



**QUEEN ANNE'S COUNTY
DEPARTMENT OF PUBLIC WORKS**

MAY 2, 2016

**PROJECT MANUAL
CONTRACT 16-01**

**SOUTHERN KENT ISLAND
SANITARY PROJECT**

SEPTIC TANK EFFLUENT PUMPS – PHASE 1

**PROPOSAL DUE
JULY 1, 2016 AT 2:00 PM**

Professional Certification: I hereby certify that these documents were prepared for or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 16974, Expiration Date: June 25, 2016.



QUEEN ANNE'S COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

SOUTHERN KENT ISLAND SANITARY PROJECT

SEPTIC TANK EFFLUENT PUMP INSTALLATION – PHASE 1
CONTRACT NO. SAN 16-01

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BIDDING REQUIREMENTS

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INVITATION TO BID

Sealed bids for the construction of a portion of the sanitary sewerage facilities for Phase 1 of the Southern Kent Island service area (consisting of the subdivisions of Kent Island Estates and Romancock on the Bay), Queen Anne's County, Maryland will be received from qualified bidders by the County Commissioners of Queen Anne's County at the Queen Anne's County Sanitary District, 310 Bateau Drive, Stevensville, Maryland 21666 until 2:00 p.m. local time on **July 1, 2016** at which time they will be opened publicly and read aloud.

The overall project is a failing septic system abatement project which will consist of three construction contracts:

- Contract SAN 16-01 – Septic Tank Effluent Pump Installation
- Contract SAN 16-02 – Community Sewer Main Installation
- Contract SAN 16-03 – Transmission Main Installation

The work of this contract, Contract No. SAN 16-01, consists of the installation of approximately 775 Septic Tank Effluent Pump (STEP) assemblies to service existing homes. Specifically included is the installation of new 1500-gallon concrete tanks, high-head STEP assemblies, electrical work to power the STEP assemblies from the existing home's electric meter, plumbing work to intercept the existing homes' sewer lateral to the existing septic system and to connect the existing homes to the new STEP assemblies, abandonment of the existing septic tanks, and full restoration of the yards post installation.

Copies of the Contract Documents may be obtained beginning **May 2, 2016**. Contract Documents will be available at no cost in electronic format (only in .pdf format) on Maryland's Ebid Marketplace and on the County Web Site at:

<https://emaryland.buyspeed.com/bsa/external/publicBids.sdo>

<http://qac.org/Bids.aspx>

Plan holders shall register with an expression of interest to the QAC Project Manager, Alan Quimby, at aquimby@qac.org. The expression of interest shall identify:

- Contract Number – SAN 16-01
- Contractor's Legal Entity Name & Address
- Contractor Contact Person Name, Phone & E-mail address

General Contractors who do not register an expression of interest with the QAC Project Manager as described above will not be eligible to submit bids for the project.

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A notice of an addendum posting will be sent to all registered plan holders. Any Addenda issued shall be issued via electronic posting on the ebidmarketplace.com and Queen Anne's County Procurement websites (see links listed below). **However, it is the Bidders responsibility to ensure receipt of all addenda.**

<https://emaryland.buyspeed.com/bs0/external/advsearch/advancedSearch.sdo>

<http://qac.org/Bids.aspx>

A pre-bid meeting will be held at the Kent Island Estates Community Hall – 9402 Romancoke Road, Stevensville Maryland at 1:00 p.m. local time on June 6, 2016.

Bidders on this work will be required to comply with:

1. The President's Executive Order No. 11246 as amended by Executive Order 11375. The requirements for bidders and contractors under this order are explained in the Contract Documents.
2. The facilities to be constructed under this Invitation to Bid will include funds from the Maryland Water Quality Revolving Loan Fund. Bidders will be required to comply with Federal and State requirements pertaining to minority business enterprise and women's business enterprise.
3. The Davis Bacon Act labor standards provisions are applicable to this contract.
4. Use of American Iron and Steel provisions are applicable to this contract.
5. The successful bidder will be required to place both a Performance Bond and a Payment Bond, each in the amount of 100% of the contract price, and a Maintenance Bond in the amount of 5% of the contract price.

Each Bidder must submit a bid security of five (5) percent with his bid, in the form and subject to the conditions provided in the Instructions to Bidders. Bids to remain open for 120 days. No bidder may withdraw his bid within one hundred twenty (120) days after the actual date of the opening thereof.

The Owner reserves the right, in the exercise of its sole judgment, to reject any or all Bids, and to re-advertise and award the Contract in the regular manner, or to waive any informalities, irregularities, mistakes, errors or omissions in any Bid received and to accept any Bid deemed to be responsive to this invitation and favorable to the interests of the County.

The County Commissioners of Queen Anne's County

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INSTRUCTIONS TO BIDDERS

1. DEFINED TERMS

Terms used in these Instructions to Bidders, are defined and have the meanings assigned to them in the General Conditions.

The term "Lowest Responsible Responsive Bidder" means the Bidder to whom Owner (on the basis of Owner's evaluation as hereinafter provided) makes an award on the basis of the total bid.

The term "Owner" as used in the Contract Documents refers to the County Commissioners of Queen Anne's County. Project Manager for the Owner shall be Alan L. Quimby, Chief Sanitary Engineer, Queen Anne's County, Department of Public Works – Sanitary District, P.O. Box 10, 310 Bateau Drive, Stevensville, MD 21666-0010, phone number: 410-643-3535. E-mail: aquimby@qac.org.

The term "Engineer" refers to the engineering firm shown on the design drawings. All inquiries during the bidding period should be addressed to the Owner's Project Manager who will distribute the questions to the Engineer as necessary.

2. COPIES OF BIDDING DOCUMENTS

2.1 Complete sets of the Bidding Documents may be obtained digitally as noted in the Invitation to Bid.

2.2 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.3 Owner and Engineer in making Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

2.4 It is the Bidder's sole responsibility to ensure they are in receipt of any and all addenda issued in the preparation of their Bid as is stated in the Invitation to Bid.

3. QUALIFICATIONS OF BIDDERS

3.1 To further demonstrate qualifications to perform the Work, each Bidder must be prepared to submit within five days of Owner's request, written evidence such as financial data, previous experience and evidence of authority to conduct business in the jurisdiction where the Project is located.

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- 3.2 Bidders must register with the Project Manager as is stated in the Invitation to Bid. Failure to do so shall render their Bid non-responsive.

4. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- 4.1 Before submitting a Bid, each Bidder must (a) examine the Contract Documents thoroughly, (b) visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the Work, (c) familiarize himself with federal, state and local laws, ordinances, rules and regulations that may in any manner affect cost, progress or performance of the Work; and (d) study and carefully correlate Bidder's observations with the Contract Documents. Special attention is directed to the Supplemental Conditions.

Bidder shall correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents and promptly give Owner and Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Owner and Engineer is acceptable to Bidder.

- 4.2 Reference is made to the General Conditions and Supplemental Conditions for the identification of those reports of investigations and tests of subsurface physical conditions and subsurface utilities at the site or otherwise which have been relied upon by Engineer or their agent in preparing the Drawings and Specifications. Owner will make such reports available to Bidder via Appendix B. These reports are not guaranteed as to accuracy or completeness, nor are they part of the Contract Documents. The Contractor must assume all risks in excavating for this Project and shall not be entitled to rely on any subsurface information obtained for the Engineer or indirectly from the Owner. Bidders, in using this information, thereby release Owner and Engineer of all liability as to the information contained within the subsurface information, and such Bidders accept such subsurface information in accordance with the provisions of the General Conditions. Before submitting his Bid each Bidder will, at his own expense, conduct such investigations and tests as the Bidder may deem necessary to determine his Bid for performance of the Work in accordance with the time, price and other terms and conditions of the Contract Documents.
- 4.3 Upon notification, Owner will allow each Bidder to access the site in order to conduct such investigations and tests as each Bidder deems necessary for submission of his Bid.

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- 4.4 The lands upon which the Work is to be performed, rights-of-way for access thereto, and other lands designated for use by Contractor in performing the Work are identified in the Supplemental Conditions, General Requirements or Drawings.
- 4.5 The submission of a Bid will constitute a representation by the Bidder that he has complied with every requirement of this Article 4 and that the Contract Documents are sufficient in scope and detail to indicate and convey a complete understanding of all terms and conditions for the performance of the Work. Bidder agrees at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

5. INTERPRETATIONS

All questions about the meaning or intent of the Contract Documents shall be submitted to Owner's Project Manager in writing at least fourteen (14) days prior to bid opening. Questions received later than ten days prior to the date for opening of Bids will not be answered. Replies will be issued only by Addenda made available not later than seven days prior to bid opening. Failure of any Bidder to receive such Addendum shall not relieve Bidder from the obligations under the Bid as submitted. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

6. BID SECURITY

- 6.1 Bid Security shall be made payable to Owner, in an amount of five (5) percent of the Bidder's maximum Bid price and in the form of a certified check, bank cashier's check, or a Bid Bond on form attached, issued by a Surety meeting the requirements of paragraph 6.3.
- 6.2 The Bid Security of the Lowest Responsible Responsive Bidder will be retained until such Bidder has furnished the required Performance Bond and Payment Bond and executed the Agreement whereupon it will be returned. If the successful Bidder fails to furnish the required Contract Security within 10 days of the Notice of Intent to Award or fails to execute and return the Agreement within ten days of the Notice of Award, Owner may annul Notice of Intent to Award or the Notice of Award and the Bid Security of that Bidder will be forfeited. The Bid Security of the three apparent lowest responsible responsive Bidders may be retained by Owner until the earlier of the seventh day after the "effective date of the Agreement" (which term is defined in the General Conditions) by Owner to Contractor or ten days after the time specified for Bids to remain open. Bid Security of other Bidders will be

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returned within ten days of the Bid opening.

- 6.3 All bonds submitted as Bid Security shall be executed by surety companies legally authorized to do business in Maryland. Such surety companies shall also be named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in current Circular 570 by the Audit Staff Bureau of Accounts, U.S. Treasury Department. Attorneys-In-Fact who sign Bid Bonds must file with each Bond a certified copy of their Power of Attorney to sign said Bonds, bearing the same date as the Bonds.

7. CONTRACT TIME

The number of days within which the Work is to be completed (the Contract Time) is set forth in the Agreement. It represents the number of days from the Effective date of Agreement to the date of Approval of the Final Payment.

8. LIQUIDATED DAMAGES

Provisions for liquidated damages are set forth in the Agreement.

9. SUBSTITUTE MATERIAL AND EQUIPMENT

- 9.01 The Contract, if awarded, **will be on the basis of material and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or equal" items.** Failure to do so, as would be evidenced by the Supplier List in the Bid package, will be cause to find the Bid non-responsive and will be cause for rejection.

- 9.02 Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or equal" item of material or equipment may be furnished or used by Contractor, if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Notice of Intent to Award has been issued. The procedure for submittal of any such application by Contractor and consideration by Engineer is set forth in paragraph 6.7 of the General Conditions and supplemented in the General Requirements in paragraph 1.06.

10. SUBCONTRACTORS, ETC.

- 10.1 A list of all Subcontractors and other persons and organizations (including those who are to furnish the principal items of material and equipment) proposed for those portions of the Work as to which such identification is so required shall be submitted with the bid and an experience statement is required on demand after the Bids are received with pertinent information as

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to similar projects and other evidence of qualification for each such Subcontractor, person and organization if requested by Owner. Information as to similar projects and other evidence of qualification for each such Subcontractor, person and organization shall be submitted upon request by Owner. If Owner or Engineer after due investigation has reasonable objection to any proposed Subcontractor, other person or organization, either may, before giving the Notice of Intent to Award, request the apparent Lowest Responsible Responsive Bidder to submit an acceptable substitute and the Bid Price shall be increased or decreased by the difference in cost occasioned by such substitution. If the apparent Lowest Responsible Responsive Bidder declines to make any such substitution, the contract may not be awarded to such Bidder, but his declining to make any such substitution will not constitute grounds for sacrificing his Bid Security. For any Subcontractor, other person or organization so listed and to whom Owner or Engineer does not make written objection prior to the giving of the Notice of Award it will be deemed the Owner and Engineer have no objection.

- 10.2 No Contractor shall be required to contract with any Subcontractor, other person or organization against whom he has reasonable objection.
- 10.3 Prior to execution of final contract documents or during construction, it is the Contractor's responsibility to notify, and seek approval from, the Owner of any additions or deletions to the required list of Subcontractors.

11. BID FORM

- 11.1 The Bid Form is included in the Contract Documents.
- 11.2 Bid Forms must be completed in ink or by typewriter. Where unit prices for estimated quantities appear on the Bid Form, the Bid price of each item on the form must be stated and extended; in case of a conflict, the unit price bid will take precedence and not the totals or extensions.
- 11.3 Estimates of quantities furnished by the Engineer are approximate and have been used as a basis for estimating the cost of Work, and will be used for the purpose of tabulating and comparing Bids and awarding the contract. The Engineer has endeavored to estimate quantities accurately; and to the best of his knowledge the information shown on the drawings is reasonably correct.
- 11.4 Bids by corporations must be executed in the corporate name by the president or vice-president (or other person having authority to bind the corporation, accompanied by corporate power of attorney) and the corporate seal must be affixed and attested by the secretary or an assistant secretary.

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The corporate address and state of incorporation shall be shown below the signature.

- 11.5 Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.
- 11.6 Bids by Limited Liability Corporations (LLC) must be executed in the LLC name and signed by an authorized member, whose title must appear under the signature and the official address of the LLC must be shown below the signature.
- 11.7 All names must be typed or printed below the signature.
- 11.8 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers and dates of which shall be filled in on the Bid Form).
- 11.9 The address to which communications regarding the Bids are to be directed must be shown.

12. SUBMISSION OF BIDS

- 12.1 Bids shall be submitted at the time and place indicated in the Advertisement for Bid and accompanied by the Bid Security and other required documents. No Bid shall be considered if it arrives after the time set for bid opening. If the bid is sent through the mail or other delivery system the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face thereof.
- 12.2 Bids shall be submitted on the Bidding Document forms furnished as a separate packet with the Contract Documents. The bid packet consists of the following:
 - Bid Form
 - Bid Bond
 - Bidder's Experience
 - Subcontractor and Supplier List
 - Certification of Non-segregated Facilities
 - Certification of Equal Employment Opportunity
 - Non-Collusion Certificate
 - Affirmative Action Plan Certification
 - Conflict of Interest Disclosure
 - Assurances for Compliance with Federal Laws & Regulations

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13. OPENING OF BIDS

Bids will be opened publicly and read aloud, and an abstract of the amounts of the base Bids, unit prices, and major alternates (if any) will be made available after the opening of Bids.

14. BIDS TO REMAIN OPEN

Except as otherwise permitted by law, Bids shall remain irrevocable for the period stated in the Invitation to Bid.

15. AWARD OF CONTRACT

15.1 Owner reserves the right to reject any and all Bids, to waive any and all informalities and the right to disregard all nonconforming, non-responsive or conditional Bids. Discrepancies between words and figures will be resolved in favor of words. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

15.2 In evaluating Bids, Owner shall consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and unit prices if requested in the Bid Form. **The award will be made on the basis of the total bid using only the manufacturers as noted in the specifications.**

15.3 Owner may consider the qualifications and experience of Subcontractors and other persons and organizations (including those who are to furnish the principal items of material or equipment) proposed for those portions of the Work as to which the identity of Subcontractors and other persons and organizations must be submitted as provided in the General Conditions. Operating costs, maintenance considerations, performance data and guarantees of materials and equipment may also be considered by Owner.

15.4 Owner may conduct such investigations as he deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of the Bidders, proposed Subcontractors and other persons and organizations to do the Work or furnish equipment in accordance with the Contract Documents to Owner's satisfaction within the prescribed time.

15.5 If the contract is to be awarded, it will be awarded to the lowest responsible responsive Bidder whose evaluation by Owner indicates to Owner that the award will be in the best interests of the Project.

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15.6 If the contract is to be awarded, Owner will give the lowest responsible responsive Bidder a Notice of Award within the time specified for Bids to remain irrevocable.

16. PERFORMANCE AND OTHER BONDS

Paragraph 5.1 of the General Conditions describes the Owner's requirements as to Performance and Payment Bonds. The lowest responsible responsive Bidder shall within ten days of the issuance of the Notice of Intent to Award furnish Performance and Payment Bonds each in an amount equal to 100% of the Bid, to the office of the Project Manager unless otherwise specified.

17. INSURANCE

Paragraph 5.2 through 5.6 of the General Conditions describes the Owner's requirements as to Insurance. The lowest responsible responsive Bidder shall furnish said proof of insurance as indicated in paragraph 5.7 of the General Conditions.

18. SIGNING OF AGREEMENT

When Owner gives a Notice of Award to the lowest responsible responsive Bidder, it will be accompanied by at least four (4) unsigned duplicate original copies of the Agreement and all other Contract Documents. Within ten days thereafter Contractor shall sign and deliver said duplicate original copies of the Agreement to Owner with all other Contract Documents attached. Within ten days thereafter, the duplicate original copies will be signed by Owner. The Owner, the Contractor, and the Engineer will each receive an executed duplicate original copy of the Contract Documents.

19. WATER QUALITY REVOLVING LOAN (WQRL) REQUIREMENTS

Attention is called to the MDE funding insert which is identified as Section 00450 of the Project Manual. Bidders will be required to adhere to all applicable provisions, not just those mentioned below. Some issues of note:

19.1 Anti-Degradation Implementation Procedures – (refer to page 3 of Section 00450) – Note there are no Tier II catchment areas in the work area so these provisions are not applicable.

19.2 Buy American Iron and Steel – (refer to page 5 of Section 00450)

19.3 Assurance For Compliance With Federal Laws And Regulation – (refer to page 7 of Section 00450) - The apparent low bidder needs to submit this form with the bid package.

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19.4 Disadvantaged Business Enterprise Program – (refer to page 8 of Section 00450) - The attention of Bidders is directed to the requirements pertaining to Disadvantaged Business Enterprises (DBE). **Participation in strict accordance to the Good Faith Efforts set forth in this insert is essential if to be awarded the bid. These efforts apply to any subcontractors as well.**

Within seven (7) days of the bid opening date, the apparent low bidder must submit full evidence of participation with the DBE program by submitting all documentation as well as the completed forms provided in the WQRL insert. Failure to submit DBE requirements within the specified time limit will be considered non-responsible.

19.5 Davis Bacon Wage Rates – (refer to page 32 of Section 00450) – Wage rates will apply to this work with all required documentation and record keeping provisions as noted in the insert. Refer to the provisions applicable to Government Entities. Note current applicable wage rates are located in Section 00455 of the Project Manual.

END OF SECTION

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BID FORM

To: The County Commissioners of Queen Anne's County

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price indicated in this Bid within the Contract Time and in accordance with the Contract Documents.

The undersigned BIDDER submits this Bid with the understanding that the OWNER reserves the right to reject any or all bids submitted.

2. BIDDER accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid Security.

BIDDER will submit the required Performance and Payment Bonds within ten days after the date of OWNER's Notice of Intent to Award.

BIDDER will sign the Agreement within ten days after the date of OWNER's Notice of Award.

3. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:
 - (a) BIDDER has examined copies of all the Contract Documents and hereby acknowledges receipt of the following Addenda and acknowledges the bid reflects the changes created by these addenda:

<u>Number</u>	<u>Date</u>
_____	_____
_____	_____
_____	_____

- (b) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or

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corporation; BIDDER has not directly or indirectly induced or solicited or induced any person, firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over OWNER; and

- (c) BIDDER hereby states that he has available adequate equipment and finances to properly and expeditiously prosecute the Work as bid, and is prepared to present further information to substantiate this statement.
4. BIDDER agrees that the Work will be completed on or before the dates or within the number of consecutive days indicated in the Agreement.
- BIDDER accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work on time.
5. The following documents are attached to and made a condition of this Bid:
- (a) Required Bid Security
 - (b) Bidder's Experience Statement with supporting data.
 - (c) Other documents as required by the Instructions to Bidders or Contract Documents.
6. Communications concerning this Bid may be forwarded to the address of BIDDER indicated below.
7. The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions.
8. BIDDER covenants and warrants that he has had sufficient time to examine the site of the Work; that he has examined the site of the Work; and that he has based the within Contract Prices on his own independent examination and investigation of the site, subsurface materials, and conditions and has not relied on any subsurface information furnished to him by Owner or Engineer. BIDDER has examined the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress or performance of the work and has made such independent investigations as BIDDER deems necessary.
9. BIDDER will complete the Work for the following price(s):

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BID SCHEDULE

CONTRACT NO. SAN 16-01

<u>ITEMS</u>	<u>DESCRIPTION</u>	<u>ESTIMATED QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>EXTENSION</u>
S-1	Mobilization	1	LS	\$_____	\$_____
S-2	STEP Tank Placement	775	EA	\$_____	\$_____
S-3	Traffic Bearing STEP Tanks	40	EA	\$_____	\$_____
S-4	STEP Assemblies	775	EA	\$_____	\$_____
S-5	4" Gravity Sewer	43,000	LF	\$_____	\$_____
S-6	4" Sewer Cleanouts	1,550	EA	\$_____	\$_____
S-7	1" Pressure Sewer	38,750	LF	\$_____	\$_____
S-8	Connection to House	775	EA	\$_____	\$_____
S-9	Control Panel	775	EA	\$_____	\$_____
S-10	Conduit from Panel	62,000	LF	\$_____	\$_____
S-11	Electric Meter Modification	520	EA	\$_____	\$_____
S-12	Electric Meter Replace	255	EA	\$_____	\$_____
S-13	Abandon Septic Tanks	800	EA	\$_____	\$_____
S-14	Contingent Electrical	200	HR	\$_____	\$_____
S-15	Contingent Plumbing	200	HR	\$_____	\$_____
S-16	Contingent Spin-Around	100	EA	\$_____	\$_____
S-17	Contingent Concrete	50	CY	\$_____	\$_____
S-18	Contingent Backfill	3,000	CY	\$_____	\$_____

Bidder: _____

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SEPTIC TANK EFFLUENT PUMP INSTALLATION

<u>ITEMS</u>	<u>DESCRIPTION</u>	<u>ESTIMATED QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>EXTENSION</u>
S-19	Contingent Excavation	500	CY	\$_____	\$_____
S-20	Contingent Flowable Fill	400	CY	\$_____	\$_____
S-21	Contingent Tank Removal	20	EA	\$_____	\$_____

SUBTOTAL SEWER ITEMS S-1 THROUGH S-21 \$_____

IN WORDS _____

SUBMITTED this _____ day of _____, 201__.

Bidder: _____

QUEEN ANNE'S COUNTY, MD
SOUTHERN KENT ISLAND SANITARY PROJECT
SEPTIC TANK EFFLUENT PUMP INSTALLATION

A CORPORATION

Corporation Name: _____

State of Incorporation: _____

By: _____ /s/ _____
(Person Authorized to Sign) (Title)

(CORPORATE SEAL)

Attest: _____ /s/ Corporate Secretary

Business Address: _____

Phone No.: (____) _____

A LIMITED LIABILITY COMPANY

LLC Name: _____

State of Organization: _____

By: _____ /s/ _____
(Person Authorized to Sign) (Title)

(CORPORATE SEAL)

Attest: _____ /s/ Corporate Secretary

Business Address: _____

Phone No.: (____) _____

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BID BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT _____

of _____ as Principal, and

_____ a corporation organized and existing under the laws of the State of Maryland and authorized to do business in the State of Maryland, as Surety, are held and firmly bound unto the County Commissioners of Queen Anne's County, Maryland, as Obligee, in the full and just sum of

_____ Dollars (\$ _____),
(written in words)

lawful money of the United States of America, 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 those presents.

WHEREAS, the said Principal is herewith submitting its Bid proposal for the construction of **Contract No. SAN 16-01, Southern Kent Island Sanitary Project – Phase 1 - Septic Tank Effluent Pumps.**

THE CONDITION OF THIS OBLIGATION is such that if the aforesaid Principal shall be given Notice of Intent to be awarded the Contract, the said Principal will, within the time required, give good and sufficient Bonds to secure the performance of the terms and conditions of the Contract and enter into an Agreement, then this obligation to be void; otherwise, the Principal and Surety will pay unto the Obligee the full amount of this Bid Security.

Signed, Sealed and Delivered this _____ day of _____, 20__.

Attest: PRINCIPAL

_____/s/ By: _____/s/
Secretary President/Owner

(SEAL)

QUEEN ANNE'S COUNTY, MD
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SURETY

_____/s/ By: _____/s/
Witness Attorney-in-fact

(SEAL)

NOTES:

Attach an appropriate Power of Attorney, dated as of the same date as the bond, evidencing the authority of the Attorney-in-Fact to act on behalf of the corporation.

If the Contractor is a Partnership, all partners shall execute the bond.

Surety companies executing bonds must appear on the U.S. Department of the Treasury most current Bond List (Circular 570 as amended). Bond amounts are subject to the underwriting limitation listed in the most recent Circular 570.

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BIDDER'S EXPERIENCE

The following is a list of the projects similar in character (although not necessary dealing with the installation of STEP units) and scope to the Work specified under this Contract which have been successfully completed by this Bidder during the past ten years.

This information must be furnished by each Bidder. The term "Complete" means accepted and final payment received from the Owner or authorized representative.

<u>Location & Type of Work</u>	<u>Owner's Name & Address</u>	<u>Engineer</u>	<u>Date Completed</u>	<u>Contract Price</u>

Bank Reference: _____

If the apparent low bidder, I hereby agree to furnish to the Owner a complete and current financial statement upon request.

_____/s/ _____
Bidder's Signature Date

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SUBCONTRACTOR LIST

Bidder proposes to utilize the following subcontractor on this project (indicate 'Self' if work is to be done by Bidder):

STEP Excavation	Name: _____ Address: _____
STEP Installation	Name: _____ Address: _____
Electrical Work	Name: _____ Address: _____
Plumbing Work	Name: _____ Address: _____
Septage Hauler	Name: _____ Address: _____
Site Restoration	Name: _____ Address: _____
Other (Identify) _____	Name: _____ Address: _____
Other (Identify) _____	Name: _____ Address: _____
Other (Identify) _____	Name: _____ Address: _____

Bidder's Signature

Date

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CERTIFICATION OF NONSEGREGATED FACILITIES

By submission of this Bid, the Bidder certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The Bidder further certifies that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The Bidder agrees that a breach of this certification is a violation of the Equal Opportunity clause in any contract resulting from acceptance of this bid.

As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin because of habit, local custom, or otherwise.

The Bidder further agrees that (except where he has obtained identical certifications from proposed Subcontractors for specific time periods) he will obtain identical certifications from proposed Subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provision of the Equal Opportunity clause, and that he will retain such certifications in his files.

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

Date: _____

(Signature)

(Typed Name & Title of Signer)

Company Name and Address:

QUEEN ANNE'S COUNTY, MD
SOUTHERN KENT ISLAND SANITARY PROJECT
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CERTIFICATION OF
EQUAL EMPLOYMENT OPPORTUNITY

This certification is required pursuant to Executive Order 11246 (30 CFR 12319-25). The implementing rules and regulations provide that any Bidder or prospective Contractor, and any of their proposed Subcontractors, shall state as an initial part of the Bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the Equal Opportunity clause - and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the Bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

CERTIFICATION BY BIDDER

1. The Bidder has participated in a previous contract or subcontract subject to Executive Order 11246 regarding Equal Employment Opportunity or a proceeding similar Executive Order.

Yes _____ No _____

2. If the Bidder has participated in such a contract or subcontract, he has filed all compliance reports that were required to be filed in connection with such contract or subcontract.

Yes _____ No _____

3. The Bidder has previously had contracts subject to the written affirmative action program requirements of the Secretary of Labor.

Yes _____ No _____

4. If the Bidder has participated in a contract or subcontract, he has developed and placed on file at each establishment affirmative action programs as required by the rules and regulations of the Secretary of Labor.

Yes _____ No _____

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(If the answer to item 2 or item 3 is "No", attach a detailed explanation to this certification.)

I hereby certify that the information given herein is true and complete to the best of my knowledge and belief.

