is subject to the prevailing wage or local hiring law will be required to agree to the below provisions:

For the purposes of these requirements, an employee means an apprentice, laborer or mechanic employed by a contractor or subcontractor on a capital improvement project with a value of over \$300,000 or a County-subsidized capital project with a value over \$5,000,000.

Capital Improvement Project does not include blanket order or open-end agreements, capital improvement projects subject to a federal or state prevailing wage law, awarded without competition; with another governmental entity; to the extent the contractor is precluded from compliance by the terms of any federal or state law, contract or grant; entered into pursuant to Baltimore County Code § 10-2-310(e); entered into as a joint or cooperative purchase; or entered into as an emergency purchase.

The purpose of a prevailing wage is to ensure that contractors institute local hiring practices for Capital Improvement contracts and Capital Projects under certain circumstances as required by law, and that the Contractor's employees who work on capital improvement contracts are paid the going rate for their services. The prevailing wage rates are established by the State of Maryland Department of Labor and apply to all of the Contractor's employees and any and all Subcontractors. The Contractor and all Subcontractors must comply with all of the requirements of the Prevailing Wage Law including, but not limited to, the following:

1. Pay employees the prescribed rate as annually established by the State's Department of Labor; the prevailing wage rates in effect on the date a solicitation is issued and will apply throughout the term of a contract resulting from that solicitation. Contractor or subcontractors may NOT split or subdivide a capital improvement contract, pay an employee through a third party, treat an employee as a subcontractor or independent contractor to avoid any requirement of the County's prevailing wage law; or employ an individual classified as a helper or trainee to perform direct and measurable work on a capital improvement contract.

Contract Requirements and Policies - Page 1 of 4

2. Pay employees at a rate equal to or more than the prevailing wage rate currently in effect for the type of work performed.

3. Pay employees overtime for work (I) more than eight hours in any single calendar day; (II) more than 40 hours in a work week; or (III) on a Sunday or a legal holiday.

4. Classify employees in their proper work classification in conformance with the schedule established by the State's Department of Labor.

5. May only make fair and reasonable deductions that are (a) required by law; (b) authorized in a written agreement between an employee and contractor or subcontractor signed at the beginning of employment (any deductions taken from employee paychecks including healthcare, pension, 401K, IRA, etc., child/spouse support, or tax levies); and submitted by the contractor or subcontractor to the Director of the County's Prevailing Wage Program; or required or allowed by a collective bargaining agreement between a bona fide labor organization and acontractor or subcontractor.

Electronically submit a certified copy of payroll records through the <u>County's designated certified payroll and compliance system</u> within 14 days after the end of payroll week ending date, to verify that Prevailing Wage rates have been paid to employees.

6. Backup documentation may be required upon demand from the County to be submitted for all 3rd party benefits being claimed, to include, but not limited to: *one month's healthcare transmittal showing employee name and amount company pays on their behalf, company vacation/sick policy, etc. or if Union, a Union transmittal for one month in which work has been performed*.

7. Retain records for a period of five (5) years after the work is completed and permit the Director of the County Prevailing Wage Program, or his/her designee, to inspect the payroll records at a reasonable time and as often as necessary.

8. Payroll records shall contain a statement signed by the contractor or subcontractor (including tiered subcontractors) certifying that the payroll records are complete and correct; the wage rates are not less than required by the Prevailing Wage Law; and the rate of pay and classification for each employee accurately reflects the work the employee performed.

9. All payroll records shall include the name, address, telephone number and email address of the contractor or subcontractor; the name and location of the job; and each employee's name, current address, unless previously reported; specific work classification; daily basic time and overtime hours; total basic time and overtime hours for the payroll period; rate of pay; fringe benefits by type and amount; and gross wages, and <u>any deductions taken from employees' paychecks including, but not limited to, healthcare, pension/401K/IRA</u>. Late submission of copies of any payroll records may be deemed deficient by the County until the required records are provided, and the County may postpone processing payments due under the Contract or under an agreement to finance the Contract.

Contract Requirements and Policies - Page 2 of 4

10. Submit to random or regular audits and investigation of any complaint of a violation of the County's Prevailing Wage and Local Hiring Laws and requirements.

11. Make best efforts to fill at least 51% of new jobs required to complete the capital improvement contract or capital project with Baltimore County residents.

12. Submit monthly reports to the Director of the County's Prevailing Wage Unit relating to local hiring with respect to capital improvement contracts over \$300,00 or County-subsidized capital construction projects receiving assistance over \$5,000,000, that includes (a) the number of new hires needed for the contract or project, (b) the number of County residents hired during the reporting period, (c) the total number of all employees hired during the contract period, (d) best efforts made to fill open positions with County residents, and(e) 5) for new hires: name, last four (4) digits of the social security number, job title, hire date, address and referral source.

13. Agree that any and all disputes will be handled as set forth in the County's Prevailing Wage and Local Hire as a condition of award.

14. In the event the County determines that a provision of the Prevailing Wage and/or Local Hire Law has been violated, the County shall issue a written decision, including appropriate sanctions, and may withhold payment due the Contractor in an amount sufficient to pay each employee of the Contractor or any subcontractors the full amount of wages due under the Prevailing Wage Law, and an amount sufficient to satisfy a liability of the Contractor for liquidated damages as provided under the Prevailing Wage Law, pending a final decision on the violation by the County. The Contractor may appeal a written decision of the Director of the County's Prevailing Wage Unit that the Contractor violated a provision of the Prevailing Wage and/or Local Hire Law, to the Office of Administrative Hearings ("OAH"), within ten (10) working days after receiving a copy of the decision. OAH will conduct a hearing upon the receipt of a timely appeal. If no appeal, the decision of the Director of the County's Prevailing Kage Unit or his/her designee becomes final. A Contractor who is found to have violated the provisions of the Prevailing Wage or Local Hiring Laws intentionally, may not be awarded a County contract or work on any County project for a period of one year from the date of the OAH determination.

15. May not discharge, or otherwise retaliate against, an employee for asserting any right under the Prevailing Wage Law or for filing a complaint of a violation;

16. An aggrieved employee is a third-party beneficiary of the Contract and may by civil action recover the difference between the prevailing wage for the type of work performed and the amount actually received, with interest and a reasonable attorney's fee.

17. Each Contract subject to the Prevailing Wage and Local Hire Laws may specify the payment of liquidated damages to the County by the Contractor for any noncompliance with the Prevailing Wage and Local Law. Liquidated damages are:

a. \$10 for each calendar day that the payroll records are late (payrolls are to be submitted no later than 14 days after the week ending date shown on Certified Payroll Record CPR);
 \$20 for each day that an employee is misclassified and/or paid less than the prevailing

Contract Requirements and Policies - Page 3 of 4

wage rate; and a civil penalty of \$50 per violation of the requirement to post the prevailing wage rates at the work site.

b. \$50 per month for each month the Local Hire report is not submitted by the last day of the existing month due.

These liquidated damages are solely related to prevailing wage and local hiring compliance and do not negate any other remedies available or set forth in the Contract, including delay damages or actual damages. These remedies are separate from, in addition to, and not in lieu of, any remedies available and set forth in the Contract, or at law, for other breaches or defaults under the Contract.

- 18. Where the initial Contract Sum is \$300,000 or below, but it is subsequently increased and exceeds \$300,000 due to an approved Contract Modification, the amount of any such Contract Modification that causes the Contract Sum to exceed \$300,000 is subject to the Prevailing Wage and Local Hiring Laws.
- 19. The Contractor and all subcontractors must post a clearly legible statement of each prevailing wage rate in a prominent and easily accessible place at the Work Site during the entire time Work is being performed, in English and any other language that is primarily spoken by the employees, at the Work Site.
- 20. A contract may include the actual cost of health and dental insurance, pension or retirement plan, paid time off such as vacation or sick days and life insurance. In calculating the cost per hour, divide the annual cost of benefits by 2,080 hours for each employee. Other benefits such as the use of a company vehicle, cell phones, lodging reimbursement, company owned tools **may not be credited towards the fringe benefit amount**.
- 21. All apprentices must be registered with the Maryland Apprenticeship and Training Council, V.A., or US DOL as well as be currently enrolled in, and attending appropriate classes, to which is considered "actively enrolled". Only actively enrolled apprentices may be employed on the project at the apprentice prevailing wage rate.

CONTRACT NUMBER:

21202 SX0

BALTIMORE COUNTY PREVAILING WAGE RATES HIGHWAY CONSTRUCTION

Classification	Modification Reason	Basic Hourly Rate	Borrowed From	Fringe Benefit Payment
BRICKLAYER	CR	\$37.50	510	\$14.78
CARPENTER	CR	\$34.41		\$14.49
CARPENTER - SHORING SCAFFOLD BUILDER	CR	\$34.41		\$14.49
ELECTRICIAN	CR	\$47.00		\$20.17
IRONWORKER - REINFORCING	CR	\$30.70		\$23.91
IRONWORKER - STRUCTURAL	CR	\$36.50		\$21.86
LABORER - AIR TOOL OPERATOR	AD	\$26.12		\$7.40
LABORER - ASPHALT PAVER	AD	\$26.12		\$7.40
LABORER - ASPHALT RAKER	CR	\$18.80		\$3.23
LABORER - BLASTER - DYNAMITE	AD	\$26.12		\$7.40
LABORER - BURNER	AD	\$26.12		\$7.40
LABORER - COMMON	CR	\$18.80		\$3.23
LABORER - CONCRETE PUDDLER	CR	\$18.80		\$3.23
LABORER - CONCRETE SURFACER	AD	\$26.12		\$7.40
LABORER - CONCRETE TENDER	CR	\$18.80		\$3.23
LABORER - CONCRETE VIBRATOR	CR	\$18.80		\$3.23
LABORER - DENSITY GAUGE	CR	\$18.80		\$3.23
LABORER - FIREPROOFER - MIXER	CR	\$18.80		\$3.23
LABORER - FLAGGER	CR	\$18.80		\$3.23
LABORER - GRADE CHECKER	CR	\$18.80		\$3.23
LABORER - HAND ROLLER	CR	\$18.80		\$3.23
LABORER - HAZARDOUS MATERIAL HANDLER	AD	\$26.12		\$7.40
LABORER - JACKHAMMER	CR	\$18.80		\$3.23
LABORER - LANDSCAPING	CR	\$18.80		\$3.23
LABORER - LAYOUT	CR	\$18.80		\$3.23
LABORER - LUTEMAN	CR	\$18.80		\$3.23
LABORER - MASON TENDER	AD	\$26.12		\$7.40
LABORER - MORTAR MIXER	CR	\$18.80		\$3.23
LABORER - PIPELAYER	AD	\$26.12		\$7.40
LABORER - PLASTERER - HANDLER	CR	\$18.80		\$3.23
LABORER - SCAFFOLD BUILDER	AD	\$26.12		\$7.40
LABORER - TAMPER	CR	\$18.80		\$3.23
MILLWRIGHT	CR	\$38.61	025	\$17.21
PAINTER - BRIDGE	CR	\$44.18		\$16.08
POWER EQUIPMENT OPERATOR - BACKHOE	CR	\$33.00		\$13.55
POWER EQUIPMENT OPERATOR - BOOM TRUCK	CR	\$30.04	510	\$13.55
POWER EQUIPMENT OPERATOR - BROOM / SWEEPER	CR	\$30.04	Ī	\$13.55
POWER EQUIPMENT OPERATOR - BULLDOZER	CR	\$33.00		\$13.55
POWER EQUIPMENT OPERATOR - CONCRETE PUMP	CR	\$33.00	Ī	\$13.55
POWER EQUIPMENT OPERATOR - CRANE	CR	\$41.00	1	\$18.10
POWER EQUIPMENT OPERATOR - DRILL - RIG	CR	\$33.00	1	\$13.55
POWER EQUIPMENT OPERATOR - EXCAVATOR	CR	\$33.00		\$13.55
POWER EQUIPMENT OPERATOR - FORKLIFT	CR	\$30.04		\$13.55

CONTRACT NUMBER:

BALTIMORE COUNTY PREVAILING WAGE RATES HIGHWAY CONSTRUCTION

21202 SX0 HIGHWAY CONS	TRUCTION			
POWER EQUIPMENT OPERATOR - GRADALL	CR	\$34.00		\$13.55
POWER EQUIPMENT OPERATOR - GRADER	CR	\$34.00		\$13.55
POWER EQUIPMENT OPERATOR - LOADER	CR	\$33.00		\$13.55
POWER EQUIPMENT OPERATOR - MECHANIC	CR	\$34.00		\$13.55
POWER EQUIPMENT OPERATOR - MILLING MACHINE	CR	\$32.10		\$13.55
POWER EQUIPMENT OPERATOR - PAVER	CR	\$33.15		\$13.55
POWER EQUIPMENT OPERATOR - ROLLER - ASPHALT	CR	\$32.10		\$13.55
POWER EQUIPMENT OPERATOR - ROLLER - EARTH	CR	\$30.04		\$13.55
POWER EQUIPMENT OPERATOR - SKID STEER (BOBCAT)	CR	\$30.04		\$13.55
POWER EQUIPMENT OPERATOR-VACUUM TRUCK	CR	\$37.50		\$14.85
STONE MASON	CR	\$44.30	510	\$21.22
TILE & TERRAZZO FINISHER	CR	\$28.09	510	\$12.59
TRUCK DRIVER - DUMP	CR	\$23.83		\$9.22
TRUCK DRIVER - LOWBOY	CR	\$29.68		\$10.51
TRUCK DRIVER - TACK/TAR TRUCK	CR	\$29.39		\$10.51
TRUCK DRIVER - WATER	CR	\$29.39	027	\$10.51

BALTIMORE COUNTY, MARYLAND

USE OF MINORITY BUSINESS ENTERPRISES AND WOMEN'S BUSINESS ENTERPRISES

IN COUNTY CONTRACTS

MWBE Plan Package



Division of Diversity, Equity and Inclusion The Jefferson Building 105 West Chesapeake Avenue Towson, Maryland 21204 410-887-3407 www.baltimorecountymd.gov/go/mwbe



PROSPECTIVE BIDDERS/OFFERORS

Baltimore County Executive Order 2022-005 Use of Minority Business Enterprises and Women's Business Enterprises states:

SECTION 6. BID REQUIREMENTS.

(A)(l) All bidders shall submit a list of all subcontractors contacted in preparation of their bid package or proposal.
(2) The list shall include the service to be performed, bid amount, and the race/ethnicity/gender of the business owner(s).
(B)(l) All bidders shall submit a list of all subcontractors to be used on a county contract in the bid package.
(2) This list shall include all subcontractors (both MWBE and non-MWBE) used, the service to be performed, the

total amount to be paid, and the race/ethnicity/gender of the owner.

If the solicitation includes a MWBE subcontracting goal, you MUST demonstrate "Good Faith" effort either by:

- 1. Complete and sign FORM A, FORM B (to include FORM B-Prime if MWBE Prime wishes to count towards the goal) and FORM C **listing all subcontractors** with the initial bid submission.
 - a. All Forms must be completed and signed. However, FORM C **MUST** be completed and signed by both the prime and the MWBE subcontractor.

OR

- 2. If you are unable to meet any portion of the goal, you MUST do one of the following:
 - a. If you are requesting a **partial waiver**, complete and sign FORM A with initial bid submission. FORM B (to include FORM B-Prime if MWBE Prime wishes to count towards the goal) and FORM C (**listing all subcontractors**). In addition, complete, sign and submit FORM D and FORM E **accompanied with all supporting documentation** for the portion of the goal that will not be achieved as specified on FORM A.
 - **b.** If you are requesting a **full waiver**, complete and sign FORM A indicating your intent to request a full waiver **accompanied with a completed and signed FORM** C listing all subcontractors, FORM D and FORM E accompanied with all supporting documentation. This MUST be submitted with the initial bid as specified on FORM A.
 - *c.* All Forms must be completed and signed. FORM C and FORM D **MUST** be completed and properly signed **by both** the Prime **AND** the **MWBE** subcontractor(s).