I understand that, if I have failed to file any compliance reports that have been required, I am not eligible and will not be eligible to have my bid considered or to enter into the proposed contract unless and until I make an arrangement regarding such reports that is satisfactory to the office where the reports are to be filed.

Typed Name

Title

Signature

Date

Business Name and Address:

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NON-COLLUSION CERTIFICATION

Bidder's Name: _____

Address: _____

This is to certify that neither the above named Bidder nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Bidder, firm, or person to submit collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or are in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm, or person to fix the price or prices in the attached Bid or of any other Bidder or to fix any overhead, profit, or cost element of the collusion, conspiracy, connivance or unlawful agreement for any advantage against the Owner or any person interested in the proposed Contract: and the price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest.

Signed _____

Title

Date

SEAL - If Bidder is a Corporation

Attest: _____

Secretary

QUEEN ANNE'S COUNTY, MD
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AFFIRMATIVE ACTION PLAN CERTIFICATION

By submission of this bid, bidder certifies that to the greatest extent feasible, his hiring and training practices will be in compliance with the HUD 4010 Labor Provisions and Section 3 of HUD Act of 1968 such that:

- a) to the greatest extent feasible, opportunities for the training and employment be given to lower income residents of the project area and contracts for work be awarded to business concerns in the project area,
- b) attempt to recruit from the project area through local advertisement media, signs placed on the project site, and community organizations,
- c) maintain a list of lower income people if readily available and offer employment to them if qualified and if a vacancy exists.

Date: _____

(Signature)

(Typed Name of Signer)

(Title of Signer)

Company name and address:

QUEEN ANNE'S COUNTY, MD
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CONFLICT OF INTEREST DISCLOSURE & EMPLOYMENT OF ALIENS STATEMENT

In connection with the undersigned's participation in the bid process or request for proposals being considered by the County Commissioners of Queen Anne's County ("the County") the undersigned does affirm under the penalties of perjury as follows:

I have reviewed the materials provided by the County in connection with my proposed bid or proposal and reviewed such records of my company and business as necessary to make the following statements:

(Check all appropriate boxes)

To the best of my knowledge and belief, neither I, the company identified below, nor any employee of the company have been involved or are presently involved in any situations or actions that might be regarded as an actual or potential conflict of interest in the event of a successful bid or award.

It appears that I, the company identified below or an employee of the company have been involved in some situations or actions that might be regarded as a potential conflict of interest should I submit the successful bid or proposal. Details of such situations and/or actions are as follows (attach additional sheets as necessary):

1. _____

2. _____

The following situations or actions in which I, my company or an employee of the company are presently involved might be regarded as a potential conflict of interest if I submit the successful bid or proposal (attach additional sheets as necessary):

1. _____

2. _____

I have attached a list of all present contracts between the company named below and the County.

Furthermore, vendors providing goods or services to Queen Anne's County Government, as a condition of doing business with the County, are required to comply with all applicable laws and regulations relating to the employment of aliens.

Should vendors providing goods or services to Queen Anne's County fail to comply with applicable laws and regulations relating to the employment of aliens, such failure shall constitute a material breach of the vendor's contractual relationship with Queen Anne's County and the County may take

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all reasonable steps to terminate the County's contractual relationship with the vendor. If you have questions, please consult the County Department that manages your vendor contract.

Signature: _____ Date: _____

Name: (please print) _____

Company/Organization: _____

ASSURANCES FOR COMPLIANCE WITH FEDERAL LAWS AND REGULATIONS

Project Name: _____ Contract No. (if applicable): _____

The contractor is required to comply with the following Federal laws and regulations:

1. Non-discrimination in Employment in accordance with Executive Order 11246 of September 24, 1965 entitled "Equal Employment Opportunity" as amended by Executive Order 11375 of October 13, 1967.
2. Debarment in accordance with the Executive Order 12549 and Executive Order 11246.
3. Anti-kickback in accordance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874).
4. Contract Work Hours and Safety Standards in accordance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330).
5. Compliance with Guidelines Contained in 40 CFR 247-254 (RCRA - Section 6002).
6. The prevailing Federal wage rates as determined by the U.S. Department of Labor under the Davis-Bacon and related acts. The prevailing wage determination category that should be used for this project is Heavy Construction (including water and sewer). Available at: <http://www.wdol.gov/>.

General Decision Number: _____ Date: _____

7. Maryland Antidegradation Implementation Procedures as promulgated in three regulations: COMAR 26.08.02.04 sets out the policy itself, COMAR 26.08.02.04-1, provides for identification and implementation of Tier II (high quality waters) of the antidegradation policy, and COMAR 26.08.02.04-2 that describes Tier III (Outstanding National Resource Waters or ONRW), the highest quality waters. No Tier III waters have been designated at this time.
8. Use of American Iron and Steel, as promulgated by H.R. 3547, "Consolidated Appropriations Act, 2014," Division G, Title IV, enacted on January 17, 2014.

I do solemnly declare and affirm that I am obligated to comply with the above Federal laws and regulations. It is understood that non-compliance with any one of the above Federal laws and regulations will be sufficient reason to cause termination of the contract.

Contractor

Signed by: _____
Authorized Officer

Date

Name (Print)

Title (Print)

00423

REVOLVING LOAN FUND PROVISIONS

CONTRACT NO. SAN 16-01

00450	Maryland Revolving Fund Requirements
00455	Prevailing Wage Rates

**REQUIREMENTS AND CONTRACT PROVISIONS FOR THE TREATMENT WORKS PROJECTS
FINANCED THROUGH THE MARYLAND WATER QUALITY REVOLVING LOAN FUND
AND THE MARYLAND DRINKING WATER REVOLVING LOAN FUND
DEPARTMENT OF THE ENVIRONMENT
STATE OF MARYLAND**

The project or segment thereof to be constructed in accordance with these contract documents is subject to the following requirements. In the event of conflict with other requirements of the contract documents, the following requirements control unless the requirement is a minimum requirement. Nothing in this document shall be construed to prohibit the owner from requiring additional assurances, guarantees, indemnities, or other contractual requirements from any other party to this agreement.

- I. **ASSURANCES FOR COMPLIANCE WITH THE FOLLOWING FEDERAL AND STATE LAWS AND REGULATIONS:**
 1. **NON-DISCRIMINATION IN EMPLOYMENT**
 2. **DEBARMENT**
 3. **ANTI-KICKBACK**
 4. **CONTRACT WORK HOURS AND SAFETY STANDARDS.**
 5. **COMPLIANCE WITH CFR 40 247– 254 (RCRA - SECTION 6002)**
 6. **COMPLIANCE WITH PREVAILING FEDERAL WAGE RATES UNDER THE DAVIS-BACON AND RELATED ACTS IN ACCORDANCE TO SECTION VI OF THIS DOCUMENT**
 7. **MARYLAND ANTIDEGRADATION IMPLEMENTATION PROCEDURES**
 8. **USE OF AMERICAN IRON AND STEEL**
- II. **DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION**
 - **GUIDANCE DOCUMENTS AND FORMS (EPA & STATE FORMS)**

(Performance of the good faith steps are required, regardless of goal achievement. All information is to be submitted to the owner, prior to the owner's award of the contract, UNLESS OTHERWISE DIRECTED BY THE OWNER).
- III. **PRESIDENTIAL DOCUMENTS**
 - **ATTACHMENT II**

EXECUTIVE ORDER 13202 of February 17, 2001

EXECUTIVE ORDER 13208 of April 8, 2001
- IV. **SEVERABILITY**
- V. **PROJECT SIGN**
- VI. **FEDERAL WAGE RATE REQUIREMENTS UNDER THE DAVIS-BACON AND RELATED ACTS**

I. ASSURANCES

The contractor is required to comply with the Federal laws and regulations in regard to non-discrimination in employment, debarment, anti-kickback, contract work hours and safety standards, and prevailing Federal wage rates under the Davis-Bacon and related acts as delineated below.

1. Non-discrimination in Employment:

The contractor is required to comply with Executive Order 11246 of September 24, 1965 entitled "Equal Employment Opportunity" as amended by Executive Order 11375 of October 13, 1967.

The contract for the work under this proposal will obligate the prime contractor and its subcontractors not to discriminate in employment practices.

The contractor shall not maintain or provide for his/her employees the facilities, which are segregated on a basis of race, creed, color, or national origin, whether such facilities are segregated by directive or on a de facto basis.

The contractor must, if requested, submit a compliance report concerning their employment practices and policies in order to maintain his/her eligibility to receive the award of the contract.

The contractor must be prepared to comply in all respects with the Contract Provisions regarding non-discrimination, as stipulated under the Labor Standards.

2. Debarment:

Under Executive Order 12549, an individual or organization debarred from participation in Federal assistance or benefit programs may not receive any assistance award under a Federal program, or a sub-agreement thereunder for \$25,000 or more.

Therefore, the bidder as an individual or as an organization, presently debarred, suspended, proposed for debarment, will be declared ineligible to participate in bidding the proposed contract as a prospective recipient of financial assistance from the Maryland Department of the Environment.

The contractor shall not enter into any sub-contract with any individual, firm or organization debarred from Government contracts pursuant to Executive Order 11246.

3. Anti-kickback:

The contractor and/or its sub-contractors shall comply with the Copeland "Anti-Kickback" Act (18 U.S.C. 874). Any evident illicit kickback practice in any shapes or forms will cause termination of the contract.

4. Contract Work Hours and Safety Standards:

The contractor and/or its sub-contractors shall comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330).

5. Compliance with 40 CFR: 247– 254 (RCRA - Section 6002):

The contractor shall comply with the guidelines contained in 40 CFR 247– 254 (Section 6002 of the Resource Conservation and Recovery Act).

State and local recipients and sub-recipients of grants, loans, cooperative agreements or other instruments funded by appropriated Federal funds shall give preference in procurement programs to the purchase of recycled products pursuant to the EPA guidelines.

6. Compliance with Prevailing Federal Wage Rates under the Davis-Bacon and Related Acts in accordance to Section VI of this document.

All laborers and mechanics employed by contractors and sub-contractors on projects funded directly by or assisted in whole or in part by and through the Federal Government programs including the State Revolving Loan fund shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code. With respect to the labor standards

specified in this section, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C.App.) and section 3145 of title 40, United States Code. Most recent Federal prevailing wages can be obtained from: <http://www.wdol.gov/>

The prevailing wage determination category that should be used for this project is Heavy Construction (including water and sewer). This determination is based on the Federal Department of Labor Wage and Hour Division classification.

7. **Maryland Antidegradation Implementation Procedures:**

The Clean Water Act requires three components to water quality standards that set goals for and protect each States' waters. The three components are: (1) designated uses that set goals for each water body (e.g., recreational use), (2) criteria that set the minimum conditions to support the use (e.g., bacterial concentrations below certain concentrations) and (3) an antidegradation policy that maintains high quality waters so they are not allowed to degrade to meet only the minimum standards. The designated uses and criteria set the minimum standards for Tier I.

Maryland's antidegradation policy has been promulgated in three regulations: COMAR 26.08.02.04 sets out the policy itself, COMAR 26.08.02.04-1, provides for identification and implementation of Tier II (high quality waters) of the antidegradation policy, and COMAR 26.08.02.04-2 that describes Tier III (Outstanding National Resource Waters or ONRW), the highest quality waters. No Tier III waters have been designated at this time. Any capital funding project occurring within Tier II catchment areas, which are areas that drain to Maryland's high quality designated Tier II stream segments, must undergo Antidegradation Review.

To determine if your project is located within Tier II catchment area, please visit:

<http://www.mde.state.md.us/programs/Water/TMDL/Water%20Quality%20Standards/Pages/HighQualityWatersMap.aspx>

Or contact Ms. Angel Valdez of MDE Environmental Standards and Assessment Program, at (410) 537-3606, or at angel.valdez@maryland.gov.

Please be aware that projects subject to an Antidegradation or Tier II review must adequately address comments that arise during the review before funding can be granted.

How Tier II Stream Segments are Designated

- Currently high quality stream segments are designated for the characteristic of biology using Maryland Biological Stream Survey (or comparable) data
- Streams are recorded in Table O (COMAR 26.08.02.04-1) and the pending list of streams awaiting promulgation or corrections is maintained on the MDE website.

The Basic Antidegradation Review Process

Many of the projects funded by the Water Quality Financing Administration (WQFA) at MDE result in a net improvement to water quality. As a result, the antidegradation review process for WQFA generally involves making sure that any land disturbance activities associated with the project includes additional controls. Any other antidegradation reviews specific to project discharges (e.g. end-of-pipe) will be addressed separately through the permitting process.

To help expedite the review process the following list of practices has been provided. These practices include "accelerated stabilization, redundant controls, increased riparian buffers, passive or active chemical treatment, or a reduction in the size of the grading unit" as stated in the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control to address Tier II issues. All practices implemented should be evident in plans. When using the list below to aide in planning keep in mind that application and site specifics will ultimately determine each recommendation's applicability. Also realize that this list is not exhaustive and additional practices may be identified as specific plans become available.

- **Initial Considerations:** including limiting vegetative disturbances, phasing and/or sequencing, accelerated stabilization, minimum weekly inspections, and timing of in-stream work to low flow periods or clear weather forecasts
- **Expanded Riparian Buffers (for new structures/expansions only):** from 100 to 230 feet, depending upon slope and soil composition, on all intermittent and perennial streams within project footprint to help further address direct hydrologic impacts to surface waters. See Table 1 for more details.

Table 1

Adjusted Average Optimal Buffer Width Key for HQ Waters (minimum width 100 feet)				
Slopes (%)				
Hydrologic Soil Group	0-5%	5-15%	15-25%	>25%
Ab	100	130	160	190
C	120	150	180	210
D	140	170	200	230

- **Streamside Management Zones (buffer areas for utility projects):** where disturbance and work cannot be avoided, utilize minimally disturbing & selective vegetative clearing methods, restorative planting (not seeding) for major near-stream clearings totaling 1 acre or more, no mulch placement within the streamside management zones, if possible allow small shrub growth
- **Enhanced Buffer Management:** including sheetflow of discharge beyond the minimum 100 foot vegetative buffer or implementing redundant mechanisms in dewatering exercises such as devices in manifold, use of chemical filtration aides, combining two practices such as filter bags with vegetated buffers and silt fencing. Also incorporation of super silt fencing or an equivalent practice when working near streams.
- **Enhanced Temporary Access Waterways Crossings:** including utilizing horizontal directional drilling/jack and bore for all major stream crossings or sensitive crossings, including a frac-out plan; preferential use of partial diversions (where possible); and utilization of temporary access bridges over fords.
- **Special Concern- pH and Water Quality:** For all activities related to in-stream grout placement, either in bags or as fill:
 1. To prevent impacts to in-stream pH, such operations should occur “in-the-dry”.
 2. An emergency treatment plan should be in place to address accidental material releases.
 3. Cure time allotted should reflect chemically stable grout material and should also represent the most conservative time in the expected cure range.
 4. The water quality standard numeric criteria for pH must be met in the ‘first flush’ before diversion is removed.
- **Stormwater Management:** follow the current guidelines within the Maryland Stormwater Design Manual (2009 Revised), including ESD to the MEP or other non-structural practices

8. Use of American Iron and Steel

None of the funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j-12) shall be used for a project for the construction, alteration, maintenance, or repair of a public drinking water system or water quality treatment works unless all of the iron and steel products used in the project are produced in the United States.

In this section, the term “iron and steel products” means the following products made primarily of iron or steel:

- Lined or unlined pipes and fittings
- Manhole covers and other municipal castings
- Hydrants
- Tanks
- Flanges
- Pipe clamps and restraints
- Valves
- Structural steel
- Reinforced precast concrete
- Construction materials

Certification Process:

The final manufacturer that delivers the iron or steel product to worksite, vendor, or contractor, may provide a certification asserting that all manufacturing processes occurred in the US. The certification should include the name of the manufacturer, the location of the manufacturing facility where the product or process took place (not its headquarters), a description of the product or item being delivered, and a signature by a responsible party.

Additional documentation such as Step Certification may be needed if the certification is lacking important information. A Step Certification is a process under which each handler (supplier, fabricator, manufacturer, processor, etc) of the iron and steel products certifies that their step in the process was domestically performed. Each time a step in the manufacturing process takes place, the manufacturer delivers its work along with a certification of its origin.

Waiver:

A request for waiver may be submitted to MDE under at least one of the following waiver categories:

- (1) Applying this provision would be inconsistent with the public interest;
- (2) Iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
- (3) Inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

MDE may agree with the waiver request and submit it to the Administrator of the Environmental Protection Agency for final approval. Alternatively, MDE may, in its sole discretion, reject the waiver request and elect not to fund the project.

De Minimis Nationwide Waiver:

A De Minimis Nationwide Waiver was issued by EPA, on April 15, 2014, allowing non-AIS miscellaneous, generally low-cost components that are essential for, but incidental to, the construction and are incorporated into the physical structure of the project. The total cost for these incidental components should not exceed 5% of the total cost of the materials used in and incorporated into a project.

To be covered under this waiver, the grant/loan recipient must, in consultation with the contractor, take the following actions:

1. Retain relevant documentation (i.e. invoices) as to those items being covered under this waiver in their project files.
2. Summarize in reports to MDE the types and/or categories of items to which this waiver is applied, including the cost of each category/type. The report must also include the total cost of items covered by the waiver, the total cost of all materials used in and incorporated into the project, and the percentage of covered incidental items calculated by cost.
3. Upon the receipt of the report, MDE, within 30 calendar day of receipt, will accept and file the report, request additional information, or advise the grant/loan recipient that the items cannot be covered under this waiver and a project specific waiver is needed.
4. If no comments are received by MDE within 30 calendar days, the grant/loan recipient would not need to take any further action, unless more incidental items need to be covered, at which time cumulative summary would need to be submitted to MDE.

Within seven (7) days of the bid opening, the apparent low bidder shall sign the form of “Assurances for Compliance with Federal Laws and Regulations” pertaining to non-discrimination in employment, debarment, anti-kickback, contract work hours and safety, compliance with prevailing Federal wage rates under the Davis-Bacon and related acts, and Maryland Antidegradation Implementation Procedures, and use of American iron and steel. The form is appended herewith in Section I.

**ASSURANCES FOR COMPLIANCE WITH FEDERAL LAWS AND REGULATIONS
FOR WATER QUALITY-TREATMENT WORKS AND DRINKING WATER PROJECT**

Project Name: _____ Contract No. (if applicable): _____

The contractor is required to comply with the following Federal laws and regulations:

1. Non-discrimination in Employment in accordance with Executive Order 11246 of September 24, 1965 entitled "Equal Employment Opportunity" as amended by Executive Order 11375 of October 13, 1967.
2. Debarment in accordance with the Executive Order 12549 and Executive Order 11246.
3. Anti-kickback in accordance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874).
4. Contract Work Hours and Safety Standards in accordance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330).
5. Compliance with Guidelines Contained in 40 CFR 247-254 (RCRA - Section 6002).
6. The prevailing Federal wage rates as determined by the U.S. Department of Labor under the Davis-Bacon and related acts. The prevailing wage determination category that should be used for this project is Heavy Construction (including water and sewer). Available at: <http://www.wdol.gov/>.

General Decision Number: _____ Date: _____

7. Maryland Antidegradation Implementation Procedures as promulgated in three regulations: COMAR 26.08.02.04 sets out the policy itself, COMAR 26.08.02.04-1, provides for identification and implementation of Tier II (high quality waters) of the antidegradation policy, and COMAR 26.08.02.04-2 that describes Tier III (Outstanding National Resource Waters or ONRW), the highest quality waters. No Tier III waters have been designated at this time.
8. Use of American Iron and Steel, as promulgated by H.R. 3547, "Consolidated Appropriations Act, 2014," Division G, Title IV, enacted on January 17, 2014.

I do solemnly declare and affirm that I am obligated to comply with the above Federal laws and regulations. It is understood that non-compliance with any one of the above Federal laws and regulations will be sufficient reason to cause termination of the contract.

Contractor

Signed by: _____
Authorized Officer

Date

Name (Print)

Title (Print)

**II. Maryland Department of the Environment
Maryland Water Quality & Drinking Water Revolving Loan Fund Programs
Disadvantaged Business Enterprise Program (DBE)
Guidance for Prime (Construction & A/E) Contractors**

The Maryland Water Quality and Drinking Water Revolving Loan Fund Programs (RLF) receive federal funds from the U.S. Environmental Protection Agency (EPA). The funds are used to provide low interest rate loans to finance water quality and drinking water capital projects. As a condition of federal grant awards, EPA regulations require that loan recipients and sub-recipients (i.e., prime contractors and subcontractors) make a good-faith effort to award a fair share of work to DBEs who are small business enterprises (SBE's), minority business enterprises (MBE's) and women's business enterprises (WBE's). A/E service consultants who receive loan funds are also considered as prime contractors and must comply with DBE requirements. Additionally, EPA's DBE rule requires loan recipients and sub-recipients to adhere to the terms and conditions in Appendix A attached hereto.

To ensure compliance with EPA DBE requirements, the MWQFA has developed guidance for both Loan Recipients and Prime Contractors (sub-recipients) to undertake certain good faith efforts to provide opportunities for DBE firms to participate in contracts. EPA regulations require evidence of the demonstration of the six good faith efforts in trying to achieve the DBE participation goals. MDE's negotiated DBE participation goals with EPA have been approved as of January 25, 2016 and are effective for three years through September 30, 2018. The goals below are not a quota and apply to DBE participation only.

<i>Procurement Category</i>	<i>MBE Goal (%)</i>	<i>WBE Goal (%)</i>
Construction	18	16
Equipment	20	15
Services	28	19
Supplies	20	15

Good Faith Efforts: The following good faith efforts apply to the procurement categories involving EPA financial assistance funds (See Appendix B: EPA Good Faith Efforts):

- Step 1:** Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities by placing qualified DBEs on solicitation lists whenever they are potential sources.
- Step 2:** Establishing delivery schedules, where the requirement permits to encourage participation by DBEs. The prime contractor should allow a 30-day minimum advertising period for bidding.
- Step 3:** Dividing total requirements, when economically feasible, into small tasks or quantities, to permit maximum participation of DBEs.
- Step 4:** Encourage contracting with a consortium of DBEs, when a contract is too large for one of these firms to handle individually.
- Step 5:** Using the services and assistance of the Maryland Department of Transportation (MDOT), the United States Small Business Administration (SBA) and the Minority Business Development Agency (MBDA) of the U.S. Department of Commerce (See Appendix C).
- Step 6:** Require each sub-contractor, if subcontracts are to be let, to take the steps 1- 5.

**Please submit all information to:
DBE Coordinator, MWQFA
1800 Washington Blvd., Baltimore MD 21230
Phone: 410-537-3146, FAX: 410-537-3968**

http://www.mde.state.md.us/programs/Water/QualityFinancing/MinorityandWomensBusinessEnterprises/Pages/Programs/WaterPrograms/Water_Quality_Finance/MWBE/index.aspx

Disadvantaged Business Enterprise Program (DBE)

Guidance for Prime (Construction & A/E) Contractors

Demonstration of the Six Good Faith Efforts. See **Appendices A & B** for additional bidding instructions and contract administrative provisions.

A: Prime contractors are required to undertake good faith efforts. Steps 1 & 5 can be attained by developing a bidders list of qualified DBE firms that can bid as sub-contractors. The prime contractors should advertise in minority, local and regional newspapers and obtain a bidders list from the loan recipient to supplement their list. The bidders list used during sub-contractor solicitation must be available throughout the project's construction period.

In developing bidders list of qualified DBE firms for participation as sub-contractors in construction, equipment, services, and supplies, the prime contractors should contact and gather information from different resources (See **Appendix C**) such as:

- Loan Recipient
- U.S. Small Business Administration (US-SBA)
- Minority Business Development Agency (MBDA) of the US Department of Commerce
- Maryland Department of Transportation (MDOT)

The DBE bidders lists may be classified with Standard Industrial Classification (SIC) or NAICS codes, should be updated periodically, and should be made available to sub-contractors to solicit additional sub-contractors, if necessary. **The prime contractor is required to keep the bidders list throughout the project's construction period.**

B: Prime contractors are also required to undertake good faith efforts. Steps 2, 3, & 4, can be utilized during the project planning, design and/or pre-bidding phase, to assure that qualified DBE firms have procurement opportunities in construction, equipment, services, and supplies.

To provide procurement opportunities to DBE firms, the Prime Contractor should undertake the following:

- Conduct pre-bid meetings to inform potential bidders/contractors about DBE requirements and provide guidance in undertaking the required good faith efforts.
- Use the bidders list developed in Item A (above) to solicit DBE firms as sub contractors.
- Invite DBE firms, where appropriate, to meetings, conferences, etc., to inform them of procurement opportunities and develop, where possible, reasonable contract and delivery schedules that encourage and facilitate participation by DBEs.
- Determine if a project can be broken down into smaller components/contracts to allow opportunity for DBE firms to bid as sub-contractors.
- For projects broken down into smaller components (e.g., painting, roofing, excavation, pipe laying, etc.) ensure that the delivery schedules are reasonable.
- Encourage DBE firms, where appropriate, to apply as a consortium, or as part of a consortium of DBEs, when a contract is too large for one of these firms to handle individually.

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard Suite 515 Baltimore MD 21230-1718
 410 537 3119 1-800-633-6101

http://www.mde.state.md.us/programs/Water/QualityFinancing/MinorityandWomensBusinessEnterprises/Pages/Programs/WaterPrograms/Water_Quality_Finance/MWBE/index.aspx

**Disadvantaged Business Enterprise (DBE) Good Faith Efforts Checklist
 To be completed by Prime (Construction & A/E) Contractor**

Project Name:

Procurement Category: Check box for all M/WBE procurement categories being reported under the above referenced project. **Construction** **Equipment** **Services** **Supplies**

For each procurement action, please answer the following questions

A: Develop Bidders List of DBE firms

- | | | | |
|----|--|------------------------------|-----------------------------|
| A1 | Did you develop a Bidders List of DBE firms? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| A2 | Did you advertise in minority, local, regional papers or Dodge Report? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| A3 | Did you send invitation for bids to DBE trade associations? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| A4 | Did you contact US-SBA/MBDA/MDOT? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| A5 | Did you receive Bidders List from Loan Recipient? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| A6 | Did you provide MDE with Bidders List? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

B: Smaller work components and delivery schedules

- | | | | |
|----|--|------------------------------|-----------------------------|
| B1 | Did DBE firms have opportunities to bid as subcontractors? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B2 | Did you break down the project, where economically feasible, into smaller components for DBE firms to bid as subcontractors? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B3 | Do project components have reasonable delivery schedules? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B4 | Did you allow a reasonable time for DBEs to bid? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| B5 | Did you encourage DBEs to bid as a consortium due to project size? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

C: Solicitation Summary of DBE firms (Prime Contractor must fill EPA Form 6100-4)

- | | | | |
|----|---|------------------------------|-----------------------------|
| C1 | Did you use the Bidders List to solicit subcontractors? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| C2 | Did DBE firms bid as subcontractors (provide list, work type, & price)? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| C3 | Did you select any DBE firms as subcontractor? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| C4 | Is the subcontractor using any additional subcontractors? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

Prime contractor must provide to loan recipient: (1) list of ALL subcontractors (DBE and non-DBE) with type of work and estimated dollar amounts; (2) completed EPA Form 6100-4; and, (3) completed EPA Form 6100-3 for each DBE subcontractor. Also, EPA Form 6100-2 to each DBE subcontractor.

Supporting Documentation

In support of the actions taken in items A, B, and C, (above), all prime contractors must attach this checklist along with supporting documentation for "Yes" answers and an explanation for "No" answers. Examples of supporting documentation include: (i) Bidders List of DBE firms; (ii) list of sub-contract work elements possible under the prime contract; (iii) proof of contact with DBE firms as potential sub contractors (copies of invitations for bids/RFP, contact letters, faxes and telephone call sheets, etc.; (iv) copies of all procurement advertisements; and, (v) list of all sub contractors that submitted bids/RFP.