NOTE: The MWBE subcontracting goal applies to ALL prime/general contractors including certified and non-certified minority and women owned firms. However, a Minority-owned or a Women-owned prime may self-perform up to 50% of MWBE subcontracting goal set in the solicitation. The MWBE primes that wish to count towards the goal must list themselves on all appropriate forms.

BALTIMORE COUNTY, MARYLAND MWBE PARTICIPATION SUMMARY

<u>Executive Order</u>: Minority Business Enterprises and Women Business Enterprises (MWBE) shall have the maximum opportunity to participate in the performance of contracts financed in whole, or in certain circumstances, in part with County funds. Accordingly, on December 6, 2022, the County Executive adopted the EXECUTIVE ORDER No. 2022-005 addressing MWBE participation in County contracts. The December 6, 2022 Executive Order may be found on the Baltimore County website at www.baltimorecountymd.gov/go/mwbe.

Each Contract: The County shall establish a minimum MWBE participation amount for each contract, as applicable.

<u>Bidder/Offeror Responsibility</u>: The bidder/offeror shall ensure that MWBE participation occurs in accordance with the contract requirements and the County Executive's Executive Order. All bidder/offerors shall ensure that MWBE have the maximum opportunity to compete for and perform County contracts, as applicable. Baltimore County, Maryland, and/or its bidder/offerors and contractors shall not discriminate on the basis of race, color, national origin, disability or sex in the award and performance of any County contract.

Mobilization Payments: For subcontractors, project start-up costs can also be significant. A subcontractor that has limited resources and access to credit may find that start-up expenses inhibit its ability to bid County contracts. Under circumstances where mobilization payments are approved for the prime contractor, the subcontractor should be paid an amount equal to their participation percentage no later than five (5) business days before they are required to mobilize to perform the contracted work.

Mobilization costs represent pre-contract costs incurred by a contractor to prepare a job site before the actual commencement of the contract. These costs can include movement of personnel and equipment to the project site and for the establishment of the Contractor's offices, buildings, and other facilities necessary to begin work.

APPROVED MWBE LISTINGS

Published compilations of approved and certified MWBE, contractors, subcontractors, material suppliers, etc. include:

DIRECTORY OF MINORITY BUSINESS ENTERPRISE (MDOT):

https://marylandmdbe.mdbecert.com

MINORITY BUSINESS DIRECTORY OF THE CITY OF BALTIMORE:

https://baltimorecity.diversitycompliance.com

BIDDER/OFFEROR'S ACTIONS

Seeking Firms:

The bidder/offeror will seek commitments by subcontract or otherwise from MWBE firms for supplies and/or services, any combined value of which equals or exceeds the required percentage of MWBE participation goal for the County contract. However a MWBE Prime that affirms its MWBE status on the Minority and/or Women Prime Participation Affidavit may count up to 50% of the goal.

Expenditures for Materials and Supplies:

A bidder/offeror may count toward its MWBE contract requirements all expenditures for materials and supplies obtained from MWBE suppliers and manufacturers, provided that the MWBE firm is furnishing and installing the materials and is certified to perform these services. If the MWBE firm is only being used as a supplier, wholesaler and/or regular dealer or is not certified to install the supplies/materials, for purposes of achieving the MWBE participation goal, you may only count sixty percent (60%) of the value of the subcontract for these supplies/products (60% Rule). To apply the 60% Rule, first divide the amount of the subcontract for these supplies/products only (not installation) by the total Contract value. Then, multiply the result by sixty percent (60%) and insert the percentage in the Percent of Total Contract field of Form B Subcontractor Participation Schedule.

BALTIMORE COUNTY, MARYLAND MWBE PARTICIPATION SUMMARY

Information to be supplied: All bidder/offerors shall submit the following information to the County at the time of bid submission:

- 1. The name of an employee designated as the bidder/offeror's liaison to the County's Minority Business Enterprise Office.
- 2. The following forms shall be completed and submitted:
 - Certified MWBE Utilization and Fair Solicitation Affidavit (<u>Form A)</u>: from among those names appearing in the Approved MWBE Listings (excepting Federal Highway Administration projects, which exclusively require DBE approved and certified by the Maryland Department of Transportation MBE Advisory Committee);
 - A Subcontractor Participation Schedule (<u>Form B</u>) completed by the prime contractor for each MWBE listed on the Form.
 - A MWBE Prime Participation Schedule (Form B-Prime) completed by a MWBE prime contractor if the firm wishes to self-perform up to 50% of the MBE/WBE goal.
 - A MWBE Disclosure and Participation Statement (Form C) completed and signed by the prime contractor and MWBE firm for each MWBE listed on the Form. Form C <u>must match</u> what is stated on Form B.
 - If applicable, MWBE Subcontractor Unavailable Certificate (**Form D**) completed and signed by the prime contractor and MWBE for each MWBE listed on the Form.
- 3. If applicable, MWBE Outreach Efforts Compliance Statement (**Form E**) completed and signed by the Bidder/Offeror. The prime shall submit a list of all subcontractors.
- 4. For DPW contracts, if the bidder/offeror intends to fulfill the MWBE requirements by use of a joint venture, he/she must submit a Joint Venture Disclosure Affidavit (<u>Form D-EEO-006-A</u> and <u>B</u> showing the extent of MWBE participation. If a bidder/offeror intends to use a MWBE joint venture as a subcontractor to meet its MWBE requirements, the affidavit must be submitted through the bidder/offeror by the proposed subcontractors and signed by all parties.
- 5. If the bidder/offeror's proposed MWBE participation does not meet the MWBE contract requirements, information sufficient to demonstrate that the bidder/offeror has made every effort to meet the requirements must be submitted. (See DETERMINATION OF BID RESPONSIVENESS hereafter)

RECORDS AND REPORTS

<u>Returning Records</u>: The bidder/offeror must keep such records as are necessary to determine compliance with its MWBE utilization requirements:

- 1. The MWBE and non-minority contractors, type of work being performed, actual values of work and services.
- 2. Documentation of all correspondence, contacts, telephone calls, etc., to obtain MWBE services for the contract.
- 3. All prime contractors and MWBE sub-contractors are required to report monthly, by the 10th of each month, to the County through an online system called PRISM. If the contractor cannot submit his/her report on time, he/she will notify the County MWBE office and request additional time to submit the report. Failure of the contractor to report in a timely manner may result in a finding of noncompliance. The County in its sole discretion and/or upon written request may require additional reports regarding MWBE. In the event you are not able to enter your payments in PRiSM, a spreadsheet is attached for your use. Please be sure to list the PO for each invoice/ payment reported and include in your submission any corresponding documentation (e.g. copies of invoices or cancelled checks).

<u>Retaining Records</u>: All MWBE records must be retained for <u>3 years</u> following the expiration or any earlier termination of the contract and shall be available for inspection and photocopying by the County.

<u>Investigation and Notification:</u> Whenever the County believes the bidder/offeror, contractor, or any subcontractor may not be operating in compliance with the MWBE requirements, the County may, in its sole discretion, conduct an investigation. If the County finds the bidder/offeror, contractor, or any subcontractor is not in compliance with the MWBE requirements, the County and all rights and remedies available to the County, under the contract, at law or equity, as deemed applicable and appropriate by the County in its sole discretion.

MWBE Plan Packet Page 4

BALTIMORE COUNTY, MARYLAND MWBE PARTICIPATION SUMMARY

DETERMINATION OF BID RESPONSIVENESS

Request for Deviation: If the bidder/offeror is unable to procure from MWBE firms (by subcontract or otherwise), supplies and services, any combined value of which equals the required percentage of the total value of the contract, the bidder/ offeror may request, in writing, a deviation or waiver of the contract requirements. To obtain such a waiver, the bidder/ offeror must submit the following information at the time bids are due:

- The request for waiver request shall include (1) a signed unavailability statement (Form D) executed by all MBEs and WBEs that the bidder/offeror solicited for participation and (2) Outreach Efforts/Compliance Statement (Form E) that demonstrates the bidder/offeror's good faith efforts to comply with the contract requirements, including copies of solicitation documentation to all potential subcontractors:
- 2. Emails, letters, facsimile transmittals and confirmations containing plans, specifications, and anticipated time schedule for portions of the work to be performed and meeting notes and agendas clearly identifying the certified MBE or WBE classification and dates that the bidder/offeror contacted each MWBE; and
- 3. Telephone logs containing names, addresses, dates, telephone numbers, work to be performed, anticipated time schedule and classification of certified MBEs and WBEs contacted.

<u>Bid Rejection</u>: The failure of any bidder/offeror (including the apparent low bidder/offeror) to provide a responsive MWBE Plan as required by the solicitation may result in the bidder/offeror being deemed non-responsive and the County's rejection of the bid.

Liquidated Damages If the County issues a notice of intent to awards contract to the apparent low bidder/offeror who provided a responsive MWBE Plan, but, if after said notice and before execution of Contract Documents, it is determined by the County that the apparent low bidder/offeror has failed to comply with the MWBE Plan, such failure may result in the recommendation by the appropriate Procurement Official to annul the award and forfeit the bidder/offeror's Proposal Guaranty to the County, not as a penalty, but as liquidated damages, it being acknowledged that actual damages will be difficult if not impossible to accurately measure. In addition, the County may proceed as it determines to be in its best interest, including but not limited to, the Notice of Award may be made to the next lowest responsive and responsible bidder/offeror or the work may be re-advertised.

<u>Contract Breach</u>: If, after execution of a County contract, the contractor becomes aware it may or will fail to fulfill the applicable MWBE requirements and/or may or will deviate from the contractor's bid response/contract terms, the contractor shall promptly advise the County of this in writing. Thereafter, the County will determine what action or remedy is appropriate on a case-by-case basis, in the County's sole discretion.

<u>Approval Required for Changes</u>: Any and all changes to the MWBE subcontractors or the type or amount of work to be performed by such subcontractors during the contract term must be mutually agreeable to the County and the contractor and shall be documented via a contract amendment, executed by legally authorized representatives of the County and the contractor.

<u>Cooperation in Reviews</u>: The bidder/offeror will cooperate with the County in any reviews of the contractor's procedures and practices with respect to MBE or WBE firms, which the County may from time to time conduct in its sole discretion.

<u>Other</u>: If the documents used to determine the contractor's efforts, achievement of, and/or the status of an MWBE requirement or fulfillment thereof contain false, misleading or misrepresented information, the contractor may be declared in breach of the contract and the County may take any and all actions and/or remedies available to the County under the contract, at law, or in equity. If an MWBE is disqualified by any public entity, including but not limited to, Baltimore City, the State or MDOT, at any time after award or during the term of the contract, the County may, in its sole discretion, require the prime contractor to promptly submit for County approval, the contractor's plans for fulfilling the required MWBE participation under the contract, and/or request such detail and additional information as the County, in its discretion deems appropriate.



PRIME CONTRACTOR MINORITY AND WOMEN PARTICIPATION AFFIDAVIT

AUTHORIZED REPRESENTATIVE A.

I HEREBY AFFIRM THAT:

I am the [title]	 and the duly authorized representative of
[business]	

(the "Business") and that I possess the legal authority to make this Affidavit on behalf of myself and the Business for which I am acting.

AFFIRMATION REGARDING MINORITY AND WOMEN PARTICIPATION B.

I FURTHER AFFIRM THAT:

I am aware that, pursuant to the December 6, 2022 Executive Order of Baltimore County, Maryland, the following words have the meanings indicated.

(A) "Minority Business Enterprise" or "MBE" means a business enterprise that is owned, operated and controlled by one or more minority group members (African American, Hispanic American, Asian American, or Native American) who have at least 51% ownership and in which the minority group members have operational and managerial control, interest in capital and earnings commensurate with their percentage of ownership.

(B) "Women's Business Enterprise" or "WBE" means a business enterprise that is owned, operated and controlled by one or more women who have at least 51% ownership and in which the women have operational and managerial control, interest in capital and earnings commensurate with their percentage of ownership.

The Prime is a MBE \square or WBE \square

Maryland State Department of Transportation (MDOT)#_____

City of Baltimore #_____

 Name Other Jurisdiction:
 #

The ownership of the Noncertified MWBE business consists of _____% minorities and ___% women (for a total of $\sqrt{9}$, each of which has operational and managerial control, interest in capital and earnings commensurate with their percent ownership.

 % African American
 % Hispanic American
 % Women

 % Asian American
 % Native American
 % Disadvantaged (DBE)

The MWBE prime anticipates meeting up to 50% of the stated participation goal with its own workforce. MWBE primes percentage must be stated on the MWBE PRIME PARTICIPATION SCHEDULE (FORM B-PRIME) to count towards the goal.

_The prime anticipates does not anticipate utilizing subcontractors for % of the work of the contract requirements, of which it anticipates____% will be MBEs and ___% will be WBEs.

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THIS AFFIDAVIT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF. Date:

PB040

By:

(Authorized Representative and Affiant's Name and Title)

Revised 12/2024

BALTIMORE COUNTY, MARYLAND Certified MWBE Utilization and Fair Solicitation Affidavit (FORM A)

*This document must be completed and submitted with Bid/Proposal to Baltimore County.

NOTE: If you do not complete and submit this form with your bid or offer to the County, the County may, in its sole discretion, deem your bid or offer NON-RESPONSIVE and accordingly the COUNTY WILL NOT CONSIDER YOU FOR CONTRACT AWARD.

* * * * * * * * * * * * * *

I acknowledge the goal for solicitation $\frac{\#21202 \text{ SX0}}{\text{SX0}}$ is a minimum of $\frac{25\%}{\text{SX0}}$. This goal must be met combination of the MWBE subcontractors. However, for instances where the Prime is counting up to 50% of the goal, the remaining goal balance must be met by any combination of the MWBE subcontractors.

- The goal breakdown is as follows:
 - o % Minority/Women Prime
 - _____% for certified MBE-owned businesses and/or
 - % for certified WBE-owned businesses.

I have made a good-faith effort to achieve this MWBE solicitation requirement. If awarded the contract, I will comply with this MWBE contract requirement and will continue to use my best efforts to increase MWBE participation during the contract term.

PLEASE CHECK ONE BOX (EITHER 1, 2, OR 3)

Prime has met the MWBE contract requirements for this solicitation and contract. I submit the Subcontractor Participation Form B and Form C, along with this Affidavit, which details how the Prime will achieve the contract requirements. Submit a complete list of all additional subcontractors

Or

After having made a good-faith effort to achieve the MWBE requirements, the Prime can only achieve partial success. I submit the Subcontractor Participation Form B, Form C, Form D and Form E along with this Affidavit, which details how the Prime will partially achieve the contract requirements. Submit a complete list of all additional subcontractors

I request a partial waiver and will meet the following MWBE participation goals:

- Partial waiver of MWBE subcontract participation:
 - % Minority/Women Prime
 - % for certified MBE-owned businesses and/or
 - % for certified WBE-owned businesses.

Or

After having made a good faith effort to achieve the MWBE requirements for this contract, the Prime is unable to achieve the requirements and/or sub requirements for this contract. I submit the MWBE Participation Form D and Form E, along with this Affidavit, which details the steps the Prime has taken in an attempt to achieve the contract requirements. Therefore, I request a full waiver.

IF YOU HAVE CHECKED BOX 2 OR 3, THE FOLLOWING IS APPLICABLE:

1) If a bidder is unable to comply with the goals established in a bid for a project, the bidder may submit a request for a waiver at the time of bid submission. However, occasions for granting waivers will be limited.