 Prime Contractor's Name and Title

 Prime Contractor Official's Signature/ Date

Contact Phone # _____



OMB Control No: 2090-0030
 Approved: 8/13/2013
 Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
 DBE Subcontractor Utilization Form**

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractors² and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name		Project Name	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact	
Address			
Telephone No.		Email Address	
Issuing/Funding Entity:			

I have identified potential DBE certified subcontractors	<input type="radio"/> YES	<input checked="" type="radio"/> NO	
If yes, please complete the table below. If no, please explain:			
Subcontractor Name/ Company Name	Company Address/ Phone/ Email	Est. Dollar Amt	Currently DBE Certified?

Continue on back if needed

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

EPA FORM 6100-4 (DBE Subcontractor Utilization Form)



OMB Control No: 2090-0030
 Approved: 8/13/2013
 Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
 DBE Subcontractor Utilization Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.



OMB Control No: 2090-0030
 Approved: 8/13/2013
 Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
 DBE Subcontractor Performance Form**

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Subcontractor Name		Project Name	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact	
Address			
Telephone No.		Email Address	
Prime Contractor Name		Issuing/Funding Entity:	

Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies	Price of Work Submitted to the Prime Contractor
DBE Certified By: <input type="radio"/> DOT <input type="radio"/> SBA <input type="radio"/> Other: _____		Meets/ exceeds EPA certification standards? <input type="radio"/> YES <input type="radio"/> NO <input type="radio"/> Unknown

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



OMB Control No: 2090-0030
 Approved: 8/13/2013
 Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
 DBE Subcontractor Performance Form**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

Subcontractor Signature	Print Name
Title	Date

The public reporting and recordkeeping burden for this collection of information is estimated to average three (3) hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.



OMB Control No: 2090-0030
 Approved: 8/13/2013
 Approval Expires: 8/31/2015

**Disadvantaged Business Enterprise (DBE) Program
 DBE Subcontractor Participation Form**

An EPA Financial Assistance Agreement Recipient must require its prime contractors to provide this form to its DBE subcontractors. This form gives a DBE¹ subcontractor² the opportunity to describe work received and/or report any concerns regarding the EPA-funded project (e.g., in areas such as termination by prime contractor, late payments, etc.). The DBE subcontractor can, as an option, complete and submit this form to the EPA DBE Coordinator at any time during the project period of performance.

Subcontractor Name		Project Name	
Bid/ Proposal No.	Assistance Agreement ID No. (if known)	Point of Contact	
Address			
Telephone No.		Email Address	
Prime Contractor Name		Issuing/Funding Entity:	

Contract Item Number	Description of Work Received from the Prime Contractor Involving Construction, Services, Equipment or Supplies	Amount Received by Prime Contractor

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

EPA FORM 6100-2 (DBE Subcontractor Participation Form)

APPENDIX A: EPA DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

EPA's Disadvantaged Business Enterprise Program rule applies to contract procurement actions funded in part by EPA assistance agreements awarded after May 27, 2008. The rule is found at Federal regulation Title 40, Part 33. Specific responsibilities are highlighted below.

Loan Recipient Responsibilities:

- Include MDE's DBE guidance in each contract with a primary contractor, *MDE, October 2008*.
- Employ the six Good Faith Efforts during prime contractor procurement (§ 33.301).
- Require prime contractor to comply with the following prime contractor requirements of Title 40 Part 33:
 - a) To employ the six Good Faith Efforts steps in paragraphs (a) through (e) of § 33.301 if the prime contractor awards subcontracts (§ 33.301(f)).
 - b) To provide EPA form 6100-2 – *DBE Subcontractor Participation Form* to all DBE subcontractors (Optional submittal by subcontractors) (§ 33.302(e)).
 - c) To submit EPA forms 6100-3 – *DBE Program Subcontractor Performance Form* and 6100-4 – *DBE Program Subcontractor Utilization Form* with bid package or proposal. (§ 33.302 (f) and (g)).
 - d) To pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the recipient (§ 33.302(a)).
 - e) To notify recipient in writing by its prime contractor prior to any termination of a DBE subcontractor for convenience by the prime contractor (§ 33.302(b)).
 - f) To employ the six good faith efforts described in § 33.301 if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason. (§ 33.302(c)).
 - g) To employ the six good faith efforts described in § 33.301 even if the prime contractor has achieved its fair share objectives under subpart D of Part 33. (§33.302(d)).
 - h) Provide grant recipient DBE participation achievements with bid proposal
- Maintain records documenting its compliance with the requirements of Title 40 Part 33, including BIDDERS LIST and documentation of its, and its prime contractors', good faith efforts (§ 33.501(a)).

Prime Contractor Responsibilities:

- Employ the six Good Faith Efforts steps in paragraphs (a) through (e) of § 33.301 if the prime contractor awards subcontracts (§ 33.301(f)).

- Provide EPA form number 6100-2 – *DBE Program Subcontractor Participation Form* and form number 6100-3 – *DBE Program Subcontractor Performance Form* to each DBE subcontractor prior to opening of the contractor’s bid or proposal (§ 33.302(e) and (f)).
- Complete EPA form number 6100-4 – *DBE Program Subcontractor Utilization Form* (§ 33.302(g)).
- Submit to recipient with its bid package or proposal the completed EPA form number 6100-4, plus an EPA form number 6100-3 for each DBE subcontractor used in the contractor’s bid or proposal (§ 33.302(f) and (g)).
- Pay subcontractors for satisfactory performance no more than 30 days from the prime contractor’s receipt of payment from the recipient (§ 33.302(a)).
- Notify the recipient in writing prior to prime contractor termination of a DBE subcontractor for convenience (§ 33.302(b)).
- Employ the six good faith efforts described in § 33.301 if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason. (§ 33.302(c)).
- Employ the six good faith efforts described in § 33.301 even if the prime contractor has achieved its fair share objectives under subpart D of Part 33. (§33.302(d)).
- Provide loan recipient DBE participation achievements with bid proposal: (1) list of ALL subcontractors (DBE and non-DBE) with type of work and estimated dollar amounts; (2) completed EPA Form 6100-4; and (3) completed EPA Form 6100-3 for each DBE subcontractor.
- Maintain records documenting its compliance with the requirements of Title 40 Part 33, including BIDDERS LIST documentation of its, and its prime contractors’, good faith efforts (§ 33.501(a)).

Subcontractor Responsibilities:

- May submit EPA form 6100-2 – *DBE Subcontractor Participation Form* to Romona McQueen, EPA Region 3 DBE Coordinator (§ 33.302(e)).
- Must complete EPA form 6100-3 – *DBE Program Subcontractor Performance Form*, and submit it to the prime contractor soliciting services from the subcontractor prior to the opening of bids for the prime contract.

EPA Form	Requirement	Provided By	Completed By	Submitted To
EPA Form 6100-2	Loan Recipients required to have prime contractors provide form to Subcontractors	Prime Contractors	DBE Subcontractors (Optional)	EPA Region 3 DBE Coordinator Romona McQueen
EPA Form 6100-3	Loan Recipients required to have prime contractors provide form to Subcontractors	Prime Contractors	DBE Subcontractors with Prime Contractor’s Signature	Loan Recipients as part of a bid or proposal package
EPA Form 6100-4	Loan Recipients required to have prime contractors complete the form	Loan Recipients	Prime Contractors	Loan Recipients as part of a bid or proposal

Source: Federal Requirements and Contract Provisions for Special Appropriation Act Projects, US Environmental Protection Agency, Region III, June 2008

APPENDIX B: TITLE 40 PART 33 SUBPART C—GOOD FAITH EFFORTS**§ 33.102 When do the requirements of this part apply?**

The requirements of this part apply to procurement under EPA financial assistance agreements performed entirely within the United States, whether by a loan recipient or its prime contractor, for construction, equipment, services, and supplies.

§ 33.106 What assurances must EPA financial assistance recipients obtain from their contractors?

The recipient must ensure that each procurement contract it awards contains the term and condition specified in Appendix A to this part concerning compliance with the requirements of this part.

§ 33.206 Is there a list of certified MBEs and WBEs?

EPA OSDBU will maintain a list of certified MBEs and WBEs on EPA OSDBU's Home Page on the Internet. Any interested person may also obtain a copy of the list from EPA OSDBU. The Maryland Department of Transportation will also have a bidders list.

§ 33.301 What does this subpart require?

A recipient, including one exempted from applying the fair share objective requirements by § 33.411, is required to make the following good faith efforts whenever procuring construction, equipment, services and supplies under an EPA financial assistance agreement, even if it has achieved its fair share objectives under subpart D of this part:

- (a) Ensure DBEs are made aware of contracting opportunities fully practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
- (b) Make information on forthcoming opportunities available to DBEs, arrange periods for contracts, and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
- (c) Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
- (d) Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
- (e) Use the services and assistance of the SBA and the Minority Business Development Agency of the Department of Commerce.
- (f) If the prime contractor awards subcontracts, require the prime contractor to take the steps in paragraphs (a) through (e) of this section.

§ 33.302 Are there any additional contract administration requirements?

- (a) Loan recipient must require its prime contractor to pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the recipient.
- (b) Its prime contractor must notify loan recipient in writing prior to any termination of a DBE subcontractor for convenience by the prime contractor.
- (c) If a DBE subcontractor fails to complete work under the subcontract for any reason, the recipient must require the prime contractor to employ the six good faith efforts described in § 33.301 if soliciting a replacement subcontractor.
- (d) A recipient must require its prime contractor to employ the six good faith efforts described in § 33.301 even if the prime contractor has achieved its fair share objectives under subpart D of this part.
- (e) A recipient must require its prime contractor to provide EPA Form 6100-2—DBE Program Subcontractor Participation Form to all of its DBE subcontractors. EPA Form 6100-2 gives a DBE subcontractor the opportunity to describe the work the DBE subcontractor received from the prime contractor, how much the DBE subcontractor was paid and any other concerns the DBE subcontractor might have, for example reasons why the DBE subcontractor believes it was terminated by the prime contractor. DBE subcontractors may send completed copies of EPA Form 6100-2 directly to the appropriate EPA DBE Coordinator.
- (f) A recipient must require its prime contractor to have its DBE subcontractors complete EPA Form 6100-3—DBE Program Subcontractor Performance Form. A recipient must then require its prime contractor to include all completed forms as part of the prime contractor's bid or proposal package.
- (g) A recipient must require its prime contractor to complete and submit EPA Form 6100-4—DBE Program Subcontractor Utilization Form as part of the prime contractor's bid or proposal package.
- (h) Copies of EPA Form 6100-2—DBE Program Subcontractor Participation Form, EPA Form 6100-3—DBE Program Subcontractor Performance Form and EPA Form 6100-4—DBE Program Subcontractor Utilization Form may be obtained from EPA OSDBU's Home Page on the Internet or directly from EPA OSDBU.
- (i) A recipient must ensure that each procurement contract it awards contains the term and condition specified in the Appendix A concerning compliance with the requirements of this part. A recipient must also ensure that this term and condition is included in each procurement contract awarded by an entity receiving an identified loan under a financial assistance agreement to capitalize a revolving loan fund.

§ 33.410 Can a recipient be penalized for failing to meet its fair share objectives?

A recipient cannot be penalized, or treated by EPA as being in noncompliance with this subpart, solely because its MBE or WBE participation does not meet its applicable fair share objective. However, EPA may take remedial action under § 33.105 for a recipient's failure to comply with other provisions of this part, including, but not limited to, the good faith efforts requirements described in subpart C of this part.

Source: Federal Requirements and Contract Provisions for Special Appropriation Act Projects, US Environmental Protection Agency, Region III, June 2008

**APPENDIX C: RESOURCE LISTING AND CONTACT INFORMATION
FOR UTILIZATION OF MINORITY AND WOMEN’S BUSINESS ENTERPRISES**

Resource Listing	Contact	Website if applicable
<p>State of Maryland Governor’s Office of Minority Affairs The mission of the Governor's Office of Minority Affairs (GOMA) is facilitating minority business enterprise activities through coordinating and promoting government programs aimed at strengthening and preserving the state’s minority and women owned businesses.</p>	<p>Governor's Office of Minority Affairs Suite 1502 6 Saint Paul Street Baltimore MD 21202 767-8232 1-(877) 558-0998 f-(410) 333-7568 info@mdminoritybusiness.com</p>	<p>http://www.oma.state.md.us/</p>
<p>U.S. Small Business Administration (SBA) In addition to the national office, the SBA has local district and regional offices to assist small businesses in contracting with the public and private sector.</p>	<p>Website</p>	<p>www.sba.gov/category/navigation-structure/contracting/working-with-government</p>
<p>CCR/Pro-Net is an extensive database that combines the SBA’s Pro-Net database and the DOD’s Central Contractor Registration database of small businesses.</p>	<p>CCR Assistance Center 888-227-2423 269-961-5757 DSN: 661-5757</p>	<p>www.ccr.gov/ Select “Dynamic Small Business</p>
<p>U. S. Small Business Administration (SBA) - MD. District Office</p>	<p>City Crescent Bld. 6th Floor 10 South Howard St. Baltimore MD 21201 Phone: 410 962-6195</p>	<p>www.sba.gov/tools/local-assistance/districtoffices</p>
<p>Minority Business Development Administration (MBDA): The MBDA is an agency within the U.S. Dept. of Commerce, created to foster the development and growth of minority businesses in the U.S. and coordinates resources in the public and private sectors to help MBE’s. Recipients and bidders should contact the centers and provide notices of contracting opportunities. Also, see the Phoenix database, which matches minority companies with business opportunities.</p>	<p>1401 Constitution Ave NW Washington, D.C. 20230 Email: support@mbda.gov 1.888.324.1551</p>	<p>www.mbda.gov/</p>
<p>Standard Industrial Classification Codes (SIC) or North American Industry Classification System (NAICS) codes visit the website.</p>	<p>Website</p>	<p>www.sba.gov/content/north-american-industry-classification-system-codes-and-small-business-size-standards</p>
<p>Maryland Department of Transportation (MDOT) and the Minority/Disadvantaged Business Enterprise (MDOT – MBE/DBE). Loan recipients and bidders may locate qualified M/WBE’s through the MBE/WBE Directory.</p>	<p>Office Address 7201 Corporate Drive Hanover, MD 21076 Or</p>	<p>www.mdot.maryland.gov/Office %20of%20Minority%20Business %20Enterprise/HomePage.html http://mbe.mdot.state.md.us/dir</p>

	Mailing Address: P.O. Box 548 Hanover, MD 21076	ectory/ Click on “Proceed to Directory. Select any combination of the fields to identify M/WBE’s for the specific project opportunities.
U.S. EPA Office of Small, Disadvantaged Business Utilization (OSDBU) – OSDBU’s mission includes “fostering opportunities for partnerships, contracts, subagreements, and grants for small and socioeconomically disadvantaged concerns”. One of the resources to assist prime contractors is a listing of small and disadvantaged businesses (a vendor profile system) registered with OSDBU.	US.EPA Office of Small Programs 1200 Pennsylvania Avenue NW Mail Code 1230T Washington, D.C. 20460	http://cfpub.epa.gov/sbvps/ http://www.epa.gov/osdbu/ Select “search the OSDBU Registry” Click on the search criteria of interest (ethnicity, size, SIC, etc.)
National Black Chamber of Commerce	1350 Connecticut Ave. N.W. Suite 405 Washington D.C. 20036 Phone: 202 466-6888 Fax: 202 466-4918	www.nationalbcc.org Email: info@nationalbcc.org
Virginia Hispanic Chamber of Commerce (Northern Va.)	8300 Boone Blvd., 4 TH Floor Vienna, VA 22182 Phone: 804.378.4099 Fax: 703 893-1269	www.vahcc.com
U.S. Hispanic Chamber of Commerce	2175 K Street NW Suite 100 Washington, D.C. 20037	www.usbcc.com
National Association of Minority Contractors (NAMC)	666 11 Street N.W. Suite 520 Washington D.C. 20001 Phone: 202 347-8250	www.namcnational.org/
Maryland/Washington Minority Contractors (MWMCA)	1107 North Point Blvd, Suite 227 Baltimore, MD 21224 410.282.6101 410.282.6102 –fax	www.mwmca.org
National Association of Women’s Business Owners (NAWBO) – National	1760 Old Meadow Rd. Ste 500 McLean VA 22102 Phone: 800.556.NAWBO 703.506.3268 703.506.3266-fax	www.nawbo.org

NAWBO Baltimore Regional Chapter	4404 Silverbrook Lane, Suite E-204 Owings Mills MD 21117 Phone: 410 876-0502 410.654.9734-fax	www.nawbomaryland.org Email: info@nawbomaryland.org
NAWBO Delaware Chapter	P.O. Box 4657 Greenville Station Greenville, DE 19807-4657 Phone: 302 355.9945	www.nawbodelaware.org Email: info@nawbodelaware.org
MD/DC Minority Supplier Development Council (MSDC)	10770 Columbia Pike Lower Level, Suite L100 Silver Spring MD 20901 Phone: 301 592-6710 Fax: 301 592-6704	http://mddccouncil.org/
National Minority Supplier Development Council, Inc. (NMSDC)	1040 Avenue of the Americas, 2 nd Floor New York, New York 10018 Phone: 212 944-2430 212.719.9611-fax	www.nmsdcus.org/
UIDA Business Services is a Native American Procurement and Technical Assistance Center-maintains a comprehensive database of Native American owned firms	86 South Cobb Drive, MZ:0510 Marietta, GA 30063-0510 Phone, 770 494-0431 770.494.1236-fax or <u>Northeast Region</u> 2340 Dulles Corner Blvd Mail Stop: 1n01 Herndon, VA 20171 Phone: 703.561.3120 703.561.3124-fax	
Diversity Business (A multi-cultural online resource)	200 Pequot Avenue Southport, CT 06890 Phone 203.255.8966 203.255.8501-fax	www.diversitybusiness.com/
National Association of Women in Construction	327 S. Adams Street Fort Worth, TX 76104 Phone: 1-800-552-3506 Phone: 817.877.5551 817.877.0324-fax	www.nawic.org/

III. PRESIDENTIAL DOCUMENTS

PRESIDENTIAL EXECUTIVE ORDER 13202 OF FEBRUARY 17, 2001 and PRESIDENTIAL EXECUTIVE ORDER 13208 OF APRIL 8, 2001 are appended as Attachment II.

IV SEVERABILITY

In the event any provision of the within and foregoing Requirement, including any attachment thereto, shall be held illegal, invalid, unconstitutional or unenforceable by any court of competent jurisdiction, such holding shall not invalidate, render unenforceable or otherwise affect any other provision hereof.

V. PROJECT SIGN

The prime contractor shall provide and erect a sign at a prominent location at each construction site. The owner shall approve the site for the sign erection. The sign shall be prepared in accordance with detailed instructions to be provided by Maryland Department of the Environment (MDE).

It shall be the responsibility of the contractor to protect and maintain the sign in good conditions throughout the life of the project.

Attachment II

Presidential Documents

Executive Order 13202 of February 17, 2001

Preservation of Open Competition and Government Neutrality Towards Government Contractors' Labor Relations on Federal and Federally Funded Construction Projects

By the authority vested in me as President by the Constitution and laws of the United States of America, including the Federal Property and Administrative Services Act, 40 U.S.C. 471 *et seq.*, and in order to (1) promote and ensure open competition on Federal and federally funded or assisted construction projects; (2) maintain Government neutrality towards Government contractors' labor relations on Federal and federally funded or assisted construction projects; (3) reduce construction costs to the Federal Government and to the taxpayers; (4) expand job opportunities, especially for small and disadvantaged businesses; and (5) prevent discrimination against Government contractors or their employees based upon labor affiliation or lack thereof; thereby promoting the economical, nondiscriminatory, and efficient administration and completion of Federal and federally funded or assisted construction projects, it is hereby ordered that:

Section 1. To the extent permitted by law, any executive agency awarding any construction contract after the date of this order, or obligating funds pursuant to such a contract, shall ensure that neither the awarding Government authority nor any construction manager acting on behalf of the Government shall, in its bid specifications, project agreements, or other controlling documents:

(a) Require or prohibit bidders, offerors, contractors, or subcontractors to enter into or adhere to agreements with one or more labor organizations, on the same or other related construction project(s); or

(b) Otherwise discriminate against bidders, offerors, contractors, or subcontractors for becoming or refusing to become or remain signatories or otherwise to adhere to agreements with one or more labor organizations, on the same or other related construction project(s).

(c) Nothing in this section shall prohibit contractors or subcontractors from voluntarily entering into agreements described in subsection (a).

Sec. 2. Contracts awarded before the date of this order, and subcontracts awarded pursuant to such contracts, whenever awarded, shall not be governed by this order.

Sec. 3. To the extent permitted by law, any executive agency issuing grants, providing financial assistance, or entering into cooperative agreements for construction projects, shall ensure that neither the bid specifications, project agreements, nor other controlling documents for construction contracts awarded after the date of this order by recipients of grants or financial assistance or by parties to cooperative agreements, nor those of any construction manager acting on their behalf, shall contain any of the requirements or prohibitions set forth in section 1(a) or (b) of this order.

Sec. 4. In the event that an awarding authority, a recipient of grants or financial assistance, a party to a cooperative agreement, or a construction manager acting on behalf of the foregoing, performs in a manner contrary to the provisions of sections 1 or 3 of this order, the executive agency awarding the contract, grant, or assistance shall take such action, consistent with law and regulation, as the agency determines may be appropriate.

Sec. 5. (a) The head of an executive agency may exempt a particular project, contract, subcontract, grant, or cooperative agreement from the requirements of any or all of the provisions of sections 1 and 3 of this order, if the agency head finds that special circumstances require an exemption in order to avert an imminent threat to public health or safety or to serve the national security.

(b) A finding of "special circumstances" under section 5(a) may not be based on the possibility or presence of a labor dispute concerning the use of contractors or subcontractors who are nonsignatories to, or otherwise do not adhere to, agreements with one or more labor organizations, or concerning employees on the project who are not members of or affiliated with a labor organization.

Sec. 6. (a) The term "construction contract" as used in this order means any contract for the construction, rehabilitation, alteration, conversion, extension, or repair of buildings, highways, or other improvements to real property.

(b) The term "executive agency" as used in this order shall have the same meaning it has in 5 U.S.C. 105, excluding the General Accounting Office.

(c) The term "labor organization" as used in this order shall have the same meaning it has in 42 U.S.C. 2000e(d).

Sec. 7. With respect to Federal contracts, within 60 days of the issuance of this order, the Federal Acquisition Regulatory Council shall take whatever action is required to amend the Federal Acquisition Regulation in order to implement the provisions of this order.

Sec. 8. As it relates to project agreements, Executive Order 12836 of February 1, 1993, which, among other things, revoked Executive Order 12818 of October 23, 1992, is revoked.

Sec. 9. The Presidential Memorandum of June 5, 1997, entitled "Use of Project Labor Agreements for Federal Construction Projects" (the "Memorandum"), is also revoked.

Sec. 10. The heads of executive departments and agencies shall revoke expeditiously any orders, rules, regulations, guidelines, or policies implementing or enforcing the Memorandum or Executive Order 12836 of February 1, 1993, as it relates to project agreements, to the extent consistent with law.

Sec. 11. This order is intended only to improve the internal management of the executive branch and is not intended to, nor does it, create any right to administrative or judicial review, or any right, whether substantive or procedural, enforceable by any party against the United States, its agencies or instrumentalities, its officers or employees, or any other person.



THE WHITE HOUSE,
February 17, 2001

Federal Register

Vol. 66, No. 70

Wednesday, April 11, 2001

Presidential Documents**Title 3—****Executive Order 13208 of April 8, 2001****The President****Amendment to Executive Order 13202, Preservation of Open Competition and Government Neutrality Towards Government Contractors' Labor Relations on Federal and Federally Funded Construction Projects**

By the authority vested in me as President by the Constitution and the laws of the United States of America, including the Federal Property and Administrative Services Act, 40 U.S.C. 471 *et seq.*, and in order to (1) promote and ensure open competition on Federal and federally funded or assisted construction projects; (2) maintain Government neutrality towards Government contractors' labor relations on Federal and federally funded or assisted construction projects; (3) reduce construction costs to the Federal Government and to the tax payers; (4) expand job opportunities, especially for small and disadvantaged businesses; (5) prevent discrimination against Government contractors or their employees based upon labor affiliation or lack thereof; and (6) prevent the inefficiency that may result from the disruption of a previously established contractual relationship in particular cases; thereby promoting the economical, nondiscriminatory, and efficient administration and completion of Federal and federally funded or assisted construction projects, it is hereby ordered that Executive Order 13202 of February 17, 2001, is amended by adding to section 5 of that order the following new subsection:

- (c) The head of an executive agency, upon application of an awarding authority, a recipient of grants or financial assistance, a party to a cooperative agreement, or a construction manager acting on behalf of the foregoing, may exempt a particular project from the requirements of any or all of the provisions of sections 1 and 3 of this order, if the agency head finds: (i) that the awarding authority, recipient of grants or financial assistance, party to a cooperative agreement, or construction manager acting on behalf of the foregoing had issued or was a party to, as of the date of this order, bid specifications, project agreements, agreements with one or more labor organizations, or other controlling documents with respect to that particular project, which contained any of the requirements or prohibitions set forth in sections 1(a) or (b) of this order; and (ii) that one or more construction contracts subject to such requirements or prohibitions had been awarded as of the date of this order.



THE WHITE HOUSE,
April 6, 2001.

[FR Doc. 01-9086
Filed 4-10-01; 8:45 am]
Billing code 3195-01-P

THE CONSTRUCTION SITE SIGN FOR PROJECTS FINANCIALLY SUPPORTED BY STATE REVOLVING LOAN FUNDS AND OTHER FUND SOURCES

White Background Light Blue Scroll Black Letters

PROJECT TITLE
Project Type (by MDE)

A PROJECT FINANCIALLY SUPPORTED BY THE
STATE OF MARYLAND AND
U.S. ENVIRONMENTAL PROTECTION AGENCY

UNDER THE DIRECTION
OF THE



Maryland
Department of
the Environment

APPROVED BY THE
MARYLAND BOARD
OF PUBLIC WORKS



Larry Hogan, Governor
Peter V.R. Franchot, Comptroller
Nancy K. Kopp, Treasurer

Total Project Cost: _____
State Loan: _____
State Grant: _____
Federal Funds: _____
Other Funds: _____
Local Funds: _____

4' 8'

PROJECT SIGN

Project Type:

Insert the selected item under the project title:

- Green Infrastructure Project - Constructing environmentally beneficial “green” infrastructure
- Wetlands - Creating wetlands to improve water quality and create wildlife habitat
- Stream restoration - Restoring streams to improve water quality and create wildlife habitat
- Living shorelines - Turning shorelines into living habitats to improve water quality and to reduce erosion and flooding
- Septic connections - Connecting homes to public sewer to eliminate failing septic systems, improve water quality, and protect public health
- Drinking water extension - Connecting homes to public water supply to improve drinking water quality
- Stormwater project - Reducing stormwater runoff to improve water quality, protect public health, and reduce flooding
- CSOs, Sewer project - Preventing sewer overflows to improve water quality and protect public health
- ENR - Reducing pollution to improve Maryland waterways and the Chesapeake Bay and to protect public health

VI. FEDERAL WAGE RATE REQUIREMENTS UNDER THE DAVIS-BACON AND RELATED ACTS

Preamble

With respect to the Clean Water and Safe Drinking Water State Revolving Funds, EPA provides capitalization grants to each State which in turn provides subgrants or loans to eligible entities within the State. Typically, the subrecipients are municipal or other local governmental entities that manage the funds. For these types of recipients, the provisions set forth under Roman Numeral I, below, shall apply. Although EPA and the State remain responsible for ensuring subrecipients' compliance with the wage rate requirements set forth herein, those subrecipients shall have the primary responsibility to maintain payroll records as described in Section 3(ii)(A), below and for compliance as described in Section I-5.

Occasionally, the subrecipient may be a private for profit or not for profit entity. For these types of recipients, the provisions set forth in Roman Numeral II, below, shall apply. Although EPA and the State remain responsible for ensuring subrecipients' compliance with the wage rate requirements set forth herein, those subrecipients shall have the primary responsibility to maintain payroll records as described in Section II-3(ii)(A), below and for compliance as described in Section II-5.