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1

2

3

BALTIMORE COUNTY, MARYLAND Certified MWBE Utilization and Fair Solicitation Affidavit (FORM A)

- 2) The request for waiver shall include documentation that demonstrates the bidder's good faith efforts to comply with the goals, including:
 - a. Signed unavailability statements from all MBEs and WBEs that the bidder solicited for participation; and
 - b. Copies of solicitation documentation to include the scope of services to be performed by the subcontractors accompanied with the following:
 - i. Emails, letters, facsimile transmittals and confirmations containing plans, specifications, and anticipated time schedule for portions of the work to be performed and meeting notes and agendas clearly identifying the certified MBE or WBE classification and dates that the bidder contacted each; and
 - ii. Telephone logs containing names, addresses, dates, telephone numbers, work to be performed, anticipated time schedule and classification of certified MBEs and WBEs contacted.
 - iii. Responses from MWBE firms contacted to fulfill the goal.

As I have checked Box 2 or 3 of this Affidavit, I understand I must submit the following supporting documentation with the bid:

- Subcontractor Participation Schedule (Form B)
- *MWBE Subcontractor Disclosure and Participation Statement* (Form C)
- *MWBE Subcontractors Unavailable Certificate* (Form D) (if applicable)
- *MWBE Outreach Efforts Compliance Statement* (Form E) (if applicable)

I acknowledge that the MWBE subcontractors/suppliers listed on the *Subcontractor Participation Schedule* (Form B) will be used to accomplish the percentage of MWBE participation that the Prime shall achieve. A fully executed Form C must match Form B.

In the solicitation of subcontract quotations or offers, MWBE subcontractors were provided the same information and amount of time to respond, as were non-MWBE subcontractors.

The solicitation process was conducted in such a manner so as to not place MWBE subcontractors at a competitive disadvantage to non-MWBE subcontractors.

I solemnly affirm under the penalties of perjury that this Affidavit is true to the best of my knowledge, information, and belief.

Bidder/Offeror Name	Phone Number
Address	Affiant Signature
Address (continued)	Printed Name & Title
E-mail address	Date

BALTIMORE COUNTY, MARYLAND SUBCONTRACTOR PARTICIPATION SCHEDULE (FORM B)

*This document <u>must</u> be completed and submitted with Bid/Proposal to Baltimore County.

NOTE: If you do not complete and submit this form with your bid or offer to the County, the County may, in its sole discretion, deem your bid or offer NON-RESPONSIVE and accordingly the COUNTY WILL NOT CONSIDER YOU FOR CONTRACT AWARD.

Prime Name	Prime Address, Telephone Number and Email
Bid/Proposal Name and Number	Project Location
	Base Bid
1. Subcontractor Name and Tax ID	Subcontractor Address
Telephone Number	Minority Status (If applicable):
Email Address	 African American Asian American Pacific Native American
Select One: BBE BBE BBE N/A	Asian American Pacific Asian American Asian American Sub-continent Hispanic American
Provide if Applicable: MDOT Baltimore City #	Supplier, Wholesaler and/or Regular Dealer - 60% Rule
NAICS Code(s), Work to be Performed and Subcontract Dollar Amount	Percent of Total Contract (See instructions on Page 1 of the MWBE PARTICIPATION SUMMARY for 60% rule)%
2. Subcontractor Name and Tax ID	Subcontractor Address
Telephone Number	Minority Status (If applicable):
Email Address	□ African American □ Female □ Asian American Pacific □ Native American
Select One: MBE WBE SBE N/A	Asian American Pacific Asian American Sub-continent Hispanic American
Provide if Applicable:	Supplier, Wholesaler and/or Regular Dealer - 60%
MDOT Baltimore City #	Rule
NAICS Code(s), Work to be Performed and Subcontract Dollar Amount	Percent of Total Contract (See instructions on Page 1 of the MWBE PARTICIPATION SUMMARY for 60% rule)%
3. Subcontractor Name and Tax ID	Subcontractor Address
Telephone Number	Minority Status (If applicable):
Email Address	□ African American □ Female □ Asian American Pacific □ Native American
Select One: MBE WBE SBE N/A	□ Asian American Sub-continent □ Hispanic American
Provide if Applicable: MDOT Baltimore City #	Supplier, Wholesaler and/or Regular Dealer - 60% Rule
NAICS Code(s), Work to be Performed and Subcontract Dollar Amount	Percent of Total Contract (See instructions on Page 1 of the MWBE PARTICIPATION SUMMARY for 60% rule)%
Subcontractor Total Dollar Amount \$	Total Subcontractor Percent of Entire Contract%
Form Prepared by:	Reviewed and Accepted by Baltimore County Minority Business Enterprise Office
Name/Date:	Name
Title:	Title
Email:	Date
MBE or WBE Prime Participation T MBE Subcontracting Participation WBE Subcontracting Participation Total MWBE Participation Rev 12/2024 Total SBE Participation	Total% \$

BALTIMORE COUNTY, MARYLAND

MWBE PRIME PARTICIPATION SCHEDULE

(Form B-Prime)

PLEASE COMPLETE AND SUBMIT THIS FORM TO ATTEST EACH SPECIFIC ITEM OF WORK THAT YOU AS THE MWBE PRIME FIRM WILL PERFORM USING ITS OWN WORKFORCE PERTAINING TO THE PERCENTAGE STATED ON THE SUBCONTRACTOR PARTICIPATION SCHEDULE (FORM B) FOR PURPOSES OF MEETING THE MWBE PARTICIPATION GOALS.

*This document <u>must</u> be completed and submitted with Bid/Proposal to Baltimore County.

NOTE: If you do not complete and submit this form with your bid or offer to the County, the County may, in its sole discretion, deem your bid or offer NON-RESPONSIVE and accordingly the COUNTY WILL NOT CONSIDER YOU FOR CONTRACT AWARD.

Provided that ______(Prime Contractor's Name) with Certification Number ______ is awarded the County contract in conjunction with Solicitation No., such MWBE Prime Contractor intends to count the distinct, clearly defined portion of the work of the contract that the MBE/WBE Prime Contractor performs with its own forces toward fulfilling **up to fifty-percent (50%) of the MWBE participation goal**, at least \$______ which equals to ____% of the Total Contract Amount for performing the following products/services for the Contract:

NAICS CODE	WORK ITEM, SPECIFICATION NUMBER, LINE ITEMS OR WORK CATEGORIES (IF APPLICABLE). FOR CONSTRUCTION PROJECTS, GENERAL CONDITIONS MUST BE LISTED SEPARATELY.	DESCRIPTION OF SPECIFIC PRODUCTS AND/OR SERVICES	VALUE OF THE WORK

MWBE PRIME CONTRACTOR	MWBE PRIME CONTRACTOR
Signature of Representative:	Minority Status:
	African American
Printed Name and Title:	Hispanic American
	🗌 Women
Firm's Name:	Asian American
Federal Identification Number:	Native American
Address:	
	Reviewed and Accepted by Baltimore County Minority Business Enterprise Office
Telephone:	
Email Address:	Name
Certified Yes No No	Title Date
Certifying Jurisdiction Date:	

Rev 12/2024

MWBE Plan Packet Page 10

BALTIMORE COUNTY, MARYLAND MWBE SUBCONTRACTOR DISCLOSURE AND PARTICIPATION STATEMENT (FORM C)

*This document must be completed and submitted with Bid/Proposal to Baltimore County.

NOTE: If you do not complete and submit this form with your bid or offer to the County, the County may, in its sole discretion, deem your bid or offer NON-RESPONSIVE and accordingly the COUNTY WILL NOT CONSIDER YOU FOR CONTRACT AWARD.

NOTE: ANY INCONSISTENCY BETWEEN THIS FORM AND FORM B *MWBE PARTICIPATION* MAY RENDER A BID/PROPOSAL NON-RESPONSIVE AND THE COUNTY WILL NOT CONSIDER YOU FOR CONTRACT AWARD.

Prime Contractor Name:
Subcontractor Contact Name, Title Subcontractor Email Address MDOT Baltimore City MBE WBE MBE SBE NAICS Code(s), Work/Services to be performed by MWBE Subcontractor: Percent of Total Contract (See instructions on Page 1 of the MWBE PARTICIPATION SUMMARY for 60% rule)
MDOT Baltimore City Certification Number MBE WBE SBE N/A NAICS Code(s), Work/Services to be performed by MWBE Subcontractor: Percent of Total Contract (See instructions on Page 1 of the MWBE PARTICIPATION SUMMARY for 60% rule)
Certification Number Certification Number MBE WBE SBE N/A NAICS Code(s), Work/Services to be performed by MWBE Subcontractor: Percent of Total Contract (See instructions on Page 1 of the MWBE PARTICIPATION SUMMARY for 60% rule)
NAICS Code(s), Work/Services to be performed by MWBE Subcontractor: Percent of Total Contract (See instructions on Page 1 of the MWBE PARTICIPATION SUMMARY for 60% rule)
Percent of Total Contract (See instructions on Page 1 of the MWBB PARTICIPATION SUMMARY for 60% rule)
PARTICIPATION SUMMARY for 60% rule)
2. Subcontract Amount: \$or% of the County contract cost.
3. Bonds - Amount and type required of Subcontractor if any:
4. MWBE Anticipated Commencement Date: Completion Date:
Mobilization Cost Amount \$
5. This is a MBE-Owned Business Firm: YesNo
6. This is a WBE-Owned Business Firm: YesNo

Signature of MWBE Subcontractor: Date:
Prime's Printed Name and Title:Email:
The terms and conditions stated above are consistent with our agreements.
Signature of Prime: Date:

BALTIMORE COUNTY, MARYLAND MWBE –UNAVAILABILITY CERTIFICATE (Form D)

If applicable, this document must be completed and submitted with Bid/Proposal to Baltimore County.

NOTE: If you do not complete and submit this form with your bid or offer to the County, the County may, in its sole discretion, deem your bid or offer NON-RESPONSIVE and accordingly the COUNTY WILL NOT CONSIDER YOU FOR CONTRACT AWARD.

1. It is here	by certified that the firm of					
	,	(Name of Minority firm)				
located at						
	(Number)	(Street)				
-	(City)	(State)	(Zip)			
was offered	an opportunity to bid on the		_contract.			
2. The the work/ser	rvice or unable to prepare a bid for th	(MWBE Firm), is eitl is project for the following	her unavailable for reason(s):			
	Subcontractor MWBE Representative	Title	Date			
MDOT/Baltin	nore City Certification #	Email Address #	Telephone #			
3. PRIME'S S	GIGNATURE AND CERTIFICATION					
	oath that I contacted the Certified MWB vices for the above-contract or failed to					

Title

Date

Rev 12/2024

Signature of Prime

BALTIMORE COUNTY, MARYLAND MWBE - OUTREACH EFFORTS - COMPLIANCE STATEMENT (FORM E)

*This document must be completed and submitted with Bid/Proposal to Baltimore County.

NOTE: If you do not complete and submit this form with your bid or offer to the County, the County may, in its sole discretion, deem your bid or offer NON-RESPONSIVE and accordingly the COUNTY WILL NOT CONSIDER YOU FOR CONTRACT AWARD.

In conjunction with the bid or offer submitted in response to Solicitation Number______, I state the following:

- 1. Bidder/Offeror identified opportunities to subcontract in these specific work categories:
- 2. Attached to this form are copies of the solicitation documentation in accordance with Section 6 (E) Bid Requirements of the Executive Order, used to solicit certified MWBEs for the subcontract opportunities accompanied with the signed MWBE Subcontractor Unavailability Certificate (Form D).
- 3. Bidder/Offeror made the following attempts to solicit MWBEs:

Signature – Bidder Offeror

Print or Type Name of Firm

Street Address

City State Zip Code

Date

MWBE Plan Packet Page 13



JOHN A. OLSZEWSKI, JR. *County Executive*

SEVETRA PEOPLES-BROWN *Executive Director Chief of Diversity, Equity and Inclusion*

To:	Contractors/Consultants
From:	Minority and Women Business Enterprise Office
Date:	December 13, 2024
Subject:	Compliance Reporting and Penalties

Baltimore County, Maryland (the "County") requires all Prime Contractors and all Subcontractors to submit payment reports by the 10th of each month through an online MWBE Compliance Portal (PRISM). The Portal can be found under Compliance Reporting for Primes and Subcontractors at www.baltimorecountymd.gov/ go/mwbe. In the event you are not able to enter your payments in PRiSM, a spreadsheet is attached for your use. Please be sure to list the PO for each invoice/ payment reported and include in your submission any corresponding documentation (e.g. copies of invoices or canceled checks).

The County has found that a number of companies are failing to file reports in a timely manner, which makes it difficult for the County to verify compliance. As a result, the County has determined to assess penalties for non-compliance, effective September 1, 2018, as follows:

- (a) For failure to file timely monthly reports:
 - a. Assessment of a late fee of \$10 per day per task, up to a maximum of \$1,500 per task; and/or
 - b. For multiple violations, termination of the contract for convenience or for default, with the contractor suspended from participating in County contracts for five (5) years.
- (b) For failure to meet MWBE requirements:
 - a. Assessment of a penalty of up to 10% of the contract value; and/or
 - b. Termination of the contract for convenience, with the contractor suspended from participating in County contracts for five (5) years together with assessment of a penalty of up to 10% of the contract value; and/or
 - c. Termination of the contract for default together with assessment of a penalty of 10% of the contract value.

Each action and/or remedy described above is at the sole discretion of the County, and is in addition to any damages which the County may be entitled to under the contract. This short video can be used as guidance on submitting the Prime to Subcontractor Payment

Reporting:

http://stage.prismcompliance.com/etc/movies/vendor_contractpayment_tutorial.htm

The Jefferson Building | 105 West Chesapeake Avenue, Towson, Maryland 21204-4665 | Phone 410-887-3407 www.baltimorecountymd.gov

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If after contract expiration, it has been determined the MWBE firms named were not used or were under used, by the contractor and supporting documentation was not provided and approved by the County the contractor may be assessed a penalty of up to 10% of the contract value and/or suspended from participating in County contracts for 5 years.

Questions regarding this correspondence and/or the use of this system can be directed to the MWBE Office at mwbe@baltimorecountymd.gov or call (410) 887-3407.

Attachment:MWBE Payment Report FormMWBE Payment Acknowledgement Form

Cc: File

SECTION V

POST AWARD DOCUMENTS

This Section to be Completed by Successful Bidder after Award

<u>CONTRACT AGREEMENT</u>

THIS C	CONTRACT	AGREEN	<i>A</i> ENT	("Contra	act"),	IS	MADE	THIS		day	of
	20	, by	and be	tween B	altimor	e C	ounty, 1	Maryland,	a body	corporate	and
politic ("County"), and							, ("Contr	actor").		

WITNESSETH, that the Contractor, for and in consideration of the payment or payments herein specified and agreed to by the County, hereby covenants and agrees to furnish and deliver all the materials and to do and perform all the work, services, and labor in fulfillment of the requirements of Contract Number **21202 SX0** "Project") in strict conformity with the solicitation, plans, specifications, special provisions, any and all addenda, and the proposal, at the prices named therein, and all of which are collectively the Proposal, and said Proposal is attached hereto and made a part thereof.

The Project shall be done in strict compliance with (i) the Proposal, (ii) the Baltimore County Department of Public Works and Transportation September 2023 "Standard Specifications for Construction and Materials" and "Standard Details for Construction" (iii) and any and all revisions thereto as of the date of advertisement, including but not limited to the General Conditions Building Projects, as applicable, and all of which (i-iii) are made a part hereof and incorporated herein (collectively, the "Specifications"). Contractor understands and agrees it is Contractor's responsibility and obligation to obtain a copy of the "Specifications" and agrees the Specifications are incorporated herein. Copies are available on the County's website at www.baltimorecountymd.gov/departments/public-works/standards.

The Project shall be subject to the inspection and approval of the Director of Public Works and Transportation for Baltimore County, or his authorized representative, and in the event any portion thereof shall be rejected by said Director or his representative as defective or unsuitable, then the said portion shall be removed and replaced and be performed anew to the satisfaction and approval of the said Director or his representative at the cost and expense of the Contractor.