I. Requirements For Subrecipients That Are Governmental Entities:

The following terms and conditions specify how recipients will assist EPA in meeting its Davis-Bacon (DB) responsibilities when DB applies to EPA awards of financial assistance with respect to State recipients and subrecipients that are governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient. If a State recipient needs guidance, the recipient may contact Lorraine Fleury, EPA Region III, at 215-814-2341 or at fleury.lorraine@epa.gov for guidance. The recipient or subrecipient may also obtain additional guidance from DOL's web site at <http://www.dol.gov/whd/>

1. Applicability of the Davis- Bacon (DB) prevailing wage requirements.

DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a subrecipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the subrecipient must discuss the situation with the recipient State before authorizing work on that site.

2. Obtaining Wage Determinations.

(a) Subrecipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

- (i) While the solicitation remains open, the subrecipient shall monitor www.wdol.gov weekly to ensure that the wage determination contained in the solicitation remains current. The subrecipients shall amend the solicitation if DOL issues a modification more than 10 days

prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the subrecipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the subrecipient.

- (ii) If the subrecipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the subrecipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The subrecipient shall monitor www.wdol.gov on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate DOL wage determination from www.wdol.gov into the ordering instrument.

(c) Subrecipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the subrecipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The subrecipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such

laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Subrecipients may obtain wage determinations from the U.S. Department of Labor's web site, www.dol.gov.

(ii)(A) The subrecipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient (s) to the State award official. The State award official will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be

sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The subrecipient(s), shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the

ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5(a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5(a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State,

EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees--

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of

the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Subrecipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of \$100,000.

(a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The subrecipient, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (a)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Subrecipient shall insert

in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the EPA and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

- (a) The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.
- (b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the contractor or subcontractor is not complying with DB. Subrecipients shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.
- (c) The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The subrecipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable, the subrecipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Subrecipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the subrecipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.
- (d) The subrecipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.
- (e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/whd/america2.htm>.

II. Requirements For Subrecipients That Are Not Governmental Entities

The following terms and conditions specify how recipients will assist EPA in meeting its DB responsibilities when DB applies to EPA awards of financial assistance with respect to State recipients and subrecipients that are not governmental entities. If a subrecipient has questions regarding when DB

applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient. If a State recipient needs guidance, the recipient may contact Lorraine Fleury, EPA Region III, at 215-814-2341 or at fleury.lorraine@epa.gov for guidance. The recipient or subrecipient may also obtain additional guidance from DOL's web site at <http://www.dol.gov/whd/>

Under these terms and conditions, the subrecipient must submit its proposed DB wage determinations to the State recipient for approval prior to including the wage determination in any solicitation, contract task orders, work assignments, or similar instruments to existing contractors.

1. Applicability of the Davis- Bacon (DB) prevailing wage requirements.

DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a subrecipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the subrecipient must discuss the situation with the recipient State before authorizing work on that site.

2. Obtaining Wage Determinations.

(a) Subrecipients must obtain proposed wage determinations for specific localities at www.wdol.gov. After the Subrecipient obtains its proposed wage determination, it must submit the wage determination to the State recipient DB point of contact for wage determinations for approval prior to inserting the wage determination into a solicitation, contract or issuing task orders, work assignments or similar instruments to existing contractors (ordering instruments unless subsequently directed otherwise by the State recipient Award Official.

(b) Subrecipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

- (i) While the solicitation remains open, the subrecipient shall monitor www.wdol.gov on a weekly basis to ensure that the wage determination contained in the solicitation remains current. The subrecipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the subrecipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the subrecipient.
- (ii) If the subrecipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the subrecipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The subrecipient shall monitor www.wdol.gov on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(c) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate DOL wage determination from www.wdol.gov into the ordering instrument.

(c) Subrecipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the subrecipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The subrecipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional

classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Subrecipients may obtain wage determinations from the U.S. Department of Labor's web site, www.dol.gov.

(ii)(A) The subrecipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient(s) to the State award official. The State award official will transmit the report, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request, and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The subrecipient(s) shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The

required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees--

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide

apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may by appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Subrecipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of \$100,000.

(a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of

forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The subrecipient shall upon the request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (a)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Subrecipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the EPA and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

(a). The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the contractor or subcontractor is not complying with DB. Subrecipients shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(c). The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The subrecipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable the subrecipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Subrecipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB . In addition, during the examinations the subrecipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

(d). The subrecipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/whd/america2.htm>.

General Decision Number: MD160042 01/08/2016 MD42

Superseded General Decision Number: MD20150042

State: Maryland

Construction Type: Heavy Sewer and Water Line

County: Queen Anne's County in Maryland.

SEWER & WATER LINE CONSTRUCTION

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

Modification Number Publication Date
 0 01/08/2016

SUMD2010-059 01/01/1993

	Rates	Fringes
Laborers:		
Laborers.....	\$ 7.37	
Pipelayers.....	\$ 9.73	1.03
Power equipment operators:		
Backhoes.....	\$ 13.12	2.21
Loaders.....	\$ 11.22	1.28
TRUCK DRIVER.....	\$ 8.97	.44

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

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Unlisted classifications needed for work not included within

the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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

Union Rate Identifiers

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

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

Survey Rate Identifiers

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

date for the classifications and rates under that identifier.

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor

200 Constitution Avenue, N.W.
Washington, DC 20210

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

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

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

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

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

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

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END OF GENERAL DECISION

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CONTRACT FORMS

CONTRACT NO. SAN 16-01

00530	Agreement
00610	Performance Bond
00620	Payment Bond
00630	Maintenance Bond
00650	Equipment Warranty and Certification Form
00690	Application for Payment Affidavit

QUEEN ANNE'S COUNTY, MD
SOUTHERN KENT ISLAND SANITARY PROJECT
SEPTIC TANK EFFLUENT PUMP INSTALLATION

AGREEMENT

THIS AGREEMENT, is entered into this _____ day of _____, 20__ by and between the County Commissioners of Queen Anne's County, Maryland, hereinafter called OWNER, and a Corporation known as _____ organized and existing under the laws of the State of _____ hereinafter called CONTRACTOR.

WITNESSETH, that OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

Article 1. WORK

CONTRACTOR shall complete all Work as specified and indicated in the Contract Documents for Contract No. SAN 16-01, entitled Southern Kent Island Sanitary Project – Septic Tank Effluent Pumps – Phase 1.

Article 2. ENGINEER

Earth Data, Inc. is hereinafter called ENGINEER and will assume all duties and responsibilities and will have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion, inspection and review of the Work and other duties and responsibilities of the ENGINEER in accordance with the Contract Documents.

Article 3. CONTRACT TIME

- 3.1 The Work will be substantially complete in accordance with paragraph 14.8 of the General Conditions within 1460 consecutive calendar days after the date indicated in the Notice to Proceed. CONTRACTOR's attention is directed to Supplemental Condition Article 1.01 in regards to wet-season excavation restrictions. The above Contract Time includes these periods of restriction.
- 3.2 The Work will be completed and ready for final payment in accordance with paragraph 14.13 of the General Conditions within 1580 consecutive calendar days after the date indicated in the Notice to Proceed.
- 3.3 Liquidated Damages: It is acknowledged that the CONTRACTOR's failure to achieve substantial completion of the Work within the Contract Time provided by the Contract Documents will cause the OWNER to incur substantial economic damages and losses of types and in amounts which are impossible to compute and ascertain with certainty as a basis for recovery by the OWNER of actual damages, and that liquidated damages represent a fair, reasonable and appropriate estimate thereof. Accordingly, in lieu of actual damages for such delay, the CONTRACTOR agrees that liquidated damages may be assessed and recovered by the OWNER

QUEEN ANNE'S COUNTY, MD
SOUTHERN KENT ISLAND SANITARY PROJECT
SEPTIC TANK EFFLUENT PUMP INSTALLATION

as against the CONTRACTOR and its Surety. In the event of delayed completion and without the OWNER being required to present any evidence of the amount or character of actual damages sustained by reason thereof; therefore CONTRACTOR shall be liable to the OWNER for payment of liquidated damages in the amount of **One Thousand Dollars (\$1000.00)** for each day that Substantial Completion is delayed beyond the Contract Time as adjusted for the time extensions provided by the Contract Documents. Such liquidated damages are intended to represent estimated actual damages and are not intended as a penalty, and CONTRACTOR shall pay them to OWNER without limiting OWNER's right to terminate this Agreement for default as provided elsewhere herein.

Article 4. CONTRACT PRICE

OWNER shall pay CONTRACTOR for performance of the Work in accordance with the Contract Documents in lawful money of the United States of America the sum of \$_____ in accordance with CONTRACTOR'S Unit Price Bid.

Article 5. PAYMENT

CONTRACTOR shall submit monthly applications for Payment in accordance with Article 14 of the General Conditions. A retainage equal to 5% of the value of the work completed shall be withheld until the final application for payment. Final payment shall not be made until the submission, review & acceptance of as-builts. CONTRACTOR acknowledges the potential penalty for unacceptable efforts in providing as-builts in a timely fashion as detailed in the General Condition 6.19.4.

Article 6. INTEREST

All moneys not paid when due hereunder shall bear interest at the rate of 6% per annum.

Article 7. GUARANTEE PERIOD

CONTRACTOR shall warrant and guarantee his Work, materials and equipment in accordance with Article 13 of the General Conditions for a period of one year from the date as detailed in the definitions section of the General Conditions. The CONTRACTOR shall provide a maintenance bond at 5% of the contract price for the first year. Bond shall be placed prior to release of retainage.

Article 8. CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

8.1 CONTRACTOR has familiarized himself with the nature and extent of the Contract Documents, Work, locality, and with all local conditions and federal, state and local

QUEEN ANNE'S COUNTY, MD
SOUTHERN KENT ISLAND SANITARY PROJECT
SEPTIC TANK EFFLUENT PUMP INSTALLATION

laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the Work, including the applicability of federal, state or local taxes including sales or use tax and assumes full responsibility for the payment of same.

- 8.2 CONTRACTOR acknowledges that additional site plans are being developed, and will continue to be developed during the construction period, and such additional sites will be part of the Work; and CONTRACTOR has familiarized themselves with the conditions of every site, including those sites still under development, and will not submit a claim simply on the basis of not having these site plans available for review prior to submitting a bid.
- 8.3 CONTRACTOR further covenants and warrants that he has had sufficient time to examine the site of the Work; that he has examined the site of the Work; and that he has based the within contract prices on his own independent examination and investigation of the site, subsurface materials and conditions, and has not relied on any subsurface information or existing underground utility information furnished to him by OWNER or ENGINEER.
- 8.4 CONTRACTOR has correlated the results of such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.
- 8.5 CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.
- 8.6 CONTRACTOR acknowledges the potential penalty for lack-of-restoration efforts as detailed in the Supplemental Conditions - Minimization of Homeowner Inconvenience – Section 2.03.

Article 9. CONTRACT DOCUMENTS

The Contract Documents, which comprise the entire agreement between OWNER and CONTRACTOR, are incorporated to this Agreement by reference, made a part hereof and consist of the following:

- 9.1 This Agreement
- 9.2 Project Manual entitled “**Contract 16-01 - Southern Kent Island Sanitary Project – Septic Tank Effluent Pumps – Phase 1**”, dated **May 2, 2016**, including all provisions within.
- 9.3 All applicable portions of the “Requirements and Contract Provisions for the Treatment Works Projects Financed through the Maryland Water Quality Revolving

QUEEN ANNE'S COUNTY, MD
SOUTHERN KENT ISLAND SANITARY PROJECT
SEPTIC TANK EFFLUENT PUMP INSTALLATION

Loan Fund and the Maryland Drinking Water Revolving Loan Fund – Department of the Environment – State of Maryland” dated February 2016, which are contained within the Project Manual.

- 9.4 Drawings consisting of plans entitled “**Southern Kent Island Sanitary Project – Septic Tank Effluent Pumps – Phase 1**”, dated **April 2016**, prepared by **Earth Data, Inc.**
- 9.5 Addenda numbers ___ through ___, inclusive.
- 9.6 CONTRACTOR's Bid.
- 9.7 Documentation submitted by CONTRACTOR prior to Notice of Award.
- 9.8 Any Change Orders, duly delivered after execution of Agreement.
- 9.9 Payment, Performance, and Maintenance Sureties.
- 9.10 Maryland Department of the Environment Construction Permit

There are no Contract Documents other than those listed above in this Article 9. The Contract Documents may only be altered, amended or repealed by a Change Order.

Article 10. MISCELLANEOUS

- 10.1 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law); and, unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.
- 10.2 OWNER and CONTRACTOR each binds himself, his partners, successors, assigns and legal representatives to the other party hereto, his partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

Article 11. OTHER PROVISIONS

- 11.1 CONTRACTOR agrees that he, and his Subcontractors, will pay each person engaged in the Work of this Agreement not less than the minimum wage determination for the applicable described class of work, in accordance with law, as specified by the State of Maryland or the United States Government, under any

QUEEN ANNE'S COUNTY, MD
SOUTHERN KENT ISLAND SANITARY PROJECT
SEPTIC TANK EFFLUENT PUMP INSTALLATION

Maryland or federal law which is made applicable to the Project, by the terms of the Contract Documents or addenda thereto.

- 11.2 To the fullest extent permitted by law, the CONTRACTOR shall indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting there from, and (2) is caused in whole or in part by any negligent act or omission of the CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity, which would otherwise exist as to any party or person, described in this Paragraph 11.2.
- 11.3 In any and all claims against the OWNER or the ENGINEER or any of their agents or employees by any employee of the CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 11.2 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any Subcontractor under worker's or workmen's compensation acts, disability benefit acts or other employee benefit acts.

IN WITNESS WHEREOF, the parties hereto have signed four (4) copies of this Agreement. One duplicate original each has been delivered to OWNER, CONTRACTOR and ENGINEER. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or by ENGINEER on their behalf.

This Agreement will be effective on _____, 2016.

OWNER: The County Commissioners of
Queen Anne's County, MD

CONTRACTOR: _____

_____/s/
Todd R. Mohn, Director Public Works

_____/s/
Name, Title

Attest:

Attest:

_____/s/
Treasurer

_____/s/

QUEEN ANNE'S COUNTY, MD
SOUTHERN KENT ISLAND SANITARY PROJECT
SEPTIC TANK EFFLUENT PUMP INSTALLATION

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That We, _____ as
Principal, and _____ a corporation
organized and existing under the laws of the State of Maryland and authorized to do
business in the State of Maryland, as Surety, are held and firmly bound unto the County
Commissioners of Queen Anne's County, Maryland, as Obligee, in the full and just sum of
_____ Dollars (\$_____)

(100% of the Contract Price) lawful money of the United States of America, for the
payment of which sum, well and truly be made, we bind ourselves, our heirs, executors,
administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION are such that

WHEREAS, the Principal contemplates entering into a certain Contract with the Obligee
for construction of Contract No. SAN 16-01, "**Southern Kent Island Sanitary Project –
Septic Tank Effluent Pumps – Phase 1**", with a Project Manual dated **May 2, 2016**,
pursuant to drawings, specifications and other related documents, constituting the
Contract Documents, which are incorporated into the Agreement by reference, and

NOW, THEREFORE, if the Principal and Obligee shall enter into an Agreement with
respect to performance of such work, and if the Principal shall well, truly and faithfully
perform its duties, all the undertakings, covenants, terms, and conditions of the Agreement
and the Contract Documents during the original term thereof, and any extensions thereof,
then this obligation shall be void; otherwise to remain in full force and effect.

The obligation of the Surety hereunder shall extend to all obligations of the Principal in
connection with warranty and/or maintenance obligations of the Principal which survive the
completion of the work.

PROVIDED, FURTHER, that the said Surety, for value received hereby agrees that no
change, extension of time, alteration or addition to the terms of the Contract or to the work
to be performed thereunder or the specifications accompanying the same shall in any way
affect the obligation of the Surety on this Bond, and the Surety does hereby waive notice
of any such change, extension of time, alteration or addition to the terms of the Contract or
to the work or to the specifications.

QUEEN ANNE'S COUNTY, MD
SOUTHERN KENT ISLAND SANITARY PROJECT
SEPTIC TANK EFFLUENT PUMP INSTALLATION

IN WITNESS WHEREOF,

the Principal and Surety cause this instrument to be Signed, Sealed and Delivered

this ____ day of _____, 2016.

PRINCIPAL

_____/s/ (Principal) Secretary By: _____/s/

Address: _____

_____/s/ Witness as to Principal

Address: _____ (SEAL)

SURETY

_____/s/ (Surety) Secretary By: _____/s/ Attorney-in-Fact

Address: _____

_____/s/ Witness as to Surety

Address: _____ (SEAL)

NOTES:

Attach an appropriate Power of Attorney, dated as of the same date as the Bond, evidencing the authority of the Attorney-in Fact to act on behalf of the corporation. Surety companies executing bonds must appear on the U.S. Department of the Treasury most current Bond List (Circular 570 as amended). Bond amounts are subject to the underwriting limitation listed in the most recent Circular 570.

QUEEN ANNE'S COUNTY, MD
SOUTHERN KENT ISLAND SANITARY PROJECT
SEPTIC TANK EFFLUENT PUMP INSTALLATION

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

That We, _____ as
Principal, and _____ a corporation
organized and existing under the laws of the State of Maryland and authorized to do
business in the State of Maryland, as Surety, are held and firmly bound into the County
Commissioners of Queen Anne's County, Maryland, as Obligee, in the full and just sum of
_____ Dollars (\$_____)

(100% of the Contract Price) lawful money of the United States of America, for the
payment of which sum, well and truly be made, we bind ourselves, our heirs, executors,
administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION are such that

WHEREAS, the Principal contemplates entering into a certain contract with the Obligee for
construction of Contract No. SAN 16-01, "**Southern Kent Island Sanitary Project –
Septic Tank Effluent Pumps – Phase 1**", with a Project Manual dated **May 2, 2016**,
pursuant to drawings, specifications and other related documents, constituting the
Contract Documents, which are incorporated into the Agreement by reference, and

NOW, THEREFORE, if the Principal and Obligee shall enter an Agreement with respect to
performance of such work, and if the Principal shall promptly make payment to all persons,
firms, Subcontractors, associations, partnerships and corporations furnishing materials for
or performing labor in prosecution of the work provided for in such Agreement and the
Contract Documents during the term thereof, then this obligation shall be void; otherwise
to remain in full force and effect.

The obligation of the Surety hereunder shall extend to all indebtedness incurred by the
Principal in connection with warranty and/or maintenance obligations of the Principal which
survive the completion of the work.

PROVIDED, FURTHER, that the said Surety, for value received hereby agrees that no
change, extension of time, alteration or addition to the terms of the Contract or to the work
to be performed thereunder or the specifications accompanying the same shall in any way
affect the obligation of the Surety on this Bond, and the Surety does hereby waive notice
of any such change, extension of time, alteration or addition to the terms of the Contract or
to the work or to the specifications.

QUEEN ANNE'S COUNTY, MD
SOUTHERN KENT ISLAND SANITARY PROJECT
SEPTIC TANK EFFLUENT PUMP INSTALLATION

IN WITNESS WHEREOF,

The Principal and Surety cause this instrument to be Signed, Sealed and Delivered

this ____ day of _____, 2016.

PRINCIPAL

_____/s/
(Principal) Secretary

By: _____/s/

Address: _____

_____/s/
Witness as to Principal

Address: _____

(SEAL)

SURETY

_____/s/
(Surety) Secretary

By: _____/s/

Attorney-in-Fact

Address: _____

_____/s/
Witness as to Surety

Address: _____

(SEAL)

NOTES:

Attach an appropriate Power of Attorney, dated as of the same date as the bond, evidencing the authority of the Attorney-in-Fact to act on behalf of the corporation. Surety companies executing bonds must appear on the U.S. Department of the Treasury Most current Bond List (Circular 570 as amended). Bond amounts are subject to the underwriting limitation listed in the most recent Circular 570.

QUEEN ANNE'S COUNTY, MD
SOUTHERN KENT ISLAND SANITARY PROJECT
SEPTIC TANK EFFLUENT PUMP INSTALLATION

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we, _____

of _____

a corporation incorporated under the laws of the State of _____ as SURETY, are held and firmly bound unto the County Commissioners of Queen Anne's County, Maryland in the full and just sum of (5% of the Contract Price)

_____ dollars (\$ _____),

lawful money of the United States of America, to be paid to said County Commissioners of Queen Anne's County, Maryland, or its assigns, to which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

Sealed with our respective seals and dated this _____ day of _____ 2016.

WHEREAS, the above bounden PRINCIPAL has entered into a contract with the said County Commissioners of Queen Anne's County, Maryland bearing even date herewith, for the construction of Contract No. SAN 16-01, "**Southern Kent Island Sanitary Project – Septic Tank Effluent Pumps – Phase 1**", with a Project Manual dated **May 2, 2016**, for approximately the sum of

_____ dollars (\$ _____), and

WHEREAS, it was one of the conditions of the award with the County Commissioners of Queen Anne's County, pursuant to which said contract was entered into, that these presents should be executed.

NOW THEREFORE, if the Principal shall remedy without cost to the OWNER any defects which develop during a period of one (1) year from the date of completion and acceptance of the work performed under said contract provided such defects, in the judgment of the OWNER or his successor having jurisdiction in the premises, are caused by defective or inferior materials or workmanship, then this obligation shall be void; otherwise to remain in full force or virtue.

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IN WITNESS WHEREOF, the said PRINCIPAL and SURETY have duly executed this bond under seal the day and year first above written.

_____(SEAL)
CONTRACTOR

BY

ATTEST

AUTHORIZED OFFICER (CORPORATE SEAL)

_____(SEAL)
SECRETARY

_____(SEAL)

_____(SEAL)

SURETY COMPANY

ATTEST

BY

(SEAL) SECRETARY

ATTORNEY-IN-FACT

NOTES:

Attach an appropriate Power of Attorney, dated as of the same date as the bond, evidencing the authority of the Attorney-in-Fact to act on behalf of the corporation. Surety companies executing bonds must appear on the U.S. Department of the Treasury Most current Bond List (Circular 570 as amended). Bond amounts are subject to the underwriting limitation listed in the most recent Circular 570.

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EQUIPMENT WARRANTY AND CERTIFICATION FORM

Reference: Queen Anne's County, Maryland
Contract No. SAN 16-01

THE UNDERSIGNED HEREBY ATTESTS THAT HE HAS EXAMINED ALL THE REFERENCED PROJECT DRAWINGS AND SPECIFICATIONS AND HEREBY WARRANTS AND CERTIFIES THAT THE EQUIPMENT, COMPONENT, OR SYSTEM HE PROPOSES TO FURNISH AND DELIVER MEETS OR EXCEEDS CONTRACT SPECIFICATIONS, IS SUITABLE FOR ITS INTENDED PURPOSE AND INSTALLATION, AND WILL PROVIDE SATISFACTORY PERFORMANCE AT THE DESIGN CRITERIA SPECIFIED. THIS WARRANTY SHALL BE IN ADDITION TO AND NOT IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED.

EQUIPMENT: _____

MANUFACTURER: _____

Address: _____

By: _____
(Typed Name and Title) (SEAL)
_____/s/_____
(Signature) (Date)

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

SUPPLIER: _____

Address: _____

By: _____
(Typed Name and Title) (SEAL)
_____/s/_____
(Signature) (Date)

THE UNDERSIGNED CONTRACTOR HEREBY SWEARS UNDER PENALTY OF PERJURY THAT (1) THE ATTACHED APPLICATION FOR PAYMENT NO. ____ IS A TRUE AND CORRECT STATEMENT OF WORK DONE AND MATERIAL INCORPORATED TO DATE, (2) ALL MATERIALS AND EQUIPMENT INCORPORATED IN THE SAID PROJECT OR OTHERWISE LISTED IN OR COVERED BY THIS APPLICATION FOR PAYMENT ARE FREE AND CLEAR OF ALL LIENS, CLAIMS, SECURITY INTERESTS AND ENCUMBRANCES. IN ADDITION, CONTRACTOR CERTIFIES THAT THEY HAVE COMPLIED WITH DEPARTMENT OF LABOR, SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970.

DATE: _____ 20____

(CONTRACTOR)

BY: _____
(NAME AND TITLE)

COUNTY OF _____

STATE OF _____

I HEREBY CERTIFY, that on this ____ day of _____, 20____, before me, the subscriber, a Notary Public of the State and County aforesaid, personally appeared _____, who acknowledged himself/herself to be the _____ of _____, being authorized to do so, executed the above application for payment and statement on behalf of said contractor and that all of the statements therein are true, correct and complete, by signing the name of the corporation/partnership/limited liability company by himself/herself as _____.

WITNESS my hand and notarial seal.

Notary Public
My Commission Expires: _____

CONDITIONS OF CONTRACT

CONTRACT NO. SAN 16-01

00700	General Conditions
00800	Supplemental Conditions

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

Agreement - The written agreement between the OWNER and the CONTRACTOR covering the Work to be performed. The Contract Documents will be attached to and made a part of the Agreement.

Application for Payment - The form furnished by the OWNER which is to be used by the CONTRACTOR in requesting progress payments and which is to include the schedule of values required by paragraph 14.1 and an affidavit of the CONTRACTOR that progress payments theretofore received from the OWNER on account of the Work have been applied by the CONTRACTOR to discharge in full all of the CONTRACTOR's obligations incurred in connection with the Work covered by all prior applications for payment.

Bid - The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

Bidder - Any person, firm or corporation submitting a Bid for the Work.

Bonds - Bid, Performance, Payment and Maintenance Bonds and other instruments of security, furnished by the CONTRACTOR and his Surety in accordance with the Contract Documents.

Change Order - A written order to the CONTRACTOR signed by the OWNER authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time issued after execution of the Agreement.

Contract Documents - The Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR'S Bid (including documentation accompanying the Bid and any post-Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications, the Drawings, and any permits provided prior to bid, as the same are more specifically identified in the Agreement, together with all Modifications issued after the execution of the Agreement.

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Contract Price - The total moneys payable to the CONTRACTOR under the Contract Documents.

Contract Time - The number of consecutive calendar days stated in the Agreement for the completion of Work.

CONTRACTOR - As used herein refers to the firm or company selected to perform the construction of the improvements by the OWNER.

COUNTY - The County Commissioners of Queen Anne's County (synonymous with OWNER).

Day – As used herein refers to a calendar day.

Drawings - The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by the ENGINEER and are referred to in the Contract Documents.

EFFECTIVE DATE OF AGREEMENT - The date as indicated within the Agreement on page 00530-5.

ENGINEER – The engineering firm as shown on the Plans who, as used herein, refers to the OWNER's representative who designed the improvements, will review certain shop drawings, will respond to Requests For Information, attend public outreach meetings, and will be the initial interpreter of disputes between the OWNER and the CONTRACTOR.

Field Order - A written order issued by the ENGINEER which clarifies or interprets the Contract Documents in accordance with paragraph 9.3 or orders minor changes in the Work in accordance with paragraph 10.2.

Final Completion - The date of the approval of the final progress payment.

In-Service Date – The date on which an individual property begins utilizing the STEP system for its wastewater disposal following the successful operating period detailed in the General Requirements.

INSPECTOR – An agent of the OWNER, who is a subordinate of the Resident Project Representative, and ensures the Project is constructed in accordance with the design.

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Modification - (a) A written amendment of the Contract Documents signed by both parties; (b) a Change Order; (c) a written clarification or interpretation issued by the ENGINEER in accordance with paragraph 9.3; or (d) a written order for a minor change or alteration in the Work issued by the OWNER pursuant to paragraph 10.2. A modification may only be issued after execution of the Agreement.

Notice of Intent to Award - The written notice by the OWNER to the CONTRACTOR that the CONTRACTOR is qualified to construct the Work and is the apparent low responsive Bidder and that upon compliance with the conditions precedent to be fulfilled by the CONTRACTOR within the time specified, the OWNER may execute and deliver the Agreement to him.

Notice to Proceed - The written notice by the OWNER to CONTRACTOR indicating that all conditions have been fulfilled, the Agreement has been executed, and the CONTRACTOR may occupy the site and begin construction.

OWNER - As used herein shall refer to the entity for which the construction is required in order to improve a property. COUNTY shall be considered synonymous with OWNER.

Project - The entire construction to be performed as provided in the Contract Documents.