THE CONTRACTOR AFFIRMS that it is aware of, and will comply with, the provisions of Sections 14-101 through 14-108 of the Election Law Article of the Annotated Code of Maryland, as the same may be amended from time to time, which require that every person who makes, during any 12-month period, one or more contracts, with one or more Maryland governmental entities involving cumulative consideration, of at least \$200,000.00, to file with the State Board of Elections certain specified information to include disclosure of attributable political contributions in excess of \$500 during defined reporting periods.

THE CONTRACTOR FURTHER COVENANTS AND AGREES that all the Project shall be furnished, performed and delivered, in every respect, to the satisfaction and approval of the Director of Public Works and Transportation, aforesaid, on or before the expiration of FOUR HUNDRED (400) CALENDAR DAYS (the "Contract Period") after written notice has been given by the Director or their authorized representative to begin the work.

IT IS AGREED THAT TIME IS OF THE ESSENCE. In the event the Contractor fails to achieve Final Completion and Final Acceptance of the Contract work within the Contract Period specified herein, plus any extensions thereto agreed to in writing by a legally authorized representative of the County pursuant to the terms of this Contract, then Contractor shall pay the County the sum of <u>TWO THOUSAND DOLLARS</u> (\$2,000.00) FOR EACH CALENDAR DAY (DAY 1 THROUGH 30) AFTER THE EXPIRATION OF THE CONTRACT PERIOD AND THREE THOUSAND FIVE HUNDRED DOLLARS (\$3,500.00) FOR EACH CALENDAR DAY (DAY 31 THROUGH 60) AFTER THE EXPIRATION OF THE CONTRACT PERIOD AND SIX THOUSAND FIVE HUNDRED DOLLARS (\$6,500.00) FOR EACH CALENDAR DAY (DAY 61 AND THEREAFTER), until the Contractor achieves Final Completion and Final Acceptance of the Project.

Contractor's Initials

Date

IT IS FURTHER AGREED that:

- (a) These Liquidated Damages are a reasonable estimate of the County's damages solely due to the public's loss of use of the Project during the delay period and is not a penalty.
- (b) It is very difficult, if not impossible, to accurately measure the damages to the County due to the public's loss of use of the Project during the delay period.
- (c) Notwithstanding GP 8.09 of the Baltimore County Standard Specification for Construction, in addition to the damages due to the public's loss of use of the Project during the delay period, the County is likely to incur additional direct costs during the delay period, including but not limited to, costs for construction management, consultants, architectural services, office trailer and supplies, utilities, County employees' time, County vehicles, and such other costs that the County will incur to continue administration of the construction and the Contract during the delay period, all of which will be monitored by the County, and if so required by the County, the Contractor shall pay such actual damages incurred during the delay period. THE PARTIES HERETO UNDERSTAND AND AGREE THAT CONTRACTOR'S OBLIGATION TO PAY THE COUNTY FOR ACTUAL DAMAGES DURING THE DELAY PERIOD SHALL BE IN ADDITION TO THE CONTRACTOR'S OBLIGATION TO PAY THE LIQUIDATED DAMAGES DUE TO THE PUBLIC'S LOSS OF USE OF THE PROJECT.
- (d) The County shall have the right, but not the obligation, to deduct the Liquidated Damages due to the public's loss of use of the Project, and the County's actual costs and costs to continue administration of the construction and the Contract, from any monies due or any monies that may become due to the Contractor.

IT IS DISTINCTLY UNDERSTOOD AND AGREED that no claim for extra work, material or overhead not specifically provided for in the Contract will be allowed by the County, nor shall the Contractor do any work or furnish any materials not covered by this Contract and the Specifications, unless the same is ordered in writing by a legally authorized representative of the Department of Public Works and Transportation in accordance with the terms of the Contract. Any such work or materials which may be done or furnished by the Contractor without any such written order first being given shall be at said Contractor's sole risk, cost and expense and Contractor hereby covenants and agrees that without such written order, Contractor shall make no claim for compensation for work, materials, or overhead so done or furnished.

NOTWITHSTANDING GP 4.06 OF THE BALTIMORE COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION, IT IS SPECIFICALLY AGREED that the Contractor shall have no entitlement to damages arising out of delay, disruption, interference or hindrance from any cause whatsoever. However, this provision shall not preclude recovery or damages by the Contractor for hindrances or delays due solely to fraud or gross negligence on the part of the County or its agents.

IT IS FURTHER DISTINCTLY AGREED that the said Contractor shall not assign this Contract, nor any part thereof, nor any right to any of the monies to be paid hereunder, nor shall any part of the work to be done or material furnished under said Contract be sublet without the prior written consent of a legally authorized representative of the Department of Public Works and Transportation in accordance with the terms of this Contract. Further, the acceptance of the final payment by the Contractor shall effectuate a release in full of all claims against County and its officials, employees, representatives, and agents arising out of, or by reason of the Project and this Contract.

The Contractor shall review government issued identification and badge all employees of the Contractor and its subcontractors. The Contractor shall also review all federal forms, including but not limited to I-9's, for compliance as well as copies of all employment eligibility and identity documentation maintained to the extent required by law.

The Bonds, given by the Contractor in a sum equal to the total contract price of the Project in compliance with the terms and provisions of this Contract, are hereby attached and incorporated herein.

IT IS AGREED that in the event that the County is delayed or prevented from timely execution of this Contract, the Contractor releases County and agrees Contractor shall have no action, claim or demand against County therefore.

Contractor's Initials

Date

THE CONTRACTOR HEREBY FURTHER AGREES to receive the prices set forth in the Proposal incorporated herein as full compensation for the completion of the Project and, in all respects, to complete said Contract to the satisfaction of the County.

THE CONTRACTOR REPRESENTS AND WARRANTS:

- (i) it is duly formed and validly existing under the laws of the State of _____;
- (ii) it is in good standing in the State of Maryland;
- (iii) it has the power and authority to consummate the obligations and responsibilities contemplated hereby, and has taken all necessary action to authorize the execution, delivery and performance required under this Contract;
- (iv) the Contractor and the person executing this Contract for the Contractor each warrant that he/she is duly authorized by the Contractor to execute and seal this Contract on the Contractor's behalf;
- (v) the warranties of merchantability and fitness for a particular purpose and use and warranties of title and against infringement, and all express warranties contained in this Contract, including but not limited to the Proposal (and any sample or model presented by Contractor and expressly accepted by the County) shall apply to the portion of this Contract pertaining to or for goods;
- (vi) all representations and warranties made in the Proposal and herein remain true and correct in all respects when made, as of the date of this Contract, and throughout the term of this Contract; and
- (vii) there exists no actual or potential conflict of interest between its performance under this Contract and its engagement or involvement in any other personal or professional activities and in the event such conflict or potential conflict arises during the term of this Contract, the Contractor shall immediately advise the County in writing thereof.

THE CONTRACTOR shall not disclose any documentation and information of any kind or nature disclosed to the Contractor in the course of its performance of duties hereunder without the express prior written consent of the County.

Those sections in this Contract which by their nature are intended to survive, including but not limited to, Contractor's representations and warranties, confidential information, and indemnification shall survive the termination of this Contract.

IN WITNESS WHEREOF, the Contractor has hereunto set its hand and seal the day and year first above written.

CON	TRACTOR NAME:		
WITNESS FEDE	RAL TAX ID or SS #:		
	By:		(Seal)
	Name:		
Type (Print) Name	Title:	Date:	
WITNESS:	BALTIMORE COUNTY, MARYLAND		
Executive Secretary Type (Print) Name	By: D'Andrea L. Walker, County Administrati	Date <u>:</u> ve Officer	
APPROVED FOR FORM AND LEGAL AND SUFFICIENCY* (Subject to execution by the duly authorized Administrative official and Chairperson of the County Council, as indicated).	APPROVED: Lauren T. Buckler, Director Department of Public Works & Transportati		
Office of the County Attorney *Approval of Form and Legal Sufficiency does not c	convey		

approval or disapproval of the substantive nature of this

transaction. Approval is based upon typeset documents. All modifications require re-approval.

PERFORMANCE BOND

Bond No.

Principal	Business Address of Principal			
Surety	_ Obligee: BALTIMORE COUNTY, A body corporate and po			
•				
A Corporation of the State of	and authorized to do business in Maryland			
	DOLLARS	\$		
Penal Sum of Bond (express in words and figures)				
Gray Manor Interceptor Rehabilitation		20		
Contract Name	Date of Contract			
21202 SX0		20		
Contract Number	Date Bond Execute	d		

KNOW ALL MEN BY THESE PRESENTS, that we, the PRINCIPAL, above-named, and SURETY, above-named, and authorized to do business in the State of Maryland, are held and firmly bound unto the OBLIGEE, above-named, in the penal sum of the amount stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, THE PRINCIPAL entered into a certain contract with the OBLIGEE described and dated as shown above and is required to provide this bond pursuant to Maryland State law and/or County law and the contract.

NOW, THEREFORE, if the aforesaid PRINCIPAL shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the OBLIGEE with or without notice to the SURETY, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings covenants, terms, conditions and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the SURETY being hereby waived, then, this obligation to be void; otherwise to remain in full force and effect.

THE SURETY FURTHER GUARANTEES That it is (a) licensed in the State of Maryland, (b) rated "B" or better by the A.M. Best Company, (c) on federal funded projects, authorized by the underwriting limitation contained in the U.S. Department of the Treasury Circular 570, as amended, to guaranty the amount of the Bid, and (d) in good standing as determined by the County's Engineer. A Performance Bond is required for each and every Contract in excess of twenty-five thousand (\$25,000). A Performance Bond shall be in the amount equal to at least one hundred (100%) percent of the Contract price. The fully executed Performance Bond shall be delivered by the Bidder to the Department's Division of Construction Contracts Administration no later than the time the Contract is to be executed by the Contractor.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals on the date indicated above, the name and seal of each party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

In Presence of:	Indivi	idual Principal
Witness:	as to:	(SEAL)
Print Name:	Print Name:	
Attest:	Corpo	orate Principal
	(Name of	of Corporation)
Witness:	By:	Affix
Print Name:	Print Name:	Corporate
	Title:	Seal
Attest:		Surety
	(Name c	of Surety)
Witness:	By:	Affix
Print Name:	Print Name:	Corporate
	Title:	Seal

Reviewed for Baltimore County Requirements

Office of the County Attorney

PAYMENT BOND

Bond Number

Principal	Business Address of Principal			
Surety	Obligee:	BALTIMORE COUNT A body corporate		
A Corporation of the State of and authorized to do busing		o do business in Maryla	in Maryland	
Penal Sum of Bond (express in words and figures)	DOI	LLARS \$		
Gray Manor Interceptor Rehabilitation Contract Name	D	ate of Contract	20	
21202 SX0			20	
Contract Number	D	ate Bond Executed		

KNOW ALL MEN BY THESE PRESENTS, that we, the PRINCIPAL, above-named, and SURETY, above-named, and authorized to do business in the State of Maryland, are held and firmly bound unto the OBLIGEE, above-named, in the penal sum of the amount stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, THE PRINCIPAL entered into a certain contract with the OBLIGEE described and dated as shown above and is required to provide this bond pursuant to Maryland State law and/or County Law and the contract.

NOW, THEREFORE, the condition of this obligation is such that if the aforesaid PRINCIPAL shall promptly make payments to all persons supplying labor and/or material to the PRINCIPAL and to any subcontractor of the PRINCIPAL in the prosecution of the work provided for in said contract and any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the SURETY being hereby waived, then, this obligation to be void; otherwise to remain in full force and effect.

THE SURETY FURTHER GUARANTEES That it is (a) licensed in the State of Maryland, (b) rated "B" or better by the A.M. Best Company, (c) on federal funded projects, authorized by the underwriting limitation contained in the U.S. Department of the Treasury Circular 570, as amended, to guaranty the amount of the Bid, and (d) in good standing as determined by the County's Engineer. A Payment Bond is required for each and every Contract in excess of twenty-five thousand (\$25,000). A Payment Bond shall be in the amount equal to at least one hundred (100%) percent of the Contract price. The fully executed Payment Bond shall be delivered by the Bidder to the Department's Division of Construction Contracts Administration no later than the time the Contract is to be executed by the Contractor.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals on the date indicated above, the name and seal of each party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

In Presence of:	Individual Principal		
Witness:	as to:	(SEAL)	
Print Name:	Print Name:		
Attest:	Corporate Principal		
	(Name of Corporation)		
Witness:	Ву:	Affix	
Print Name:	Print Name:	Corporate	
	Title:	Seal	
Attest:	Surety		
Business Address:	(Name of Surety)		
Witness:	Ву:		
Print Name:	Print Name:	Corporate	
	Title:	Seal	
Reviewed for Baltimore County Requirements			

Office of the County Attorney



1. GENERAL REQUIREMENTS

- 1.1 <u>Coverages Required:</u> Unless otherwise required by the specifications or the contract, the Contractor/Vendor shall purchase and maintain the insurance coverage's listed herein.
- 1.2 <u>Certificate of Insurance:</u> Before starting work on the contract, or prior to the execution of the Contract on those bid, the Contractor/Vendor shall provide Baltimore County, Maryland with verification of insurance coverage evidencing the required coverages.
- 1.3 <u>Baltimore County as Insured:</u> The coverage required, excluding Workers' Compensation and Employers' Liability and Medical Malpractice Liability/Professional Liability/Errors and Omissions Liability, must include Baltimore County, Maryland and its agents, employees, officers, directors, and appointed and elected officials as an additional insured.
- 1.4 <u>Contractor's/Vendor's Responsibility:</u> The providing of any insurance herein does not relieve the Contractor/Vendor of any of the responsibilities or obligations the Contractor/Vendor has assumed in the contract or for which the Contractor/Vendor may be liable by law or otherwise.
- 1.5 <u>Failure to Provide Insurance:</u> Failure to provide and continue in force the required insurance shall be deemed a material breach of the contract. The Contractor/Vendor must maintain the insurance coverages required under the terms and conditions on this Contract while this Contract is in effect including renewal and extension terms.

2. INSURANCE COVERAGES

- 2.1 General Liability Insurance
 - 2.1.1 Minimum Limits of Coverage: Personal Injury Liability and Property Damage Liability Combined Single Limit - \$500,000 each occurrence.
 - 2.1.2 Such insurance shall protect the Contractor/Vendor from claims which may arise out of, or result from, the Contractor's/Vendor's operations under the contract, whether such operations be by the Contractor/Vendor, any subcontractor, anyone directly or indirectly employed the by Contractor/Vendor or Subcontractor, or anyone for whose acts any of the above may be liable.
 - 2.1.3 Minimum Coverages to be Included:
 - (a) Independent Contractor's coverage;
 (b) Completed Operations and Products Liability coverage;
 - (c) Contractual Liability coverage.

- 2.1.4 Damages not to be Excluded: Such insurance shall contain no exclusions applying to operations by the Contractor/Vendor or any Subcontractor in the performance of the Contract including but not limited to:
 - (a) Collapse of, or structural injury to, any building or structure;
 - (b) Damage to underground property; or(c) Damage arising out of blasting or
 - explosion.
- 2.2 Automobile Liability Insurance
 - 2.2.1 Minimum Limits of Coverage: Bodily Injury Liability and Property Damage Liability Combined Single Limit - \$500,000 any one accident.
 - 2.2.2 Minimum Coverages to be Included: Such insurance shall provide coverage for all owned, non-owned and hired automobiles.
- 2.3 <u>Workers' Compensation and Employers' Liability</u> Insurance

Such insurance must contain statutory coverage, including <u>Employers' Liability insurance with limits of at least</u>: Bodily Injury by Accident - \$250,000 each accident Bodily Injury by Disease - \$500,000 policy limit Bodily Injury by Disease - \$250,000 each employee

2.4 <u>Valuable Papers and Records Coverage and Electronic Data Processing (Data and Media)</u> <u>Coverage</u>

Minimum Limits of Coverage: \$100,000 Per Claim and Each Occurrence \$100,000 in the Aggregate

2.5 <u>Other</u>

Such other insurance in form and amount as may be customary for the type of business being under taken by the Contractor/Vendor.