Resident Project Representative - The authorized representative of the OWNER who is assigned to the Project site, or any part thereof, and who coordinates all day to day oversight of the construction methods and is the primary liaison between the CONTRACTOR, ENGINEER, and OWNER.

Shop Drawings - All drawings, diagrams, illustrations, brochures, schedules, and other data which are prepared by the CONTRACTOR, a Subcontractor, manufacturer, supplier, or distributor and which illustrate the equipment, material or some portion of the Work.

Specifications - Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

Subcontractor - An individual, firm or corporation having a direct contract with the CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

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Substantial Completion – Substantial Completion will have two definitions as detailed below:

Overall Substantial Completion – The date as certified by the OWNER as having 675 properties placed In-Service and their existing septic tanks fully and properly abandoned. This date will be used for the purposes of; 1) evaluating the Contract Time as used in the Agreement Article 3.1, 2) for the purpose of releasing one-half of the retainage, and 3) for the purpose of the duration of the Maintenance Bond.

On-Site Substantial Completion – The date as certified by the INSPECTOR as to when any individual property's STEP system has been placed In-Service, after satisfactorily completing the 30-day operating period as defined in General Requirement Article 3.15. For the purposes of the initiation of the one year warranty period, any property placed In-Service during any three month calendar 'quarter' will be bundled together and the one year warranty date will initiate the first day of the following quarter, i.e. January 1, April 1, July 1, or October 1.

Superintendent - CONTRACTOR'S authorized representative who is assigned to the project site.

Work - Any and all obligations, duties and responsibilities necessary to the successful completion of the project assigned to or undertaken by the CONTRACTOR under the Contract Documents, including the furnishing of all labor, materials, equipment, and other incidentals.

ARTICLE 2 -PRELIMINARY MATTERS

Award:

- 2.1 The award of the Contract, if it is awarded, will be on the basis of material and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or equal" items, and will be to the lowest responsible responsive bidder whose qualifications indicate the award will be in the best interest of the OWNER and whose proposal complies with all the prescribed requirements. No Notice of Award will be given until the OWNER has concluded such investigations as he deems necessary to establish the responsibility, qualifications and financial ability of the Bidders to do the Work in accordance with the Contract Documents to the satisfaction of the OWNER within the time prescribed. The OWNER reserves the right to reject the Bid of any Bidder who does not pass such investigation to the OWNER's satisfaction. In analyzing Bids, the OWNER may take into consideration alternates and unit prices, if requested by the

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Bid Forms. If the Contract is awarded, the OWNER will give the successful Bidder a Notice of Award within the time indicated in the Instructions to Bidders.

Delivery of Bonds and Certificates of Insurance:

- 2.2 The OWNER may, at any time during the firm-bid period following the opening of Bids, give Notice of Intent to Award the Contract to the bidder designated by the OWNER as the apparent lowest responsible responsive bidder for such Work. The Bidder so designated shall furnish to the OWNER within ten days after the date of such notice, the required Payment and Performance Bonds. Failure of the apparent lowest responsible responsive bidder to deliver the Bonds within the prescribed period shall be just cause for the OWNER to declare the Bid and any Security therefor forfeited. The OWNER may, in its sole discretion, award the Contract to said Bidder, following receipt of said properly executed Bonds. During this same period, the CONTRACTOR will supply certificates of insurance in accordance with Article 5.7.

Forfeiture of Bid Security:

- 2.3 Failure of the successful Bidder to execute and deliver the Agreement within ten days of the Notice of Intent to Award shall be just cause for the OWNER to annul the Notice of Intent to Award and declare the Bid and any Security therefor forfeited.

Execution of Agreement:

- 2.4 At least four (4) counterparts of the Agreement and such other Contract Documents as practicable will be signed by the OWNER and the CONTRACTOR within ten days of the Notice of Award. The OWNER, the CONTRACTOR, and the ENGINEER will each receive an executed duplicate original copy of the Contract Documents.

Copies of Documents:

- 2.5 The OWNER will furnish to the CONTRACTOR up to five (5) complete sets of the Specifications and Drawings as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

Before Starting Work:

- 2.6 Within thirty (30) days after the execution of the Agreement, the CONTRACTOR will

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submit to the OWNER for approval, an estimated progress schedule indicating the starting and completion dates of the various stages of the Work, a schedule of shop drawing submissions, and an anticipated draw schedule for the length of the contract.

- 2.7 Before starting the Work, a pre-construction conference will be held to review the above schedules, to establish procedures for handling shop drawings and other submissions and for processing applications for payment, and to establish a working understanding between the parties as to the Project. Present at the conference will be the OWNER or his representative, the ENGINEER, the Resident Project Representative, the CONTRACTOR, and the Superintendent.
- 2.8 Before undertaking the Work the CONTRACTOR will carefully study and compare the Contract Documents and check and verify all figures shown thereon and all field measurements. He will at once report in writing to the OWNER any conflict, error or discrepancy which he may discover. The CONTRACTOR assumes full responsibility for having familiarized himself with the nature and extent of the Contract Documents, Work, locality, and local conditions that may in any manner affect the Work to be done.

Commencement of Contract Time, Notice to Proceed:

- 2.9 The Contract Time will commence to run on the effective date of the Agreement. A Notice to Proceed will be issued as confirmation that the Work may begin.

Qualifications of Subcontractors, Materialmen and Suppliers:

- 2.10 Upon submission of the bid, each Bidder will submit to the OWNER and the ENGINEER for acceptance a list of the names of Subcontractors and such other persons and organizations (including those who are to furnish principal items of materials or equipment) proposed for those portions of the Work as to which the identity of the Subcontractors and other persons and organizations must be submitted as specified in the Contract Documents. Prior to the Notice of Award, the OWNER will notify the apparent low responsible responsive Bidder in writing if either the OWNER or the ENGINEER, after due investigation, has reasonable objection to any Subcontractor, person or organization on such list. The failure of the OWNER or the ENGINEER to make objection to any Subcontractor, person or organization on the list prior to the Notice of Award shall constitute an acceptance of such Subcontractor, person or organization. Acceptance of any such Subcontractor, person or organization shall not constitute a waiver of any right of the OWNER to reject defective Work, material or equipment, or

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Work, material or equipment not in conformance with the requirements of the Contract Documents.

- 2.11 If, prior to the Notice of Award, the OWNER or the ENGINEER has reasonable objection to and refuses to accept any Subcontractor, person or organization on such list, the apparent low Bidder may, prior to Notice of Award, either: (a) submit an acceptable substitute and the Bid Price shall be increased or decreased by the difference in cost occasioned by such substitution; or (b) withdraw his Bid and not forfeit his Bid Security. If, after the Notice of Award the OWNER or the ENGINEER refuses to accept any Subcontractor, person or organization on such list, the CONTRACTOR will submit an acceptable substitute and the Contract Price shall be increased or decreased by the difference in cost occasioned by such substitution and an appropriate Change Order shall be issued.

Starting the Work:

- 2.12 The CONTRACTOR will start the Work in accordance with the requirements of the Notice to Proceed.

ARTICLE 3 - CORRELATION, INTERPRETATION AND INTENT OF CONTRACT DOCUMENTS

- 3.1 It is the intent of the Specifications and Drawings to describe a complete Project to be constructed in accordance with the Contract Documents. The Contract Documents comprise the entire Agreement between the OWNER and the CONTRACTOR. They may be altered only by a Modification.
- 3.2 The Contract Documents are complementary; what is called for by one is as binding as if called for by all. If the CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, he will call it to the OWNER's attention in writing before proceeding with the Work affected thereby. In resolving such conflicts, errors and discrepancies, the Documents shall be given precedence in the following order: the Agreement, Addenda, Supplementary Conditions, these General Conditions, the Specifications, and the Drawings. Figure dimensions in drawings shall govern over scale dimensions, and detailed drawings shall govern over general drawings. Any Work that may reasonably be inferred from the Specifications or Drawings as being required to produce the intended result shall be supplied whether or not it is specifically called for in both Documents. Work, materials or equipment described in words which so applied have a well-known

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technical or trade meaning shall be deemed to refer to such recognized standards.

- 3.3 Each and every provision of law and clause required by law to be inserted in these Contract Documents shall be deemed to be inserted herein, and the Contract Documents shall be read and enforced as though it were included herein. If through mistake or otherwise, any such provision is not inserted, or is not correctly inserted, then, upon the application of either party, the Contract Documents shall forthwith be altered to make such insertion.

ARTICLE 4 - AVAILABILITY OF LANDS, SUBSURFACE CONDITIONS, REFERENCE POINTS

- 4.1 The OWNER will provide, as indicated in the Contract Documents and as the same becomes available to OWNER, the lands upon which the Work is to be done, rights-of-way for access thereto, and such other lands which are designated for the use of the CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be secured and paid for by the OWNER, unless otherwise specified in the Contract Documents. OWNER may provide necessary easements and rights-of-way in a 'piecemeal' fashion and promptly as the same are obtained but in no event shall any delay in providing such easements entitle CONTRACTOR to an extension of the Contract Time. The CONTRACTOR will provide all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment. The CONTRACTOR shall not utilize any lands, other than those provided by the OWNER, unless and until he shall place on file with the OWNER a written agreement, executed by the property owner and the CONTRACTOR, which shall clearly state the terms and conditions under which the CONTRACTOR has obtained permission or right to such use. Filing of such agreement with the OWNER shall not effect or imply enforcement of agreement terms and conditions by the OWNER.

Subsurface Conditions:

- 4.2 Certain subsurface conditions have been the basis of Project design. Any subsurface investigation results, test boring data, underground utility locations or other information acquired by the OWNER, or by the ENGINEER for the OWNER prior to Advertisement for Bids, have been acquired for the use of the OWNER only. No claim is made as to the sufficiency, accuracy or completeness thereof where such information may be shown or inferred on the Drawings. The OWNER makes information available to the

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CONTRACTOR but only upon the express understanding that all conclusions drawn therefrom are the conclusions of the CONTRACTOR and that providing such information shall in no way constitute a guarantee of accuracy. Neither the OWNER nor the ENGINEER accepts any responsibility for any conclusion, regarding subsurface conditions, that the CONTRACTOR may draw from review of data provided. It is the sole responsibility of the CONTRACTOR to satisfy himself as to the subsurface conditions to be encountered in the Work, by whatever means he deems advisable. No claims for additional payment due to unanticipated subsurface conditions (including, but not limited to, the number, nature, or positioning of underground utilities) will be considered.

Reference Points - General:

- 4.3 The OWNER will establish such general reference points as in his judgment will enable the CONTRACTOR to proceed with the Work. All such reference points (if any) are shown on the Drawings. Any additional points required by the CONTRACTOR will be established at CONTRACTOR's expense. The CONTRACTOR will be responsible for the layout of the work and will protect and preserve the established reference points and will make no changes or relocations without prior written approval of the OWNER. He will report to the OWNER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations. The CONTRACTOR will replace and accurately relocate all reference points so lost, destroyed, or moved.
- 4.4 The CONTRACTOR shall furnish qualified personnel and all materials required for construction stakeout.

The CONTRACTOR shall make all necessary computations required to accurately locate the Work at the coordinates shown on the Drawings. One week prior to proceeding with said Work, the CONTRACTOR shall prepare and submit for the OWNER's review, the proposed horizontal locations of structures, pipelines, and appurtenances.

All pressure pipelines shall be covered with the minimum depth as shown on the Drawings unless they conflict with a pre-existing utility which will then require a deeper cover in order to deflect under.

A digital computer master file (ARC-GIS) of the Work is available from the OWNER for the CONTRACTOR's use provided the CONTRACTOR signs a Release of Liability form and as such recognizes that the use of the master file is at his own risk. CONTRACTOR must take the file as is.

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ARTICLE 5 - BONDS AND INSURANCE

Performance, Payment and Maintenance Bonds:

5.1 The CONTRACTOR will furnish Performance, Payment, and Maintenance Bonds as security for the faithful performance, payment, and warranty of all his obligations under the Contract Documents. These Bonds shall be in amounts as shown in the Instructions to Bidders and in the form and with such sureties as are acceptable to the OWNER. Performance and Payment bonds shall remain in effect until final payment has been made in accordance with paragraph 14.12 and the Maintenance Bond at all times thereafter during the warranty period specified in paragraph 13.9.

CONTRACTOR's Liability Insurance:

5.2 OWNER: The legal title and address of the OWNER is:

The County Commissioners of Queen Anne's County
107 North Liberty Street
Centreville, MD 21617

5.3 CONTRACTOR'S Liability Insurance: The CONTRACTOR shall purchase and maintain insurance during the life of this Contract such Comprehensive General Liability Insurance including product and completed operations liability insurance as will provide protection from the CONTRACTOR'S performance of the Work and the CONTRACTOR'S other obligations under the Contract Documents, whether such performance is by the CONTRACTOR, or by a Subcontractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. This coverage shall include:

Bodily Injury	\$1,000,000 per occurrence/\$2,000,000 aggregate
Property Damage	\$1,000,000 per occurrence/\$2,000,000 aggregate
Personal Injury	\$1,000,000 per occurrence/\$2,000,000 aggregate
Products & Completed Ops	\$1,000,000 per occurrence/\$2,000,000 aggregate

5.3.1 Excess Liability – per occurrence amount shall be equal to the amount of the bid, rounded to the nearest million dollars, less the above General Liability per occurrence amount. The Excess Liability coverage follows the terms and conditions of the Primary

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Commercial General Liability, Public Official Liability (Owner's Protective Liability) and Automobile Liability coverages.

- 5.4 Comprehensive Automobile Liability Insurance: The CONTRACTOR shall purchase and maintain during the life of this Contract such Comprehensive Automobile Liability Insurance including Employer's Non-Owned and Hired Car Liability.
- 5.4.1 Minimum combined single limit for bodily injury and property damage shall be \$1,000,000 per occurrence/\$2,000,000 aggregate.
- 5.5 Worker's Compensation Insurance: The CONTRACTOR shall purchase and maintain during the life of this Contract standard Worker's Compensation Insurance as statutorily required by Maryland including employer's liability coverage (Coverage B) with limits of at least \$100,000 or as required by law, whichever is greater. A Broad Form All States Endorsement shall be attached.
- 5.6 OWNER's Protective Liability Insurance: The CONTRACTOR shall take out and furnish to the OWNER and maintain during the life of this Contract, OWNER'S Protective Liability Insurance including Full XCU with coverage in amounts specified in paragraph 5.3 covering personal injury and property damage.

Insurance Certificates and Policies:

- 5.7 The CONTRACTOR shall file with the OWNER, as hereinbefore required, satisfactory proof of acceptable insurance coverage. Such proof shall, unless otherwise required by the OWNER, consist of the following:
- 5.7.1 Certificates of all insurance policies shall be furnished in a number of copies equal to the number of counter parts of the Contract Documents executed. Which copies shall be clear, readable reproductions, but must be the entire policy including endorsements, exceptions, riders, qualifications and restrictions, exactly as maintained in the records of the insured.
- 5.7.2 Certificates of insurance on the insurance carrier's standard form indicating all policies required by law and the Contract Documents. Each certificate shall carry the provision that the policy may not be canceled or materially changed except upon sixty (60) days (or the legal minimum, whichever is greater) written notice to the OWNER. All insurance shall be kept in force throughout the entire

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construction period and remain in effect until finally complete in accordance with paragraph 14.12.

- 5.7.3 The Certificates of all insurance policies shall list the OWNER (with the address) as the Certificate Holder and shall name the OWNER as an additional insured.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

Supervision and Superintendence:

- 6.1 The CONTRACTOR will supervise and direct the Work efficiently and with his best skill and attention. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The CONTRACTOR will be responsible to see that the finished Work complies accurately with the Contract Documents.
- 6.2 The CONTRACTOR will maintain on the Work at all times during its progress a competent resident Superintendent, who shall not be replaced without written notice to the OWNER except under extraordinary circumstances. The Superintendent will be the CONTRACTOR's representative at the site and shall have authority to act on behalf of the CONTRACTOR. All communications given to the Superintendent shall be as binding as if given to the CONTRACTOR.

Labor, Materials and Equipment:

- 6.3 The CONTRACTOR will provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. He will at all times maintain good discipline and order at the site.
- 6.4 The CONTRACTOR will furnish all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, lights, heat, telephone, water and sanitary facilities, and all other facilities and incidentals necessary for the execution, testing, initial operation, and completion of the Work.
- 6.5 All materials and equipment will be new, except as otherwise provided in the Contract Documents. If required by the OWNER, the CONTRACTOR will furnish satisfactory evidence as to the kind and quality of materials and equipment.
- 6.6 All materials and equipment shall be applied, installed, connected, erected, used, cleaned

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and conditioned in accordance with the instructions of the applicable manufacturer, fabricator or processors, except as otherwise provided in the Contract Documents.

Substitute Materials or Equipment:

- 6.7 If it is indicated in the Specifications that the CONTRACTOR may furnish or use a substitute that is equal to any material or equipment specified, and if the CONTRACTOR wishes to furnish or use a proposed substitute, he will, promptly after the award of the Contract, make written application to the OWNER for approval of such a substitute certifying in writing that the proposed substitute will perform adequately the duties imposed by the general design, be similar and of equal substance to that specified and be suited to the same use and capable of performing the same function as that specified. No substitute shall be ordered or installed without the written approval of the OWNER who shall be the sole judge of equality. Refer to General Requirement section 1.06 for additional details.

Concerning Subcontractors:

- 6.8 The CONTRACTOR will not employ any Subcontractor, other person or organization of the types referred to in paragraph 2.10 (whether initially or as a substitute) against whom the OWNER or the ENGINEER may have reasonable objection, nor will the CONTRACTOR be required to employ any Subcontractor against whom he has reasonable objection. It is the CONTRACTOR's responsibility to notify, and seek approval from, the OWNER of any additions or deletions to the required list of all Subcontractors and or other persons.
- 6.9 The CONTRACTOR will be fully responsible for all acts and omissions of his Subcontractors and of persons directly or indirectly employed by them and of persons for whose acts any of them may be liable to the same extent that he is responsible for the acts and omissions of persons directly employed by him. Nothing in the Contract Documents shall create any contractual relationship between any Subcontractor and the OWNER or the ENGINEER or any obligation on the part of the OWNER or the ENGINEER to pay or to see to the payment of any moneys due any Subcontractor, except as may otherwise be required by law. The OWNER may furnish to any Subcontractor, to the extent practicable, evidence of amounts paid to the CONTRACTOR on account of specific Work done in accordance with the schedule of values.
- 6.10 The divisions and sections of the Specifications and the identifications of any Drawings

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shall not control the CONTRACTOR in dividing the Work among Subcontractors or delineating the Work to be performed by any specific trade.

- 6.11 The CONTRACTOR agrees to bind specifically every Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the OWNER. Every Subcontractor, by undertaking to perform any of the Work, will thereby be deemed to be bound by such terms and conditions.
- 6.12 All Work performed for the CONTRACTOR by a Subcontractor shall be pursuant to an appropriate agreement between the CONTRACTOR and the Subcontractor.

Patent Fees and Royalties:

- 6.13 The CONTRACTOR will pay all license fees and royalties and assume all costs incident to the use of any invention, design, process or device which is the subject of patent rights or copyrights held by others. He will indemnify and hold harmless the OWNER and the ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorneys fees) arising out of any infringement of such rights during or after completion of the Work, and shall defend all such claims in connection with any alleged infringement of such rights.

Permits:

- 6.14 The CONTRACTOR will secure and pay for all construction permits and licenses and will pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of his Bid. CONTRACTOR will notify Miss Utility prior to excavating on any given address in accordance with the applicable regulations.

Laws and Regulations:

- 6.15 The CONTRACTOR will give all notices and comply with all laws, ordinances, rules and regulations applicable to the Work. If the CONTRACTOR observes that the Specifications or Drawings are at variance therewith, he will give the OWNER and ENGINEER prompt written notice thereof, any necessary changes shall be adjusted by an appropriate Modification. If the CONTRACTOR performs any Work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the OWNER and ENGINEER, he will bear all costs arising therefrom. However, it shall not be his primary responsibility to make certain that the Drawings and Specifications are in

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accordance with such laws, ordinances, rules and regulations.

Taxes:

- 6.16 The CONTRACTOR will pay all sales, consumer, use and other similar taxes required by the law of the place where the Work is to be performed.

Use of Premises:

- 6.17 The CONTRACTOR will confine his equipment, the storage of materials and equipment and the operations of his workmen to areas permitted by law, ordinances, permits, or the requirements of the Contract Documents; and shall not unreasonably encumber the premises with materials or equipment. No material not to be used at a specific address is to be stored at that address.
- 6.18 The CONTRACTOR will not load nor permit any part of the Work to be loaded with weights that will endanger the Work, nor will he subject any part of the Work to stresses or pressures that will endanger it.

Record Drawings:

- 6.19 The CONTRACTOR shall keep one record copy of all Specifications, Drawings, Addenda, Modifications, and Shop Drawings at the site in good order and annotated to show all changes made during the construction process. These shall be available to the OWNER and shall be delivered to him for the OWNER upon completion of the Project.
- 6.19.1 The CONTRACTOR shall be furnished with one paper set of all Contract Drawings which shall be used exclusively by the CONTRACTOR and his subcontractors for incorporating thereon the as-built information of all Contract work as the construction progresses.
- 6.19.2 This complete set of prints shall be maintained at the site at all times and the CONTRACTOR shall be responsible for having clearly, neatly, accurately, and promptly recorded thereon, as the Work is performed, the record of the Contract Work. Principal dimensions, elevations, locations (by station, offset and depth), and such other data as required shall be recorded for all work.
- 6.19.3 The marked-up prints will be reviewed periodically by the OWNER and shall

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be corrected immediately if found either inaccurate or incomplete.

- 6.19.4 At the completion of the project the set of marked-up prints shall be submitted to the OWNER for final inspection and comment; the CONTRACTOR shall correct, amplify, and do all other work as may be required by the OWNER to complete the as-built information in a manner satisfactory to the OWNER. Once complete to the OWNER's satisfaction, the as-built information shall be input digitally into the master file provided in paragraph 4.4 by the CONTRACTOR.

The above is a condition of final payment. However should draft as-builts not be provided within two months after substantial completion, or if submitted within two months but are not in adequate detail or otherwise do not meet with the satisfaction of the Owner within four months of substantial completion, the final invoice will be reduced by $\frac{1}{4}$ of one percent of the final contract price, or \$20,000, whichever is greater.

- 6.20 The CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. He shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

6.20.1 All employees on the Work and other persons who may be affected thereby.

6.20.2 All the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site.

6.20.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation or replacement in the course of construction.

6.20.4 As between the CONTRACTOR and the ENGINEER and the OWNER, the CONTRACTOR shall have exclusive responsibility for the initiation and execution of measures necessary for the protection of persons and property. As between the CONTRACTOR and the ENGINEER and the OWNER the CONTRACTOR shall have exclusive responsibility for the means, methods, construction procedures, sequence of operations and every other aspect of

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the conduct of the Work. Nothing in the Contract Documents shall be construed as imposing upon the ENGINEER or OWNER any responsibility for project safety.

6.20.5 The CONTRACTOR will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. He will erect and maintain, as required by the conditions and progress of the Work all necessary safeguards for safety and protection. The CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them. The CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall continue until such time as all Work is completed and the OWNER has issued a notice to the CONTRACTOR in accordance with paragraph 14.13 that the Work is acceptable.

6.20.6 The CONTRACTOR shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be the CONTRACTOR's superintendent unless otherwise designated in writing by the CONTRACTOR to the OWNER.

Emergencies:

6.21 In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the CONTRACTOR without special instruction or authorization from the ENGINEER or the OWNER, is obligated to act, at his discretion, to prevent threatened damage, injury or loss. He will give the OWNER prompt written notice of the cause of the incident leading to the emergency and also of any significant changes in the Work or deviations from the Contract Documents caused thereby, and a Change Order shall thereupon be issued covering the changes and deviations involved. If the CONTRACTOR believes that additional Work done by him in an emergency which arose from causes beyond his control entitles him to an increase in the Contract Price or an extension of the Contract Time, he may make a claim therefor as provided in Articles 11 and 12.

Shop Drawings, Certifications, and Samples:

6.22 After checking and verifying all field measurements, the CONTRACTOR will submit to the

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OWNER for approval, in accordance with the accepted schedule of shop drawing submissions (see paragraph 2.6), the number of Shop Drawings as stated in the General Requirements, which shall have been checked by and stamped with the date of approval of the CONTRACTOR and identified as the OWNER may require. The data shown on the Shop Drawings will be complete with respect to dimensions, design criteria, materials of construction and the like to enable the OWNER to review the information as required.

- 6.23 The CONTRACTOR will also submit to the OWNER for approval, with such promptness as to cause no delay in Work, all samples or certifications required by the Contract Documents. All samples will have been checked by and stamped with the date of approval of the CONTRACTOR, identified clearly as to material, manufacturer, any pertinent catalog numbers and the use for which intended.
- 6.24 At the time of each submission, the CONTRACTOR will in writing call the OWNER's attention to any deviations that the Shop Drawing, certification, or sample may have from the requirements of the Contract Documents.
- 6.25 The OWNER will review and approve with reasonable promptness Shop Drawings, certifications, and samples, but his review and approval shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents. The approval of a separate item as such will not indicate approval of the assembly in which the item functions. The CONTRACTOR will make any corrections required by the OWNER and will return the required number of corrected copies of Shop Drawings and certifications and resubmit new samples until approved. The CONTRACTOR shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections called for by the OWNER on previous submissions. The CONTRACTOR's stamp of approval on any Shop Drawing, certification, or sample shall constitute a representation to the OWNER and the OWNER that the CONTRACTOR has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers and similar data or he assumes full responsibility for doing so, and that he has reviewed or coordinated each Shop Drawing, certification, or sample with the requirements of the Work and the Contract Documents.
- 6.26 No Work requiring a Shop Drawing, certification, or sample submission shall be commenced until the submission has been approved by the OWNER. A copy of each approved Shop Drawing and certification and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the OWNER.

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- 6.27 The OWNER 's approval of Shop Drawings, certifications, or samples shall not relieve the CONTRACTOR from his responsibility for any deviations from the requirements of the Contract Documents unless the CONTRACTOR has in writing called the OWNER's attention to such deviation at the time of submission and the OWNER has given written approval to the specific deviation; nor shall any approval by the OWNER relieve the CONTRACTOR from responsibility for errors or omissions in the Shop Drawings.
- 6.28 The CONTRACTOR shall note that the OWNER has not given approval to any item of equipment or material prior to submission of Shop Drawings, certifications or samples. This applies both to specified and alternate items. Therefore, use of specified items does not remove the necessity to submit for approval. The OWNER will not give oral or written approval to any equipment supplier, materialman, manufacturer's representative or vendor. The OWNER will not review or consider any submission prior to the issuing of a Notice to Proceed and will not consider or review any submission made directly by an equipment supplier, materialman, manufacturer's representative or vendor. Any such submittal will be forwarded to the CONTRACTOR without comment.

6.29 Clean Up:

The CONTRACTOR shall continuously keep rights-of-way, easement areas, storage areas, streets, roads, highways, and adjacent properties free from accumulations of waste materials, rubbish and windblown debris caused by his operations.

The CONTRACTOR shall daily broom clean paved surfaces and remove surplus materials, tools, construction equipment and machinery as each work area is completed. Rake clean other surfaces of the grounds. Restore areas disturbed by construction.

Indemnification:

- 6.30 To the fullest extent permitted by law, the CONTRACTOR shall indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom, and (2) is caused in whole or in part by any negligent act or omission of the CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable,

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regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Paragraph 6.30.

- 6.31 In any and all claims against the OWNER or the ENGINEER or any of their agents or employees by any employee of the CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.30 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any Subcontractor under Workmen's Compensation Acts, Disability Benefit Acts or other employee benefit acts.

Operations and Maintenance Data:

- 6.32 No later than two (2) months after approval of Shop Drawings, one set of Approved Shop Drawings shall be furnished to the OWNER. In addition prior to fifty percent (50%) completion of this Contract, the CONTRACTOR shall secure and deliver the OWNER four (4) complete indexed files containing approved operation and maintenance manuals, and other data for Use and Occupancy, or for substantial completion. Indexed files containing approved operation and maintenance manuals, and other data shall be as follows:

- 6.32.1 Equipment function, normal operating characteristics, and limiting conditions for all equipment furnished.
- 6.32.2 Detailed assembly, installation, alignment, adjustment, and checking instructions for all equipment furnished.
- 6.32.3 Detailed operating instructions for start-up, calibration, routine and normal operation, regulation and control shutdown and emergency conditions for all equipment furnished.
- 6.32.4 Detailed lubrication instructions and schedules for all equipment furnished, including identification of lubricant.
- 6.32.5 Detailed guide to "trouble-shooting" for all equipment furnished.

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- 6.32.6 Detailed parts lists (including name and number), list of recommended spare parts (including name and number), and an exploded view of each equipment assembly for all equipment furnished.
 - 6.32.7 Detailed schedule of maintenance steps to be taken during periods of scheduled down-time for equipment maintenance for all equipment furnished.
 - 6.32.8 Detailed preventative maintenance procedures and schedules for all equipment furnished.
- 6.33 Non-availability of operating and maintenance manuals or inaccuracies therein may be grounds for cancellation and postponement of any scheduled inspection or testing by the OWNER until such time as the discrepancy has been corrected and/or retainage of sufficient monies to prepare same.
- 6.34 Each copy of the manual shall be assembled in one or more loose leaf binders, each with title page, typed table of contents, typed list of tables, typed list of figures, and heavy section dividers with copper reinforced holes and numbered plastic index tabs. Each manual shall be divided into sections headed by the equipment specification section number and title listed in these detailed specifications. Binders shall be 3-ring, hardback type, black in color, with transparent vinyl front cover suitable for inserting identifying cover and with a transparent vinyl pocket on the spine for label. All data shall be punched for binding; composition and printing shall be arranged so that punching does not obliterate any data. The cover and binding edge of each manual shall have the project number and title, specification division number and title, and manual title printed thereon, all as approved by the OWNER.
- 6.35 All copies of Shop Drawings and diagrams shall be reduced to either 8-1/2 by 11 inches or 11 inches in the vertical dimension and as near as practicable to 17 inches in the horizontal dimensions. Such sheets shall be folded to 8-1/2 by 11 inches. The manual and other data shall be printed on first quality paper, 8-1/2 x 11 inch size with standard 3-hole punching. Drawings and diagrams shall be reduced to 8-1/2 x 11 inches or 11 x 17 inches.
- 6.35.1 Binders shall be labeled Vol. 1, Vol. 2, etc., where more than one is required. The table of contents for the entire set, identified by volume number, shall appear in each binder.

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ARTICLE 7 - WORK BY OTHERS

- 7.1 The OWNER may perform additional Work related to the project by himself, or he may let other direct contracts therefor which shall contain general conditions similar to these. The CONTRACTOR will afford the other contractors who are parties to such direct contracts (or the OWNER, if he is performing the additional Work himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of Work, and shall properly connect and coordinate his Work with theirs.
- 7.2 If any part of the CONTRACTOR's Work depends for proper execution or results upon the Work of any such other contractor (or the OWNER), the CONTRACTOR will inspect and promptly report to the OWNER in writing any defects or deficiencies in such Work that render it unsuitable for such proper execution and results. His failure so to report shall constitute an acceptance of the other Work as fit and proper for the relationship of his Work except as to defects and deficiencies which may appear in the other Work after the execution of his Work.
- 7.3 The CONTRACTOR will do all cutting, fitting and patching of his Work that may be required to make its several parts come together properly and fit it to receive or be received by such other Work. The CONTRACTOR will not endanger any Work of others by cutting, excavating or otherwise altering their Work and will only cut or alter their Work with the written consent of the OWNER.
- 7.4 If the performance of additional Work by other Contractors or the OWNER is not noted in the Contract Documents prior to the execution of the Contract, written notice thereof shall be given to the CONTRACTOR prior to starting any such additional Work. If the CONTRACTOR believes that the performance of such additional Work by the OWNER or others involves him in additional expense or entitles him to an extension of the Contract Time, he may make a claim therefor as provided in Articles 11 and 12.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

- 8.1 The OWNER will issue all formal and official communications to the CONTRACTOR either directly or via their Resident Project Representative.
- 8.2 The OWNER will furnish the data required to the CONTRACTOR under the Contract Documents promptly and shall make payments to the CONTRACTOR promptly after they

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are due as provided in paragraph 14.4.

- 8.3 The OWNER's duties in respect of providing lands, etc. are set forth in paragraphs 4.1 and 4.2, and his duty to establish reference points is set forth in paragraphs 4.3 and 4.4.
- 8.4 In connection with the OWNER's right to stop Work or suspend Work, see paragraphs 13.7 and 15.1. Paragraph 15.2 deals with the OWNER's right to terminate services of the CONTRACTOR under certain circumstances.
- 8.5 OWNER's agents will provide day to day inspection of the Work.

Rejecting Defective Work:

- 8.6 The OWNER or the Resident Project Representative will have authority to disapprove or reject Work which is defective (which term is hereinafter used to describe Work that is unsatisfactory, faulty or defective, or does not conform to the requirements of the Contract Documents or does not meet the requirements of any inspection, test or approval referred to in paragraph 13.2). They will also have authority to require special inspection or testing of the Work as provided in paragraph 13.5, whether or not the Work is fabricated, installed or completed.

Shop Drawings, Change Orders and Payments:

- 8.7 In connection with the OWNER 's responsibility as to Shop Drawings, certifications, and samples, see paragraphs 6.22 through 6.29 inclusive.
- 8.8 In connection with the OWNER 's responsibility for Change Orders, see Articles 10, 11, and 12.
- 8.9 In connection with the OWNER 's responsibilities in respect of applications for payment, etc., see Article 14.

Resident Project Representative:

- 8.10 The OWNER will furnish a full-time Resident Project Representative with assistants (INSPECTORS) to assist the ENGINEER in carrying out his responsibilities at the site. The duties, responsibilities and limitations of authority of such Resident Project Representative and assistants shall be as set forth hereinafter.

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- 8.10.1 General: The Resident Project Representative is the OWNER's agent, will act as directed by and under the supervision of the OWNER, and will confer with the ENGINEER regarding his actions when issues with the design arise. The Resident Project Representative's dealings in matters pertaining to the on-site Work shall in general be only with the ENGINEER and the CONTRACTOR; dealings with Subcontractors shall only be through or with the full knowledge of the CONTRACTOR.
- 8.10.2 Duties and Responsibilities: The Resident Project Representative shall:
- 8.10.2.1 Schedule - Receive the construction schedule prepared by the CONTRACTOR and distribute the schedule to the OWNER.
 - 8.10.2.2 Conferences - Attend preconstruction conferences. Arrange a schedule of progress meetings and other job conferences as required in consultation with the OWNER and notify those expected to attend in advance. Maintain and circulate copies of records of the meetings.
 - 8.10.2.3 Liaison:
 - 8.10.2.3.1 Serve as the OWNER 's liaison with the CONTRACTOR working principally through the CONTRACTOR's field Superintendent. Alert the CONTRACTOR, through his field Superintendent, to the hazards involved in accepting and acting upon instructions from the OWNER or others, except such instructions transmitted through the OWNER.
 - 8.10.2.3.2 Cooperate with the CONTRACTOR in his dealings with the various local agencies having jurisdiction over the Project in order to complete service connections to public utilities and facilities.
 - 8.10.2.3.3 Assist in obtaining from the OWNER additional details or information, when required at the job site for proper execution of the Work.
 - 8.10.2.3.4 Assist CONTRACTOR in interactions with property owners

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impacted by the execution of the Work.

- 8.10.2.4 Approvals - Assist in obtaining from the CONTRACTOR a list of his proposed suppliers and Subcontractors.
- 8.10.2.5 Samples - Assist in obtaining field samples of materials delivered to the site which are required to be furnished, and keep record of actions.
- 8.10.2.6 Shop Drawings - Receive approved Shop Drawings and other submissions, record data received, maintain a file of the drawings and submissions, and check construction for compliance with them.
- 8.10.2.7 Review of Work, Inspections and Tests:
 - 8.10.2.7.1 Conduct on-site observations of the Work in progress for the OWNER as a basis for determining that the Project is proceeding in accordance with the Contract Documents.
 - 8.10.2.7.2 Verify that tests, including equipment and systems startup, which are required by the Contract Documents are conducted and that the CONTRACTOR maintains adequate records thereof. Observe, record and report to the OWNER appropriate details relative to the test procedures and startups.
 - 8.10.2.7.3 Accompany visiting representatives of public or other agencies having jurisdiction over the Project and record the outcome of these visits.
 - 8.10.2.7.4 Whenever he considers it necessary or advisable to insure the proper carrying out of the intent of the Contract Documents, the Resident Project Representative shall have authority to disapprove Work or materials as failing to comply with the Contract Documents, approved Shop Drawings, or samples.
- 8.10.2.8 Interpretation of Contract Documents - Transmit to the CONTRACTOR the OWNER 's interpretation of the Contract Documents.

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- 8.10.2.9 Modifications - Consider and evaluate the CONTRACTOR's suggestions for modifications in Drawings or Specifications and report them with recommendations to the OWNER.
- 8.10.2.10 Records:
- 8.10.2.10.1 Maintain at the job site orderly files for correspondence, reports of job conferences, Shop Drawings and other submissions, reproductions or original Contract Documents including all Addenda, Change Orders and additional Drawings issued subsequent to the award of the Contract, the OWNER's interpretations of the Contract Documents, progress reports, and other Project related documents.
 - 8.10.2.10.2 Keep a diary or log book, recording hours on the job site, weather conditions, list of visiting officials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures.
 - 8.10.2.10.3 Record names, addresses and telephone numbers of all CONTRACTORS, Subcontractors and major material suppliers.
 - 8.10.2.10.4 Maintain a set of Drawings on which authorized changes are noted, and deliver to the OWNER at the completion of the Project.
- 8.10.2.11 Reports:
- 8.10.2.11.1 Furnish the OWNER periodic reports as required of progress of the Project and the CONTRACTOR's compliance with the approved construction schedule.
 - 8.10.2.11.2 Consult with the OWNER in advance of scheduled major tests or start of important phases of the Project.
- 8.10.2.12 Payment Requisitions - Review applications for payment with the

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CONTRACTOR for compliance with the established procedure for their submission and forward them with recommendations to the OWNER, noting particularly their relation to the Work completed and materials and equipment delivered at the site.

- 8.10.2.13 Guarantees, Certificates, Maintenance and Operation Manuals - During the course of the Work, assemble guarantees, certificates, maintenance operation manuals and other required data to be furnished by the CONTRACTOR and upon acceptance of the Project, deliver this material to the OWNER for his approval.
- 8.10.2.14 Completion:
 - 8.10.2.14.1 Prior to final inspection, submit to the CONTRACTOR a list of observed items requiring correction and verify that each correction has been made.
 - 8.10.2.14.2 Conduct final inspection in the company of the CONTRACTOR, the ENGINEER and the OWNER and prepare a final list of items to be corrected.
 - 8.10.2.14.3 Verify that all items on final list have been corrected and make recommendations to the OWNER concerning acceptance.
- 8.10.3 Limitations of Authority: Except upon written instructions of the OWNER, the Resident Project Representative:
 - 8.10.3.1 Shall not authorize any deviation from the Contract Documents.
 - 8.10.3.2 Shall not undertake any of the responsibilities of the CONTRACTOR, the Subcontractors, or the CONTRACTOR's field Superintendent.
 - 8.10.3.3 Shall not expedite the Work for the CONTRACTOR.
 - 8.10.3.4 Shall not advise on or issue directions relative to any aspect of the construction technique or sequence unless a specific technique or sequence is called for in the Contract Documents.

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- 8.10.3.5 Shall not authorize the OWNER to occupy the Project in whole or in part prior to final acceptance of the Work.
- 8.10.3.6 Shall not participate in specialized field or laboratory tests.

Limitations on OWNER 's Responsibilities:

- 8.11 Neither the OWNER's authority to act under this Article 8 nor any decision made by him in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the OWNER to the CONTRACTOR, any Subcontractor, any of their agents or employees or any other person performing any of the Work.
- 8.12 The OWNER will not be responsible for the construction means, methods, techniques, sequences or procedures, or the safety precautions and programs incident thereto, and he will not be responsible for the CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.
- 8.13 The OWNER will not be responsible for the acts or omissions of the CONTRACTOR, or any Subcontractors, or any of his or their agents or employees, or any other persons performing any of the Work.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

OWNER's Representative:

- 9.1 The ENGINEER shall be the OWNER's representative during the construction period as it regards issues dealing with design issues but will have limited participation of the inspection of the Work. The duties and responsibilities and the limitations of authority of the ENGINEER as the OWNER's representative during construction are set forth in Articles 1 through 19 of these General Conditions and shall not be extended without written consent of the OWNER and the ENGINEER. The ENGINEER shall also act as a neutral party to attempt to resolve disputes between OWNER and CONTRACTOR that the two parties are unable to resolve on their own.

Visits to Site:

- 9.2 The ENGINEER will make sporadic visits to the site to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in

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accordance with the Contract Documents. He will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. His efforts will be directed toward providing general assurance for the OWNER that the completed Project will conform to the requirements of the Contract Documents.

Clarifications and Interpretations:

- 9.3 The ENGINEER or OWNER will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents (in the form of drawings or otherwise) as they may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If the CONTRACTOR believes that a written clarification and interpretation entitles him to an increase in the Contract Price, he may make a claim therefor as provided in Article 11.

Decisions on Disagreements:

- 9.4 The ENGINEER will be the initial interpreter of the terms and conditions of the Contract Documents and the judge of the performance thereunder. In his capacity as interpreter and judge he will exercise his best efforts to insure faithful performance by both the OWNER and the CONTRACTOR. He will not show partiality to either and shall not be liable for the result of any interpretation or decision rendered in good faith. Claims, disputes and other matters relating to the execution and progress of the Work or the interpretation of or performance under the Contract Documents shall be referred initially to the ENGINEER for decision, which he shall render in writing within a reasonable time.
- 9.5 Either the OWNER or the CONTRACTOR may demand arbitration with respect to any such claim, dispute or other matter that has been referred to the ENGINEER, except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.16, such arbitration to be in accordance with Article 16. However, no demand for arbitration of any such claim, dispute or other matter shall be made until the earlier of (a) the date on which the ENGINEER has rendered his decision; or (b) the tenth day after the parties have presented their evidence to the ENGINEER if he has not rendered his written decision before that date. No demand for arbitration shall be made later than thirty days after the date on which the ENGINEER rendered his written decision in respect of the claim, dispute or other matter as to which arbitration is sought, and the failure to demand arbitration within said thirty days' period shall result in the ENGINEER's decision being final and binding upon the OWNER and the CONTRACTOR. If the ENGINEER renders a decision after arbitration proceedings have been initiated, such

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decision may be entered as evidence but shall not supersede the arbitration proceedings, except where the decision is acceptable to the parties concerned.

ARTICLE 10 - CHANGES IN THE WORK

- 10.1 Without invalidating the Agreement, the OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work; these will be authorized by Change Orders. Upon receipt of a Change Order, the CONTRACTOR will proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents. If any change order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in Article 11 or Article 12.
- 10.2 The OWNER may authorize minor changes or alterations in the Work not involving extra cost and not inconsistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order. If the CONTRACTOR believes that any minor change or alteration authorized by the OWNER, entitles him to an increase in the Contract Price, he may make a claim therefor as provided in Article 11.
- 10.3 Additional Work performed by the CONTRACTOR without authorization of a Change Order will not entitle him to an increase in the Contract Price or an extension of the Contract Time, except in the case of an emergency as provided in paragraph 6.21 and except as provided in paragraphs 10.2, 13.2, and 13.6.
- 10.4 The OWNER will execute appropriate Change Orders covering changes in Work performed in an emergency as provided in paragraph 6.21 and any other claim of the CONTRACTOR for a change in the Contract Time or the Contract Price which is approved by the OWNER.
- 10.5 It is the CONTRACTOR's responsibility to notify his Surety of any changes affecting the general scope of the Work or change in the Contract Price and the amount of the applicable Bonds shall be adjusted accordingly. The CONTRACTOR will furnish proof of such adjustment to the OWNER.

ARTICLE 11 - CHANGE OF CONTRACT PRICE

- 11.1 The Contract Price constitutes the total compensation payable to the CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or

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undertaken by the CONTRACTOR shall be at his expense without change in the Contract Price.

11.2 The Contract Price may only be changed by a Change Order. Any claim for an increase in the Contract Price, shall be in writing delivered to the OWNER within fifteen days of the occurrence of the event giving rise to the claim. All claims for adjustments in the Contract Price shall be determined by the ENGINEER if the OWNER and the CONTRACTOR cannot otherwise agree on the amount involved. Any change in the Contract Price resulting from any such claim shall be incorporated in a Change Order.

11.2.1 The OWNER at any time without notice to any Surety may make changes in the Work of the Contract by making alterations therein, by making additions thereto, or by omitting Work therefrom, and no such action shall invalidate the Contract, relieve or release the CONTRACTOR from any guarantee under the Contract, affect the terms or validity of any bond, relieve or release any Surety, or constitute grounds for any claim by the CONTRACTOR for damages or loss of anticipated profits. All Work required by such alterations, additions, or omissions shall be executed under the terms of the Contract.

11.2.2 Other than in an emergency endangering life or property or pursuant to a Field Order, the CONTRACTOR shall not make any changes in the Work nor furnish any labor, equipment, materials, supplies, or other services in connection with any change except pursuant to, and after, receipt of a written authorization from the OWNER in the form of a Change Order or Modification. The CONTRACTOR shall not be entitled to any increase in the Contract price or extension of the Contract time, and no claim therefor shall be valid, unless such written authorization has been so issued to the CONTRACTOR.

11.2.3 The OWNER may authorize minor changes in the Work which do not alter the character, quantity, or cost of the Work as a whole. These changes may be accomplished by a Field Order. The CONTRACTOR shall carry out such Field Orders Promptly and without any adjustment of the Contract price or Contract time.

11.3 The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

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11.3.1 Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved.

11.3.2 By mutual acceptance of a lump sum.

11.3.3 By cost and a mutually acceptable fixed amount for overhead and profit.

11.3.4 If none of the above methods is agreed upon, the value shall be determined by the ENGINEER on the basis of costs and a percentage for overhead and profit. Costs shall only include labor (payroll, payroll taxes, fringe benefits, workmen's compensation, etc.), materials, equipment, and other incidentals directly related to the Work involved. The maximum percentage which shall be allowed for the CONTRACTOR's combined overhead and profit shall be as follows:

11.3.4.1 For all such Work done by his own organization, the CONTRACTOR may add up to ten percent (10%) of his actual net increase in cost, and

11.3.4.2 For all such Work done by Subcontractors, each Subcontractor may add up to ten percent (10%) of his actual net increase in costs for combined overhead and profit and the CONTRACTOR may add up to five percent (5%) of the Subcontractor's total for his combined overhead and profit, provided that no overhead or profit shall be allowed on costs incurred in connection with premiums for public liability insurance or other special insurance directly related to such Work.

In such case and also under paragraph 11.3.3 the CONTRACTOR will submit in form prescribed by the ENGINEER an itemized cost breakdown together with supporting data.

11.4 The amount of credit to be allowed by the CONTRACTOR to the OWNER for any such change which results in a net decrease in cost will be the amount of the actual net

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decrease. When both additions and credits are involved in any one change, the combined overhead and profit shall be figured on the basis of the net increase, if any.

11.5 VARIATIONS IN ESTIMATED QUANTITIES

11.5.1 When the quantity of a contract item is an estimated quantity and where the actual quantity of such pay item varies more than 25 percent above or below the estimated quantity stated in this contract, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 125 percent or below 75 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the ENGINEER shall, upon receipt of a written request for an extension of time within 10 days from the beginning of the delay ascertain the facts and make the adjustment for extending the completion date as in his judgment the findings justify.

11.5.2 When the quantity of a contingent contract item is an estimated quantity and where the actual quantity of such pay item varies more than 50 percent above or below the estimated quantity stated in this contract, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 150 percent or below 50 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the ENGINEER shall, upon receipt of a written request for an extension of time within 10 days from the beginning of the delay ascertain the facts and make the adjustment for extending the completion date as in his judgment the findings justify.

ARTICLE 12 - CHANGE OF THE CONTRACT TIME

12.1 The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time, shall be in writing delivered to the OWNER within ten days of the occurrence of the event giving rise to the claim. All claims for adjustment in the Contract Time shall be determined by the ENGINEER if the OWNER and the CONTRACTOR cannot otherwise agree. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order.

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- 12.2 The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of the CONTRACTOR if he makes a claim therefor as provided in paragraph 12.1. Such delays shall include, but not be restricted to acts or neglect by any separate CONTRACTOR employed by the OWNER, fires, floods, labor disputes, epidemics, weather conditions which prohibit work, or acts of God.
- 12.3 All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 12 shall not exclude recovery for damages (including compensation for additional professional services) for delay by either party.

ARTICLE 13 - WARRANTY AND GUARANTEE, TESTS AND INSPECTIONS, CORRECTION,
REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

Warranty and Guarantee:

- 13.1 The CONTRACTOR warrants and guarantees to the OWNER that all materials and equipment will be new unless otherwise specified and that all Work will be of good quality and free from faults or defects and in accordance with the requirements of the Contract Documents and of any inspection, tests or approvals referred to in paragraph 13.2. All unsatisfactory Work, all faulty or defective work and all Work not conforming to the requirements of the Contract Documents or of such inspections, tests or approvals shall be considered defective. Prompt notice of all defects shall be given to the CONTRACTOR. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 13.
- 13.1.1 The work under the Contract, except as expressly excluded, and all of its subcontracts, severally and collectively, whether herein stipulated in each case or not, shall be guaranteed against faulty workmanship and/or material as specified below from date of acceptance of the work. The provisions of the guarantee and/or guarantees shall be incumbent on all parties of the Work, including the CONTRACTOR, each subcontractor, all material supply houses and all manufacturers whose products and/or equipment are incorporated into the facilities.
- 13.1.2 Neither the Certificate of Overall Substantial Completion, Final Certificate of Payment, nor any provisions in the Contract Documents, nor partial or entire use of occupancy of the premises by the OWNER shall constitute an acceptance of Work, materials or equipment not performed or installed in

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accordance with the Contract Documents, or relieve the CONTRACTOR or his Sureties of liability in respect to any warranties or responsibility for faulty materials or workmanship.

- 13.1.3 The CONTRACTOR shall guarantee all materials and equipment furnished and Work performed for a period of at least one (1) year (but not more than 15 months) from the date of each On-Site Substantial Completion as defined in the definitions section of these General Conditions. The CONTRACTOR warrants and guarantees for a period of at least one (1) year (but not more than 15 months) from the date of each On-Site Substantial Completion of the system that the completed system is free from all defects due to faulty materials or workmanship and the CONTRACTOR shall promptly make such repairs of any damage to other parts of the system resulting from such defects with reasonable promptness. Warranty also extends to any and all site restoration and landscaping plant material either damaged or replaced during the installation. In the event that the CONTRACTOR should fail to make such repairs, adjustments, or other work that may be necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred.
- 13.1.4 The Maintenance Bond shall remain in full force and effect through the guarantee period which for the purposes of the Maintenance Bond is one (1) year from the date of Overall Substantial Completion.

Tests and Inspections:

- 13.2 If the Contract Documents, laws ordinances, rules, regulations or orders of any public authority having jurisdiction require any Work to specifically be inspected, tested, or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the OWNER timely notice of readiness therefor. The CONTRACTOR will furnish the OWNER the required certificates of inspections, testing or approval. All such tests will be in accordance with the methods prescribed by the American Society for Testing and Materials or such other applicable organization as may be required by law or the Contract Documents. If any such Work required so to be inspected, tested or approved is covered without written approval of the OWNER, it must, if requested by the OWNER, be uncovered for observation at the CONTRACTOR's expense. The cost of all such inspections, tests and approvals shall be borne by the CONTRACTOR unless otherwise provided.

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- 13.3 Neither observations by the OWNER nor inspections, tests or approvals by persons other than the CONTRACTOR shall relieve the CONTRACTOR from his obligations to perform the Work in accordance with the requirements of the Contract Documents.

Access to the Work:

- 13.4 The OWNER or ENGINEER and their representatives will at all times have access to the Work. The CONTRACTOR will provide proper facilities for such access and observation of the Work and also for any inspection, or testing thereof by others. Representatives of any federal, state, or other governmental agency having interest in, or jurisdiction over any of the Work shall at all times have access to the Work.

Uncovering Work:

- 13.5 If any Work is covered contrary to the written request of the OWNER, it must, if requested by the OWNER, be uncovered for his observation and replaced at the CONTRACTOR's expense.
- 13.6 If any Work has been covered which the OWNER has not specifically requested to observe prior to its being covered, or if the OWNER considers it necessary or advisable that covered work be inspected or tested by others, the CONTRACTOR, at the OWNER's request, will uncover, expose or otherwise make available for observation inspection or testing as the OWNER may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, including compensation for additional professional services, and an appropriate deductive Change Order shall be issued. If, however, such Work is not found to be defective the CONTRACTOR will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction if he makes a claim therefor as provided in Articles 11 and 12.

OWNER May Stop the Work:

- 13.7 If the Work is defective, or the CONTRACTOR fails to supply sufficient skilled workmen or suitable materials or equipment, or if the CONTRACTOR fails to make prompt payments to Subcontractors or for labor, materials or equipment, the OWNER may order the

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CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated. However, this right of the OWNER to stop the Work shall not give rise to any duty on the part of the OWNER to exercise this right for the benefit of the CONTRACTOR or any other party.

- 13.8 If required by the OWNER prior to approval of final payment, the CONTRACTOR will promptly, without cost to the OWNER either correct any defective work, whether or not fabricated, installed or completed, or if the work has been rejected by the OWNER, remove it from the site and replace it with non-defective work. If the CONTRACTOR does not correct such defective work or remove and replace such rejected work within a reasonable time, all as specified in a written notice from the OWNER, the OWNER may have the deficiency corrected or the rejected work removed and replaced. All direct or indirect costs of such correction or removal and replacement, including compensation for additional professional services, shall be paid by the CONTRACTOR, and an appropriate deductive Change Order shall be issued. The CONTRACTOR will also bear the expenses of making good all work of others destroyed or damaged by his correction, removal or replacement of his defective work.

Guaranty Period:

- 13.9 If, after the approval of final payment and prior to the expiration of one (1) year after the date of On-Site Substantial Completion or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any work is found to be defective the CONTRACTOR will, promptly without cost to the OWNER and in accordance with the OWNER's written instructions, either correct such defective work, or, if it has been rejected by the OWNER, remove it from the site and replace it with non-defective work. If the CONTRACTOR does not promptly comply with the terms of such instructions, the OWNER may have the defective work corrected or the rejected work removed and replaced, and all direct and indirect costs of such rejected work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, will be paid by the CONTRACTOR.

Acceptance of Defective Work:

- 13.10 If, instead of requiring correction or removal and replacement of defective work, the OWNER prefers to accept it, he may do so. In such case, if acceptance occurs prior to approval of final payment, a Change Order shall be issued incorporating the necessary

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revisions in the Contract Documents, including appropriate reduction in the Contract Price, or, if the acceptance occurs after approval of final payment, an appropriate amount shall be paid by the CONTRACTOR to the OWNER.

Neglected Work by CONTRACTOR:

13.11 If the CONTRACTOR should neglect to prosecute the Work in accordance with the Contract Documents, including any requirements of the progress schedule, the OWNER, after three days written notice to the CONTRACTOR may, without prejudice to any other remedy he may have, make good such deficiencies and the cost thereof (including compensation for additional professional services) shall be charged against the CONTRACTOR if the ENGINEER approves such action, in which case a Change Order shall be issued incorporating the necessary revisions in the Contract Documents including an appropriate reduction in the Contract Price. If the payments then or thereafter due the CONTRACTOR are not sufficient to cover such amount, the CONTRACTOR will pay the difference to the OWNER.

ARTICLE 14 - PAYMENTS AND COMPLETION

Schedule of Values:

14.1 Within ten days of the execution of the Agreement, the CONTRACTOR shall submit a schedule of values of that Work including quantities and unit prices, aggregating the Contract Price. This provision applies to lump sum contracts and to lump sum items in unit price contracts. This schedule shall be satisfactory in form and substance to the OWNER and shall subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Upon approval of the schedule of values by the OWNER, it shall be incorporated into the form of application for payment furnished by the OWNER.

14.2 The date for presentation of monthly applications for progress payments to the OWNER shall be established at the preconstruction conference and will govern all such applications unless modified by the OWNER, which modification shall be made known by written notification to the CONTRACTOR at least twenty days prior thereto. At least ten days prior to the time of monthly presentation to the OWNER, the CONTRACTOR will submit to the Resident Project Representative, the completed application for payment covering Work completed as of the date of the application and supported by such data as the OWNER may reasonably require. The Work for which application for payment is

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made must be complete, in place, and in accordance with the Contract Documents. No payment will be made for any unit on the schedule of values not complete. Nor will any payment be made for materials and equipment stored on the sites and not actually incorporated in the Work.

CONTRACTOR's Warranty of Title:

- 14.3 The CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by an application for payment, will have passed to the OWNER prior to the making of the application for payment, free and clear of all liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as liens), and that no Work, materials or equipment covered by an application for payment will have been acquired by the CONTRACTOR or by any other person performing the Work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or encumbrance thereon is retained by the seller or otherwise imposed by the CONTRACTOR or such other person.

Approval of Payments:

- 14.4 The OWNER will, within ten days after receipt of each partial payment estimate, either indicate in writing his approval of payment or return the partial estimate to the CONTRACTOR indicating in writing his reasons for refusing to approve payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the partial payment estimate. The OWNER will, within 30 days of presentation to him of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate less the retainage.

- 14.4.1 The OWNER will pay ninety-five percent (95%) of the amount due the CONTRACTOR on account of the partial estimate. One half of retained amounts will be paid to the CONTRACTOR upon Overall Substantial Completion of the entire Contract. The remaining retained amount (2.5%) will be paid to the CONTRACTOR at the time of final completion after the presentation of approved as-builts.

- 14.5 The OWNER 's approval of any payment requested in an application for payment shall constitute a representation by the OWNER, based on the on-site observations of the Work in progress as an experienced and qualified design professional and on his review of the application for payment and the supporting data, that the Work has progressed to

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the point indicated, that, to the best of his knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning project upon substantial completion, to the results of any subsequent tests called for in the Contract Documents and any qualifications stated in his approval), and that the CONTRACTOR is entitled to the payment of the amount approved. However, by approving any such payment the OWNER shall not thereby be deemed to have represented that he made exhaustive or continuous on-site inspections to check the quality or the quantity of the Work, or that he has reviewed the means, methods, techniques, sequences, and procedures of construction or that he has made any examination to ascertain how or for what purpose the CONTRACTOR has used the moneys paid or to be paid to him on account of the Contract Price.

14.6 The OWNER's approval of final payment shall constitute an additional representation by him that the conditions precedent to the CONTRACTOR's being entitled to final payment as set forth in paragraph 14.13 have been fulfilled.

14.7 The OWNER may refuse to approve the whole or any part of any payment, if, in his opinion, he is unable to reach such conclusions. He may also refuse to approve any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously approved, to such extent as may be necessary in his opinion to protect the OWNER from loss because:

14.7.1 the Work is defective,

14.7.2 claims have been filed by Subcontractor, vendors or material suppliers, or there is reasonable evidence indicating the probable filing thereof,

14.7.3 the Contract Price has been reduced because of Modifications,

14.7.4 the OWNER has been required to correct defective Work or complete the Work in accordance with paragraph 13.11,

14.7.5 of unsatisfactory prosecution of the Work, including failure to cleanup as required by paragraph 6.29.

Overall Substantial Completion:

14.8 When the CONTRACTOR considers the majority of the Work ready for its intended use

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the CONTRACTOR shall, in writing to the OWNER certify that the entire Work is Overall Substantially Complete and request that the OWNER issue a certificate of Overall Substantial Completion. Within fifteen days thereafter the OWNER and the CONTRACTOR and the ENGINEER shall make an inspection of the Work to determine the status of completion. If the OWNER does not consider the Work Overall Substantially Complete, the OWNER will notify the CONTRACTOR in writing giving his reasons therefor. If the OWNER considers the Work Overall Substantially Complete, the OWNER will prepare and deliver to the CONTRACTOR a certificate of Overall Substantial Completion which shall fix the date of Overall Substantial Completion. There shall be attached to the certificate a detailed list of each and every uncompleted item and a reasonable cost of completion.

14.8.1 At the time of delivery of the certificate of Overall Substantial Completion the OWNER will deliver to the CONTRACTOR a written recommendation as to division of responsibilities pending final payment between the OWNER and the CONTRACTOR.

14.8.2 Within thirty days following the date of Overall Substantial Completion the OWNER shall pay the CONTRACTOR in full, less only two times such amount as is required to complete any then remaining uncompleted items on the list attached to the certificate of Overall Substantial Completion and less half of the total retainage.

14.8.3 Issuance of the Overall Substantial Completion in no way negates the CONTRACTOR's obligation to continue to place STEP assemblies on all the remaining properties for which an easement was 'in hand' prior to the issuance of the Overall Substantial Completion.

14.9 OWNER shall have the right to exclude the CONTRACTOR from the Work after the date of Overall Substantial Completion, but the OWNER shall allow the CONTRACTOR reasonable access to complete or correct items on the list.

On-Site Substantial Completion:

14.10 Throughout the Work (once the off-site sewer mains being constructed by others are deemed substantially complete) CONTRACTOR shall immediately commission all STEP assemblies that are in place and ready to operate and place said properties In-Service. After successfully passing the required 30-day Operating Period (per page 00700-4 and

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page 01010-18 section 3.15E), the OWNER shall issue an On-Site Substantial Completion to the CONTRACTOR for each property placed in service to initiate the one (1) year warranty period beginning the first day of the following calendar quarter (i.e. January 1, April 1, July 1, or October 1).

Final Inspection:

14.11 Upon written notice from the CONTRACTOR that the Project is complete, the ENGINEER will make a final inspection with the OWNER and the CONTRACTOR and will notify the CONTRACTOR in writing of any particulars in which this inspection reveals that the Work is defective. The CONTRACTOR shall immediately make such corrections as are necessary to remedy such defects. The ENGINEER or OWNER will conduct a second inspection to determine whether all corrections identified during the initial final inspection have been completed.

Final Application for Payment:

14.12 After the CONTRACTOR has completed any such corrections to the satisfaction of the ENGINEER or OWNER and delivered all maintenance and operation instructions, schedules, guarantees, bonds, certificates of inspection and other documents, all as required by the Contract Documents, he may make application for final payment following the procedure for progress payments. The final application for payment shall be accompanied by such supporting data as the OWNER may require, together with complete and legally effective releases or waivers, satisfactory to the OWNER, of all liens arising out of the Contract Documents and the labor and services performed and the material and equipment furnished thereunder. In lieu thereof and as approved by the OWNER, the CONTRACTOR may furnish receipts or releases in full, an affidavit of the CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which the OWNER or his property might in any way be responsible, have been paid or otherwise satisfied, and consent of the Surety, if any, to final payment. If any Subcontractor or supplier fails to furnish a release or receipt in full, the CONTRACTOR may furnish a bond satisfactory to the OWNER to indemnify him against any lien.

Approval of Final Payment:

14.13 If, on the basis of his observation and review of the Work during construction, his final

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inspection and his review of the final application for payment, all as required by the Contract Documents, the ENGINEER is satisfied that the Work has been completed and the CONTRACTOR has fulfilled all of his obligations under the Contract Documents, he will, within ten days after receipt of the final application for payment, indicate in writing his approval of payment and present the application to the OWNER for payment. Otherwise, he will return the application to the CONTRACTOR, indicating in writing his reasons for refusing to approve final payment, in which case the CONTRACTOR will make the necessary corrections and resubmit the application. The OWNER will, within thirty days of presentation to him of an approved final application for payment, pay the CONTRACTOR the amount approved by the ENGINEER.

- 14.14 If, after Overall Substantial Completion of the Work, Final Completion thereof is materially delayed through no fault of the CONTRACTOR, the OWNER shall, without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance of Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in paragraph 5.1, the written consent of the Surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the CONTRACTOR to the OWNER prior to certification of such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

CONTRACTOR's Continuing Obligation:

- 14.15 The CONTRACTOR's obligation to perform the Work and complete the Project in accordance with the Contract Documents shall be absolute. Neither approval of any progress or final payment by the OWNER, nor the issuance of a certificate of Overall Substantial Completion, nor any payment by the OWNER to the CONTRACTOR under the Contract Documents, nor any use or occupancy of the Project or any part thereof by the OWNER, nor any act of acceptance by the OWNER nor any failure to do so, nor any correction of defective work by the OWNER shall constitute an acceptance of work not in accordance with the Contract Documents.

Waiver of Claims:

- 14.16 The making and acceptance of final payment shall constitute:

14.16.1 A waiver of all claims by the OWNER against the CONTRACTOR other than

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those arising from unsettled liens, from defective work appearing after final payment or from failure to comply with the requirements of the Contract Documents or the terms of any special guarantees specified therein, and

- 14.16.2 A waiver of all claims by the CONTRACTOR against the OWNER other than those previously made in writing and still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

OWNER May Suspend Work:

- 15.1 The OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to the CONTRACTOR which shall fix the date on which work shall be resumed. The CONTRACTOR will resume the Work on the date so fixed. The CONTRACTOR will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if he makes a claim therefor as provided in Articles 11 and 12.

OWNER May Terminate:

- 15.2 If the CONTRACTOR is adjudged as bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of his property, or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he repeatedly fails to make prompt payments to Subcontractors or for labor, materials or equipment or if he disregards laws, ordinances, rules, regulations or order of any public body having jurisdiction, or if he otherwise violates any provision of the Contract Documents, then the OWNER may, without prejudice to any other right or remedy and after giving the CONTRACTOR and his Surety seven days written notice, terminate the services of the CONTRACTOR and take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by the CONTRACTOR, and finish the Work by whatever method he may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Project, including compensation for additional professional services, such excess shall be paid to the CONTRACTOR. If such costs exceed such unpaid

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balance, the CONTRACTOR will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined and incorporated in a Change Order.

- 15.3 Where the CONTRACTOR's services have been so terminated by the OWNER, said terminations shall not affect any rights of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys by the OWNER due the CONTRACTOR will not release the CONTRACTOR from liability.
- 15.4 Upon seven days written notice to the CONTRACTOR, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Project and terminate the Agreement. In such case, the CONTRACTOR shall be paid for all work executed and any expense sustained plus a reasonable profit for work performed up to the time of termination.

CONTRACTOR May Stop Work or Terminate:

- 15.5 If, through no act or fault of the CONTRACTOR, the Work is suspended for a period of more than ninety days by the OWNER or under an order of court or other public authority, or the OWNER fails to act on any application for payment within thirty days after it is submitted, or the OWNER fails to pay the CONTRACTOR any sum awarded by arbitrators within thirty days of its approval and presentation, then the CONTRACTOR may, upon seven days written notice to the OWNER terminate the Agreement and recover from the OWNER payment for all work performed up to the time of termination and any expense sustained plus a reasonable profit. In addition and in lieu of terminating the Agreement, if the OWNER has failed to act on an application for payment or the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon seven days notice to the OWNER stop the Work until he has been paid for all work performed up to the time of termination.

ARTICLE 16 - ARBITRATION

- 16.1 All claims, disputes and other matters in question between OWNER and CONTRACTOR arising out of, or relating to, the Contract Documents or the breach thereof (except for claims which have been waived by the making or acceptance of final payment as provided by paragraph 14.16) will be decided by mutual agreement by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then obtaining, subject to the limitations of this Article 16. This agreement so to arbitrate and any other agreement or consent to arbitrate entered into accordance

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herewith as provided in this Article 16 will be specifically enforceable under the prevailing law of any court having jurisdiction.

16.1.1 Arbitration hearings shall be held in the county in which the Project is located.

16.2 Notice of the demand for arbitration shall be filed in writing with the other party to the Agreement and with the American Arbitration Association. The demand for arbitration shall be made within the 30-day period specified in paragraph 9.10 where applicable, and in all other cases within a reasonable time after the claim, dispute or other matter in question has arisen, and in no event shall it be made after institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations.

16.3 The CONTRACTOR will carry on the Work and maintain the progress schedule during any arbitration proceedings, unless otherwise agreed by him and the OWNER in writing.

ARTICLE 17 - ASSIGNMENT OF CONTRACT

17.1 The CONTRACTOR shall not assign the Contract or sublet it as a whole without the written permission of the OWNER, nor shall the CONTRACTOR assign any moneys due to him under the Contract, except to a bank or financial institution acceptable to the OWNER, and then only upon the granting by the OWNER of written permission so to do.

ARTICLE 18 - REMOVAL OF EQUIPMENT

18.1 In the case of termination of this Contract, before completion, from any cause whatever, the CONTRACTOR, if notified to do so by the OWNER, shall promptly remove any part or all of his equipment and supplies from the property of the OWNER, failing which the OWNER shall have the right to remove such equipment and supplies at the expense of the CONTRACTOR.

ARTICLE 19 - MISCELLANEOUS

19.1 Whenever any provision of the Contract Documents requires the giving of written notice, it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if

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delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to him who gives the notice.

- 19.2 All Specifications, Drawings and copies thereof furnished by the OWNER shall remain his property. They shall not be used on another project, and with the exception of those sets which have been signed in connection with the execution of the Agreement, shall be returned to him on request upon completion of the Project.
- 19.3 The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon the CONTRACTOR by paragraphs 13.1, 13.9 and 14.3 and the rights and remedies available to the OWNER and ENGINEER thereunder, shall be in addition to and not a limitation of any otherwise imposed or available by law, by special guarantee or other provisions of the Contract Documents.
- 19.4 Should the OWNER or the CONTRACTOR suffer injury or damage to its person or property because of any error, omission or act of the other or of any of his employees or agents or others for whose acts he is legally liable, claim shall be made in writing to the other party within a reasonable time of the first observance of such injury or damage.
- 19.5 The Contract Documents shall be governed by the law of the place of the Project.

END OF SECTION

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SUPPLEMENTAL CONDITIONS

ARTICLE 1 – STEP INSTALLATION RESTRICTIONS

- 1.01 Due to the inherent high water tables present in most of the work zone, all excavation work shall be prohibited from February through April, inclusive. Other work on the site that does not require excavation can be undertaken. Note this restriction does not constitute a 'Suspension' as is discussed within General Condition section 15.1 nor does it constitute a justification for a claim for a Contract Time Extension as is discussed in General Condition 12.2.
- 1.02 Access to each site will typically be via a steel plate supplied by the CONTRACTOR over the roadside swale to protect the property's driveway. Any damage to the swale will be repaired once the steel plate is removed.
- 1.03 Mats will be required to be used on all lawns to protect the lawns from the weight of the excavation equipment and any heavy trucks necessary. Spoil that is not loaded immediately onto trucks will also be required to be stockpiled on mats or tarps.
- 1.04 Mats will be required on all roads and hard driveways (when swale access is not feasible) where tracked equipment is to be moved from one site to another. Any damage to the roads or driveways will be repaired at the CONTRACTOR's expense.
- 1.05 CONTRACTOR is responsible for the final connection between the sewer pressure lateral and the curb-stop to be installed by the Community Mains' contractor. No additional fee will be paid should the CONTRACTOR have to revisit the site to make the street connection or to place the STEP unit in service. Should the curb stop not be in place, CONTRACTOR shall leave sufficient pressure lateral pipe to ensure connection to the curb stop once in place such that no joints in the pressure lateral are required, otherwise the entire length of pressure lateral will need to be replaced. If the curb stop is in place, any damage to the curb stop, or curb stop valve box (including being knocked out of plumb) will be repaired by the CONTRACTOR at no additional cost.
- 1.06 In order to limit conflicts between this STEP installation contract and the contractor installing the collection mains, the project area is divided into three subareas. It is the general intent for the CONTRACTOR to work in one subarea and complete all sites (to the extent possible) for which easements are in hand within that subarea while the collection mains contractor installs the collection mains in another subarea.

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ARTICLE 2 – MINIMIZATION OF HOMEOWNER INCONVENIENCE

2.01 General:

Every effort shall be made to minimize the inconvenience to individual property owners by limiting the frequency and duration of visits to each property. Facility installation, testing, backfill and restoration shall be performed such that it requires the least possible impact on the property.

The intent of these specifications is to suggest the maximum amount of time allowed on individual properties for the STEP assembly installation. The actual process will be developed and mutually agreed to between the OWNER and the CONTRACTOR at the pre-construction meeting:

1. STEP installation – 2 consecutive days - includes test pitting of existing sewer lateral to verify invert at tie-in location and confirm adequate slope of new sewer lateral to the designed placement of the tank, excavation for the STEP tank, placement of bedding stone, installation of the STEP tank, installation of the 4-inch gravity lateral to the immediately adjacent upstream cleanout, installation of risers, leakage testing, backfill and compaction around and on top of the STEP tank, and initial restoration. No excavation without a tank being placed within it that same day will be allowed. During non-working hours, any open excavation not completely backfilled shall be enclosed in a 4-foot tall safety fence barrier installed with metal posts every six feet to prevent a hazard from existing.
2. Services Installation – 1 day – includes running of 1-inch pressure sewer service to right of way line and running the 4-inch gravity lateral from the upstream cleanout to within 3-feet of tie-in point to the existing house sewer lateral. Connection to the curb-stop (to be constructed by others) should be made during this operation should it be in place. If not in place, the CONTRACTOR will have to return to make the connection once in place at no additional cost.
3. Electrical Installation – 1 day – includes installation of control panel and disconnect, running of conduit from control panel to STEP pump splice box, making all connections, and running conduit from control panel to meter for future connection. Note the preference is that the conduit running from the control panel to the STEP tank be located within the same trench as the 4-

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inch lateral, to the extent possible.

4. Electrical Connection – In order to optimize any necessary interface with the power company, this operation to connect the control panel to the meter will be on an as needed basis, however power interruption to any given home shall not exceed 4-hours and Homeowners must be notified by phone or in person 48 hours in advance.
5. Final Sewer Connection – 1 day – includes intercepting the existing home's sewer lateral, connecting the pressure sewer lateral to the curb stop at the right-of-way line (if not completed previously), installation of all STEP components in the tank, and final testing. Note the interruption of service to the house's sewer use is restricted to 4 hours and Homeowners must be notified by phone or in person 48 hours in advance. The final electrical inspection and approval is a pre-requisite for this task.
6. Abandonment of Existing Septic System – 1 day – includes exposing all chambers of the existing septic tank(s), pumping out of all liquid and solid waste, pumping all chambers full of flowable fill, covering the chamber's access, and initial site restoration. The existing tank should be pumped dry and filled with flowable fill at the same time in order to prevent the septic tank from re-filling with groundwater or floating.

2.02 Easements:

Construction easements will be obtained by the OWNER for work on individual properties. While OWNER hopes to have as many easements as possible in hand prior to the issuance of the Notice to Proceed, CONTRACTOR should anticipate being delivered easements throughout the contract period. OWNER will cease forwarding any 'new' easements to the CONTRACTOR either; 1) when they achieve Overall Substantial completion – if achieved prior to the number of days allowed in the Agreement and any time extension(s) granted via change order, or 2) 90 days prior to the last day allowed the CONTRACTOR to achieve Overall Substantial Completion via the Agreement and any time extension(s) granted via change order.

2.03 Site Meetings with Homeowner:

The CONTRACTOR shall set up a meeting with the Homeowner and INSPECTOR prior to performing any work on individual properties. The CONTRACTOR shall verify

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and document the existence, condition, and location of water and wastewater service to the house (i.e., wells and septic tanks) as necessary to perform the intended work.

Upon completion of the work on each property, the INSPECTOR shall set up another meeting with the Homeowner at the site of the completed work. The purpose of this meeting will be to obtain a 'restoration' sign-off from the Homeowner and INSPECTOR at completion, grounds restored, and as-built locations, elevations, etc.

These meetings will be documented via the attached Property Record Sheet which will be maintained by the INSPECTOR.

Failure by the CONTRACTOR to obtain this 'restoration' final sign-off will result in the assessment of a \$500 penalty to be forfeited by the CONTRACTOR if, **in the opinion of the INSPECTOR**, the CONTRACTOR has failed to undertake legitimate, good faith efforts to obtain the Homeowner sign-off.

The INSPECTOR will attend all Homeowner meetings at no cost to the CONTRACTOR.

2.04 Property Record and Consultation:

The CONTRACTOR shall drive stakes as necessary marking the locations of the proposed STEP assembly and the control panel location. The CONTRACTOR shall then digitally video all areas that will be affected by the proposed construction. The video shall begin at the proposed street connection, proceed to the proposed location of the STEP assembly, continue along the proposed path of the gravity service lateral to the point intended to intercept the house lateral. The video shall then record the condition of the area around the existing septic tank. The video shall then record the condition of the existing electric meter, the area around the meter, the proposed path from the meter to the proposed location of the control panel, and the path from the control panel to the location of the proposed STEP assembly.

This recording is to be used to verify that the CONTRACTOR has returned the site to its original condition to the extent possible and to protect the CONTRACTOR from frivolous or false claims by the homeowner. This shall be done for every property with each property being a separate digital file indexed by street address. If, for any reason, the proposed locations should change, the CONTRACTOR shall conduct additional meeting, re-stake, and re-video tape as necessary in accordance with this Section.

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The CONTRACTOR shall provide a color video recorder with sound recording capability, a video player with color television and a qualified operator to record site conditions before and after construction. The CONTRACTOR shall provide all necessary digital files indexed by street address on an external hard drive. The INSPECTOR will retain all record copies and record video files. This work is incidental to the contract and no additional payment will be made.

2.05 Landscaping, Fence, and Property Corners:

All major landscaping, drainage patterns, fence, and property corners shall be saved from permanent impact (unless shown for removal on the plan supplied by the ENGINEER) and restored to original condition. Temporary transplanting and/or replacement with planting soil and fertilizer may be necessary. All planting and drainage activities shall be in accordance with Specification 02485, Finish Grading and Seeding. All landscaping and plant materials shall be restored or replaced in kind in accordance with Specification 2100 Clearing and Grubbing section 3.07. The CONTRACTOR shall perform all surveys and field work in restoring damaged property corners to their original condition and location at no additional cost.

2.06 Driveways, sidewalk and other hardscape:

All driveways, sidewalk, and other hardscape restoration is incidental. Pressure lines and conduit should be 'missiled' and directionally bored under driveways and sidewalks to prevent disturbance. If disturbed, driveway paving (surface and subsurface) material shall be returned to pre-disturbed state. Use of compaction/consolidation equipment may be necessary to prevent post-completion settlement. Drainage pattern shall not be changed permanently. All pavement restoration activities shall be in accordance with Section 02575, Pavement Restoration.

2.07 Warranty:

The CONTRACTOR shall be required to return to the individual properties for maintenance of the restored areas initially until the INSPECTOR is satisfied and periodically throughout the warranty period as needed.

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ARTICLE 3 – EXISTING WELL DAMAGES

- 3.01 Any damage to any well by the CONTRACTOR that has been located and shown on the plans is to be immediately repaired by a licensed well driller or a licensed plumber, as the case may be, at the CONTRACTOR's expense.
- 3.02 CONTRACTOR will be responsible for mitigating the impact to the homeowner via providing potable water to the residence, if the repair is expected to be of a short duration, or placing the displaced residents in a motel, if the repair is expected to be of a long duration (i.e. overnight or longer), at the CONTRACTOR's expense.
- 3.03 Any damage to any water service line is to be immediately repaired by a plumber.

ARTICLE 4 – DISPOSAL OF SEWAGE CONTAMINATED SOILS AND DAMAGE TO EXISTING DRAINFIELD TILES

- 4.01 Should any soils be encountered which appear to be contaminated with sewage, they are to be re-buried on-site in the excavation in which they were encountered and covered with 6-inches of uncontaminated soil. No additional measures are required.
- 4.02 All available information for each property can be accessed via the web site detailed in Article 5. Known or anticipated conflicts between the Work and the existing on-site sewage disposal system are noted on the individual site plans. Additional and unforeseen conflicts may arise given the incomplete nature and/or quality of the Health Department information. No additional compensation will be provided if a conflict arises that is not noted on an individual site plan.
- 4.03 Any damage to any existing active drain field tile lines, or pressure sewer lines, or any other active on-site disposal system components are to be repaired immediately in order to keep the sewer disposal system in operation. Cost of the repair is incidental.
- 4.04 Certain properties, as noted on their individual site plans, will be unable to have their STEP systems installed until the entire sewer system has been placed in operation as the installation of the STEP system will render the existing on-site disposal system inoperable. These sites will require close coordination with the property owner.

ARTICLE 5 – ADDITIONAL PROPERTY INFORMATION

- 5.01 Additional information for each property is available, in the form of photographs and

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health department information on wells and septic system, which is provided to the CONTRACTOR but which is not a formal part of the Contract Documents. The intent of this additional information is to show the CONTRACTOR the myriad conditions they will face as they vary property by property as well as to show, based on the best available information, the location of active drain fields and other on-site disposal components. OWNER makes no representation as to the accuracy of the location and extent of the on-site disposal components and many properties have abandoned, as well as active, on-site disposal systems.

ARTICLE 6 – PUBLIC OUTREACH REQUIREMENTS

- 6.01 CONTRACTOR will need to hold three evening meetings, spread throughout the job, at a venue provided by the OWNER. The intent of the meetings is to inform the residents how the CONTRACTOR intends to implement the improvements on their properties (in general) and answer any questions the citizens may have. The OWNER and ENGINEER will be in attendance at no cost to the CONTRACTOR. These meetings may be videotaped by the OWNER and placed on the OWNER's website for public consumption.
- 6.02 In addition to the provisions listed in the Homeowner Inconvenience section, the CONTRACTOR shall provide to the OWNER at the end of each week a two week 'look-ahead' as to where he intends to install tanks.

ARTICLE 7 - DISPOSAL OF CLEAN SPOIL

- 7.01 The OWNER will provide an area for the proper disposal of, or drying of for re-use, clean spoil generated during the work at its Greenberg Farm nature area should the CONTRACTOR desire to use it. This area is the farm located immediately north of Maryland Road. This area will be available to all three SKI Contractors.
- 7.02 Should the CONTRACTOR desire to use it, he will be responsible for developing and implementing all sediment and erosion control plans and any necessary permits. It is suggested that any interested Contractors share this responsibility.
- 7.03 In the case of conflicts amongst the three SKI Contractors, the STEP Contractor will be given preference as it is believed that contract will generate most of the spoil.
- 7.04 In using this site, CONTRACTOR agrees to comply with the sediment control plan and all directives issued by the MDE sediment control inspector at no cost to the OWNER.

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- 7.05 OWNER will be the sole judge of what constitutes 'clean spoil'. OWNER reserves the right to refuse to allow disposal of any material to which there is a reasonable objection such as, but not limited to, trash contamination, excessive vegetative material, etc.
- 7.06 Neither paving nor concrete rubble may be disposed of at this site.
- 7.07 OWNER makes no representation as to how much spoil can be stored permanently at this site. It is the CONTRACTOR's responsibility to utilize his equipment to maximize the storage capacity of the site.

ARTICLE 8 - SUBSURFACE CONDITIONS

- 8.01 A sub-surface investigation was completed at the Project Site by Kim Engineering, Inc. for the Community Sewer Mains project. As the borings were taken in the road rights of way within the community, this information may be relevant to this contract. The soil boring information is included in Appendix B. Such boring results are only made available in order that CONTRACTOR may have access to the same information available to the OWNER. Any deduction, interpretation, or conclusion drawn therefrom by CONTRACTOR during the bid process as to the sub-surface or latent physical conditions will be entirely at the risk of CONTRACTOR and is not the responsibility of the OWNER.

END OF SECTION

PROPERTY RECORD SHEET

1. Homeowner: _____
Telephone Number: _____
Street Address: _____

2. Pre-Construction Consultation Date: _____
Homeowner In Attendance: _____
Inspector In Attendance: _____
Contractor In Attendance: _____

Issues Noted by Homeowner: (if 'none' so state)

- 1. _____
- 2. _____
- 3. _____

Homeowner OK: _____
Signature Date

3. Video Recording of Property Location (Pre-Construction): _____
Date

4. Post-Construction Consultation Date: _____
Homeowner In Attendance: _____
Inspector In Attendance: _____
Contractor In Attendance: _____

Issues Noted by Homeowner: (if 'none' so state)

- 1. _____
- 2. _____
- 3. _____

Homeowner OK: _____
Signature Date

5. Final Sign-Off at Completion and Grounds Restored:

Issue to Address: _____
1st Return Visit Date _____
2nd Return Visit Date _____

Homeowner Restoration Sign-Off: _____

6. System Start-Up Date: _____ Septic Tank Abandonment Date: _____

System In-Service Date: _____ (1-year warranty begins)

SPECIFICATIONS

CONTRACT NO. SAN 16-01

DIVISION 1 - GENERAL REQUIREMENTS

01010	General Requirements
01151	Measurement and Payment
01590	Construction Facilities

SECTION 01010 - GENERAL REQUIREMENTS

Introduction - The Southern Kent Island Sanitary Project is a failing septic system abatement project which will consist of three construction contracts:

Contract SAN 16-01 – Septic Tank Effluent Pump Installation (to improved properties)

Contract SAN 16-02 – Community Sewer Main Installation

Contract SAN 16-03 – Transmission Main Installation

The work of this contract, Contract No. SAN 16-01, consists of the installation of approximately 775 Septic Tank Effluent Pump (STEP) assemblies to service existing homes. Specifically included is the installation of new 1500-gallon concrete tanks, high-head STEP assemblies, electrical work to power the STEP assemblies from the existing home's electric meter, plumbing work to intercept the existing homes' sewer lateral to the existing septic system and to connect the existing homes to the new STEP assemblies, abandonment of the existing septic tanks, and full restoration of the yards post installation.

PART 1 – GENERAL

1.01 CONTRACT DOCUMENTS

A. The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR consist of the following:

1. Agreement
2. Performance, Payment and Other Bonds
3. General Conditions
4. Supplemental Conditions
5. Other portions of the Project Manual not specifically mentioned above including the specifications, funding agency inserts, and permits.
6. Drawings.
7. Addenda
8. CONTRACTOR's Bid
9. Documentation submitted by CONTRACTOR prior to Notice of Award
10. Any Modification, including Change Orders, duly delivered after execution of Agreement

There are no Contract Documents other than those listed above. The Contract Documents may only be altered, amended or repealed by a Modification (as defined in Article 1 of the General Conditions).

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1.02 GENERAL

- A. The work week will be restricted to Monday through Friday between 8 a.m. and 5 p.m. and will not exceed 40 hours, or extend beyond the above timeframe, without prior approval. Deliveries, which would require disruption to traffic, will be restricted to between 9 a.m. and 3 p.m.
- B. The CONTRACTOR shall provide all materials, labor, equipment, and services necessary for furnishing and installing all lines, sewer appurtenances, dimensions, grades, elevations and types as shown on the approved contract drawings or as directed by the OWNER. CONTRACTOR should anticipate changes to an individual property's design due to unknown site constraints, unknown or inaccurate invert of existing house lateral, etc.
- C. The CONTRACTOR shall submit to the OWNER samples of the various types of materials that are proposed for use in construction of the above mentioned work. These samples must be approved by both parties prior to the initiation of work. During the progress of the work, the OWNER may require that a sufficient number of samples be tested to ascertain the size, type and quality of the actual materials that are being used in construction. The costs of such sampling shall be borne by the CONTRACTOR. Two calendar weeks are to be considered the normal turnover times for each agency's review.
- D. The CONTRACTOR shall submit certification as needed to the OWNER that all items are as specified, particularly as it regards 'Buy American Iron & Steel' provisions.
- E. All materials to be used shall be stored in an approved manner that will protect them from harmful exposure to the elements and the hazards of construction procedures.
- F. As-built drawings shall be the CONTRACTOR's responsibility. During the progress of the work, the CONTRACTOR shall maintain an accurate record of the locations of the piping with reference to job base lines, grades, and elevations. Show all changes made in the piping installation from the layout and/or materials shown on the approved plans or shop drawings. One set of complete as-builts, in both hard copy format and digital format, shall be submitted to the OWNER prior to final acceptance of the project.
- G. Where maintenance of traffic is required, all signs, lights, barricades, etc., shall be erected and maintained by the CONTRACTOR in accordance with Part 4 of the

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SHA's Manual on Uniform Traffic Control.

1.03 SUMMARY OF WORK

- A. The Work of this Project is comprised of the installation of approximately 775 Septic Tank Effluent Pump (STEP) assemblies for each improved property for which an easement has been obtained by the OWNER. The STEP assemblies will reside in new 1500-gallon two-chamber concrete septic tanks, including all electrical and plumbing connections to all improved properties, and the connection of the installed STEP assembly to a curb stop in the street (curb stop to be constructed by others). Work also includes the abandonment of all existing septic tanks, and the full restoration of the yards once construction is complete.
- B. OWNER will provide easements for each property. CONTRACTOR cannot occupy any property for which an easement has not been granted.

1.04 REFERENCED STANDARDS AND SPECIFICATIONS

- A. Where standards, codes or specifications are referred to, the reference is to particular standards, codes or specifications together with all of the latest amendments and errata applicable at the time the bids are taken. The specific codes referred to within these specifications are as follows:

AASHTO	(American Association of State Highway and Transportation Officials)
ANSI	(American National Standards Institute)
ASTM	(American Society of Testing and Materials)
AWWA	(American Water Works Association)
SCS	(USDA Soil Conservation Service)
SHA	(Maryland State Highway Administration)

1.05 GUARANTEES AND CERTIFICATES

- A. During the course of the Work and within 6 weeks after approval of Shop Drawings, CONTRACTOR shall collect and assemble 5 copies each of the

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guarantees, manufacturers' specification sheets and/or working drawings, parts lists including exploded views, recommended safety procedures, and recommended list of spare parts. Submit all copies, with an itemized listing, to the OWNER.

1.06 ADDITIONAL COSTS RESULTING FROM SUBSTITUTE MATERIAL OR EQUIPMENT

- A. Comply with Article 6.7 of the General Conditions regarding substitute material or equipment. Additional costs resulting from installation of approved substitute material or equipment including alterations in connecting piping or conduit, anchor bolts, control systems, or other additional costs, including any necessary re-engineering (if any), attributed to use of the substitute material or equipment shall be the sole responsibility of the CONTRACTOR.
- B. **For consideration of a substitution of the pumping assembly from what has been specified, refer to Specification 02700 for the procedure and data required to have an 'or equal' pump system evaluated. Any such evaluations will be conducted post bid.**

1.07 SCHEDULES

- A. Construction Schedule of Completion:

Within 30 days following Execution of the Agreement, the CONTRACTOR shall submit an overall Construction Schedule for the entire project. This schedule should indicate the anticipated number of sites to be undertaken each month and indicate which of the four stages are to be accomplished:

- 1. Initial tank install
- 2. Pipe/Conduit runs
- 3. Placed in-service
- 4. Final Restoration

In addition to the overall construction schedule, a two month projection schedule shall be required prior to the initiation of any construction and also at each monthly progress meeting showing each crew the CONTRACTOR intends on working, where the CONTRACTOR intends on working (by street address), and what portion of work the CONTRACTOR intends to accomplish. It shall be made

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presentable in both appearance and format, and updated monthly at the normally scheduled progress meeting. The CONTRACTOR and OWNER shall review each site proposed for the upcoming month to try to determine any unknowns, or attempt to address any challenges a site may present prior to occupying the site.

This 2-month construction schedule should indicate the anticipated start and completion dates on a per address basis of the following items of work:

- STEP Tank excavation and installation
- Gravity and pressure pipes
- Control Panel installation
- Start-Up of System
- Abandonment of Existing Septic Tank
- Final Restoration

Construction activities are to be broken into a maximum of 14 calendar days.

No progress payment shall be approved until an acceptable 2-month schedule is received from the CONTRACTOR.

CONTRACTOR is advised of refer to the Geotechnical information provided in Appendix B in reference to the extreme water table issues during the spring months. Groundwater at to near the surface should be anticipated. In accordance with Supplemental Condition Article 1.01, no excavation will be allowed during the months of February through April, inclusive. Consideration of this constraint should be reflected in the schedule.

CONTRACTOR is further advised to refer to the Supplemental Condition Article 2 – Minimization of Homeowner Inconvenience, in developing the schedule.

If updated schedules are not received within the time prescribed, 10% of the succeeding progress payment, in addition to the normal contract retainage, will be withheld until such time as the CONTRACTOR furnishes the required submittals.

All change orders to the contract shall be incorporated in the Schedule in a manner which is consistent with the original logic.

Requested time extension indicated on the project schedule by those individual

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changes shall be approvable only if they impact directly on it's critical sequence.

All contract change orders are subject to terms and conditions of Article 10, 11, and 12 in the General Conditions.

The completion date for construction shall be as specified in the Contract. The CONTRACTOR's Schedule may indicate a construction completion date prior to the completion time specified in the Contract. Any change in the Contract which extends the CONTRACTOR's completion date but does not exceed beyond the Contract completion date shall not be considered justification for additional time or monetary compensation claims by the CONTRACTOR.

If, in the opinion of the OWNER, the CONTRACTOR is not prosecuting the work with such diligence as will ensure completion within the time specified, the OWNER may require the CONTRACTOR to submit a supplemental Schedule. The cost associated with the submission of supplemental schedules will be paid by the CONTRACTOR. The supplemental schedule shall detail the specific operational changes to be instituted to ensure the project will be completed within the time specified.

B. Other Schedules:

Other schedules shall be prepared with a level of detail to identify all submittals, major material and equipment delivery dates

A Payment Draw-Down schedule shall be submitted and revised in a similar manner with the monthly project schedule. If updated schedules are not received within the time prescribed, 10% of the succeeding progress payment, in addition to the normal contract retainage, will be withheld until such time as the CONTRACTOR furnishes the required submittals.

1.08 PERMITS

- A. The CONTRACTOR shall obtain and pay for all permits, certificates of inspection, etc., not previously obtained by the OWNER during the normal project review stages of the project. Permits, certificates of inspection, etc., pertinent to the CONTRACTOR's phase which are required for the actual construction by authorities having jurisdiction over this work shall be delivered to the OWNER before the date of final acceptance of the job.

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- B. The CONTRACTOR shall submit a copy of the electrical permit to the Inspector prior to initiating any electrical work.
- C. Permits obtained, or to be obtained, by OWNER:
 - a. MDE Construction Permit
 - b. Stormwater Management Notice of Intent (NOI)
- D. Permits to be obtained by CONTRACTOR (not intended to be all inclusive):
 - a. Grading Permit
 - b. Zoning Permit (for OWNER's trailer and CONTRACTOR's construction trailer, if any)
 - c. De-watering permit (if any)
 - d. Sediment & Erosion Control (for lay-down yards, etc.)
 - e. Electrical Permits (for each property)
 - f. Other permits as required for the execution of the Work

PART 2 - EXECUTION

2.01 PROCEDURE

- A. Confer and verify with other contractors as to locations and extent of their work, to the end that interferences and deletions between trades are prevented and embedded or required items are installed in conjunction with the work under this contract. Interconnections between work of other contracts shall be made by the CONTRACTOR whose work is erected last unless otherwise specifically stated in the Contract Documents, required by the OWNER or necessitated by the nature or extent of the work.

2.02 WORK SEQUENCE

- A. Construct the Work in stages to provide for public convenience.

Do not close off public use of facilities until completion of one stage of construction will provide alternative usage.

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- B. Conduct construction operations to insure the least inconvenience to the general public as well as the property owner on which the Work is ongoing.
- C. Complete one property, to the extent possible, prior to moving onto the next property. The placing of the STEP unit in service is dependent on actions by others that may impede the CONTRACTOR's ability to place a property in service.
- D. Refer to Supplemental Conditions Article 2 for additional guidance.

2.03 CONTRACTOR'S USE OF PREMISES

- A. Confine construction equipment, the storage of materials and equipment, and operations of workmen to within the permanent and temporary rights-of-way and/or easements.
- B. Assume full responsibility for materials stored on site including materials for which the OWNER has made payment. Purchase and maintain such additional amounts of insurance as is necessary to provide coverage against loss or damage to the materials.

2.04 CLEANING UP

- A. Continuously keep rights-of-way, storage areas, streets, roads, highways and adjacent properties free from accumulations of waste materials, excess excavation, rubbish and windblown debris resulting from construction operations.

2.05 INITIAL OPERATION

- A. Once CONTRACTOR has been formally advised by the OWNER that the off-site pipelines have been constructed, tested, and placed in service, the CONTRACTOR shall concentrate on returning to sites previously visited and placing as many partially completed STEP assemblies in service as is possible. Submit a schedule and sequence of the placement of these sites in service to the OWNER for approval and include it in the Project Schedule. Coordinate the initial operation procedures with other CONTRACTORS and the OWNER's operating personnel.

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2.06 UNDERGROUND EXPLORATION FOR UTILITIES

- A. No underground exploration of utilities will be made for this project prior to the initiation of construction.
- B. The CONTRACTOR shall notify Miss Utility three working days prior to any excavation (1-800-257-7777) as well as any other local utilities not registered with Miss Utility.
- C. The CONTRACTOR shall make whatever exploration he deems necessary to determine the actual conditions and locations of underground utilities. "TEST PIT IF IN DOUBT".
- D. The CONTRACTOR shall be solely responsible for all damage to any marked underground or above ground utilities encountered in any manner during construction and will make immediate repairs to said damaged utilities.

2.07 EXISTING UTILITIES

- A. When crossing and/or working in the vicinity of existing utilities, it will be the CONTRACTOR's responsibility to properly support and maintain the operation of the utilities. Extreme care must be exercised in excavation and refill operation.
- B. The CONTRACTOR will correct at his own expense any damage caused to existing utilities as a result of his operations.

PART 3 - SPECIAL REQUIREMENTS

3.01 PROJECTS COORDINATION

- A. The CONTRACTOR will provide a Field Office for the OWNER's inspection staff.

3.02 SPARE PARTS (refer to Specification 02700)

3.03 LEGAL HOLIDAYS

- A. The CONTRACTOR shall not carry on regular construction activities on Saturdays, Sundays, or legal holidays recognized by the OWNER without the written

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authorization of the OWNER. Requests for working on Saturdays, Sundays, or legal holidays shall be submitted to the OWNER at least seven (7) full days in advance.

- B. The following shall be legal holidays:
 - a. New Year's Day
 - b. Memorial Day
 - c. Independence Day
 - d. Labor Day
 - e. Thanksgiving Day
 - f. Day After Thanksgiving
 - g. Christmas Day

- C. If the CONTRACTOR is approved to work on these holidays, he will pay the applicable holiday wage rate of \$50/hour per inspector for inspection.

3.04 WEEKLY PAYROLL INFORMATION – DAVIS-BACON

- A. Submission of weekly payroll reports are a prerequisite to the CONTRACTOR receiving a progress payment. Payroll reports are to be submitted in accordance with the requirements of the Maryland Water Quality Revolving Loan Fund provisions contained herein.

- B. Weekly payroll information from the CONTRACTOR and every subcontractor that provides any labor on the job must be submitted. A form needs to be submitted each week by the CONTRACTOR and each subcontractor from their first day on the job until the contract is concluded. Therefore, even if no labor was provided by a particular subcontractor for a particular week, a report still needs to be filed stating "none". If the submission is incomplete no payment will be made towards the portion of the job whose report is missing.

- C. Any discrepancies between these contract documents and the funding insert referenced below shall be judged in favor of the insert. Refer to the funding insert entitled:

*REQUIREMENTS AND CONTRACT PROVISIONS FOR THE PROJECT
FINANCED THROUGH THE MARYLAND WATER QUALITY REVOLVING*

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LOAN FUND AND THE MARYLAND DRINKING WATER REVOLVING LOAN FUND - DEPARTMENT OF THE ENVIRONMENT STATE OF MARYLAND, dated February 2016.

3.05 OVERTIME WORK

- A. The CONTRACTOR shall not schedule or carry out regular construction activities to result in a weekly work schedule in excess of 40 hours without the written authorization of the OWNER. Requests for a work period in excess of 40 hours per week should be submitted to the OWNER at least two (2) full days in advance of the start of the workweek.
- B. The CONTRACTOR shall reimburse the OWNER for the added costs of inspection services and any other costs incurred by the OWNER as the result of an overtime work schedule of the CONTRACTOR. The rate of overtime for inspection services is \$50 per hour per inspector.
- C. If and when the OWNER orders the CONTRACTOR to perform work included in the contract outside of regular working hours for the purposes not covered by the contract, the CONTRACTOR shall be paid an extra to the contract price. The payment for such overtime ordered by the OWNER shall be the applicable rate for overtime hours, minus the applicable rate for straight time hours. The CONTRACTOR shall not be entitled to extra compensation for overtime necessary to meet the Construction Schedule of Completion.

3.06 AS-BUILTS

- A. As-builts for each address shall be maintained and submitted to the OWNER monthly once the STEP tank is in place, the pressure and gravity laterals are run, the control panel is set, and the electrical conduit is in place. As-builts should depict the length of each reach of pipe, triangulate the location of each cleanout, and each conduit bend, to foundation corners, and provide offsets of conduit runs from the foundation. The as-built will provide this information in a plan view. As-builts for improvements constructed in any given month shall be presented to the OWNER for review at the succeeding progress meeting.

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3.07 LOCATION AND BOUNDARIES OF WORK

- A. The OWNER shall provide land for the work specified in these Contract Documents and shall provide suitable provisions for ingress and egress. The CONTRACTOR shall not enter on or occupy with men, tools, equipment, or materials any ground outside the property or right-of-way of the OWNER without the written consent of the property OWNER of any such ground. Other CONTRACTORS and employees or agents of the OWNER may, for all necessary purposes, enter upon the work and premises used by the CONTRACTOR and the CONTRACTOR shall conduct his work so as not to impede unnecessarily any work being done by others on or adjacent to the site.
- B. The work shall be constructed in the location shown on the Drawings.
- C. The CONTRACTOR shall be responsible for constructing the work in accordance with siting requirements listed in COMAR 26.04.04.05.B.(2). These require among other things a separation between the well to gravity sewers and pressure sewers to be 10 feet. **In addition there are to be no joints along the pressure sewer lateral within 10-feet of any well.**
- D. The CONTRACTOR shall construct the work generally in the location shown on the Contract Drawings with the exception of a conflict with existing utilities. The CONTRACTOR shall locate said existing utilities, avoid and repair same upon impact with construction activities at no additional cost to the OWNER. Other revisions will be considered if they would lessen damage to existing features.

3.10 SHOP DRAWINGS

- A. Definition:

Shop drawings are generally defined as all fabrication and erection drawings, diagrams, brochures, schedules, bills of material and other data prepared by the CONTRACTOR, his subcontractors, suppliers or manufacturers which illustrate the manufacturer, fabrication, construction and installation of the work, or portion, thereof.

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B. Costs:

All costs necessary for compliance with the requirements of this section of the specifications shall be borne by the CONTRACTOR.

C. Detailed Shop Drawings:

1. Detailed shop drawings, data and literature for fabricated materials or equipment to be incorporated in the work shall be submitted to the OWNER for final approval, for general compliance with the Contract Documents before fabrication. The CONTRACTOR shall obtain and check manufacturer's shop drawings, certified prints and other pertinent data for conformance with all requirements of the Plans and Specifications and in ample time to permit satisfactory progress of the work. After completion of such checking and verification by the CONTRACTOR, the CONTRACTOR shall sign or stamp such drawings, which stamp shall state as follows:

Checked by: _____
(Contractor's Name)

Signed by: _____
(Checker's Name)

2. The CONTRACTOR's signature or stamp shall appear on each copy of each submission.
3. All data, drawings and correspondence from subcontractors, manufacturers or suppliers shall be routed through the CONTRACTOR. The OWNER shall review only such data and details as are transmitted to him by the CONTRACTOR. All correspondence from the CONTRACTOR to the OWNER shall refer to the appropriate section of these Specifications containing the subject matter of the inquiry.
4. Once approved by the OWNER, the OWNER shall stamp the drawings in a manner similar to that shown above.
5. All shop drawings shall be in conformity with all requirements of the plans and specifications. All shop drawings except diagrams, brochures,

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schedules and illustrations shall be to an appropriate scale, no smaller than 1/4 inch = 1.0 foot, and shall give all dimensions necessary for installation and incorporation in the work. All shop drawings shall be accurate and complete, showing outline and section views, details, materials, accessories, appurtenances and related items. Shop drawings showing piping and conduit systems shall incorporate sufficient views to show all fittings and specialties including locations and spacing of hangers and supports.

D. Shop Drawing Submittal:

1. The CONTRACTOR shall submit to the OWNER twelve (12) copies of all shop drawings and submittal data for each and every element of the Work. At least thirty (30) calendar days are to be allowed for the OWNER's review following the date of receipt of each submittal/shop drawing. Six (6) processed copies will be returned to the CONTRACTOR.
2. Upon review and approval by the OWNER of the above drawings, lists, samples, and other data, the same shall become part of the Contract, and the fabrications furnished shall be in conformity with the same; however, the review of the above drawings, lists, specifications, samples or other data shall in no way release the CONTRACTOR from his responsibility for the proper fulfillment by any fabrication, or the requirements of his Contract.
3. Corrections or comments made on the shop drawings during the OWNER's review do not relieve the CONTRACTOR from compliance with the requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. The CONTRACTOR is responsible for conforming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; and in performing his work in a safe manner. If the shop drawings deviate from the Contract Documents, the CONTRACTOR shall advise the OWNER of the deviations, in writing accompanying the shop drawings, including the reasons for the deviations, and shall request a deviation from the Contract Documents. All such deviations must be approved in writing by the OWNER.

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4. The shop drawings are intended to be utilized by the CONTRACTOR for additional fabrication, assembly and erection data. The shop drawings do not change or supersede the Plans and Specifications except in specific cases when the CONTRACTOR requests in writing and receives confirmation in writing for deviation from the Plans and Specifications. The CONTRACTOR's request for a change shall give, in detail, the specific changes requested by the CONTRACTOR and, if accepted by the OWNER, cannot be construed to include acceptance of any change except the changed details specifically requested and accepted.
5. The CONTRACTOR will also submit to the OWNER for review all samples required by the Contract Documents. All samples will have been checked by and stamped with the approval of the CONTRACTOR, identified clearly as to material, manufacturer, and pertinent catalog numbers and the use for which intended.

E. Shop Drawing Approval:

1. The CONTRACTOR's attention is specifically directed to the fact that no work shall be fabricated, nor equipment or materials ordered, nor any construction performed, prior to acceptance by the OWNER of shop drawings applicable thereto.
2. Construction performed in violation of this requirements will not be accepted until applicable shop drawings have been submitted and accepted. If the OWNER so directs, the CONTRACTOR shall disassemble and remove any such construction performed prior to acceptance of shop drawings applicable thereto, and the CONTRACTOR will be allowed no additional compensation nor extension of contract time. If any equipment or materials are ordered by the CONTRACTOR prior to submission and acceptance of shop drawings, he does so at his own risk.
3. It shall be the responsibility of the CONTRACTOR to make all the necessary changes in other items, which result form deviations or changes requested by the CONTRACTOR and accepted by the OWNER, so that all items perform the requirements and intent of the Contract Documents.
4. CONTRACTOR's attention is directed to the Maryland Water Quality

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Revolving Loan Fund provisions as it regards Use of American Iron and Steel. Any shop drawing of a component made in whole or part of iron and/or steel must be accompanied with 'certification asserting that all manufacturing processes occurred in the US' in accordance with the insert's provisions. If the CONTRACTOR intends to submit for a waiver, the waiver request should be sent as soon as possible to avoid the delay of the shop drawing approval.

F. Shop Drawings Format:

1. Shop drawings shall be of standardized sizes to enable the OWNER to maintain a permanent record of the submissions. Approved standard sizes shall be: (a) 24 inches by 36 inches; (b) 11 inches by 17 inches; (c) 11 inches by 8 1/2 inches. Provision shall be made in preparing the shop drawings to provide a binding margin on the left hand side of the sheet. Shop drawings submitted other than as specified herein, may be returned for resubmittal without being reviewed.
2. All copies shall have a clear space next to the CONTRACTOR's signature/stamp, large enough (i.e. 3" by 5") to contain the OWNER's review stamp.

3.11 EQUIPMENT AND INSTALLATION

- A. Every item of equipment, unless otherwise specifically approved by the OWNER, shall be the product of a domestic manufacturer experienced in the design, construction and operation of equipment for the purpose required, and who shall have furnished such equipment long enough to be able to show a record of successful operation.
- B. Ample room for erecting, repairing, inspecting, adjusting and operating all equipment and machinery shall be provided. The design, construction, and installation of all equipment and machinery shall conform to and comply with the latest safety and building codes and regulations.
- C. Inasmuch as the drawings are generally diagrammatical and are drawn to a small scale, it is not possible to indicate on the drawings all fittings or offsets in piping or other specialties required. Where field conditions necessitate a rearrangement,

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the CONTRACTOR shall prepare, and submit for approval, drawings of the proposed rearrangement. The CONTRACTOR shall carefully investigate all conditions affecting the various aspects of the work and shall arrange his work accordingly, furnishing such fittings and specialties as may be required to meet such conditions.

3.12 BORROW PITS OR WASTE AREAS

- A. The CONTRACTOR's attention is directed to the fact that the approval by the Soil Conservation District for the construction of this project does not extend to off-site borrow pits, stockpile areas or waste areas. Prior to commencing any grading operations, the CONTRACTOR shall make application to, and secure a permit from, the Queen Anne's County Department of Planning and Zoning for the operation and grading of any and all borrow pits, stockpile areas or waste areas situated in Queen Anne's County that will be used in conjunction with the project. The permit shall include, but not be limited to, the approval of the Queen Anne's County Soil Conservation District. A copy of said permit shall be provided to the OWNER upon request.
- B. In the event that the CONTRACTOR utilizes borrow pits, stockpile areas or waste areas located outside of Queen Anne's County, the location of such sites shall be designated at the time of contract award and the CONTRACTOR shall be solely responsible for complying with the applicable laws and regulations of such other OWNER or political jurisdiction.
- C. All costs associated with the creation, maintenance, and closure of all borrow pits, stockpile areas, or waste areas, will be borne by the CONTRACTOR.

3.13 BASIC EROSION CONTROL

- A. All soil erosion and sediment controls are to be installed in accordance with the regulations as set forth in the Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas, U.S. Department of Agriculture, Soil Conservation Service as well as the Queen Anne's County Erosion and Sediment Control Ordinance.
- B. In order to minimize transport of earth materials into natural water courses during construction of the project, the CONTRACTOR shall undertake any or all of the

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following measures as directed by the OWNER or a representative of the Department of the Environment's Enforcement Division.

1. Provide temporary stone check dams (3/4" washed gravel) when pumping water from any excavations. All de-watering shall be via a silt bag or other approved method.
2. Remove existing natural or man made earth cover only when actually ready to begin and complete the work requiring it.
3. Replace or provide new, natural, or man made cover immediately after completing work requiring it.
4. All temporary stockpile areas shall be protected by silt fence.
5. Major outfall areas shall be protected by stone check dams prior to initiating excavation activities as shown on the Contract Drawings.
6. Top dress any Stabilized Construction Entrances on a daily or as needed basis with power brooming of any adjacent roadways if necessary due to mud being tracked onto the road.

3.14 MAINTENANCE OF TRAFFIC

- A. Existing roads which fail under construction equipment and/or truck hauling within the subdivision(s) shall be corrected and maintained throughout the Contract time period at no additional costs to the OWNER. CONTRACTOR to repair damaged roads to restore them to the condition prior to the damage.
- B. Construction equipment may not block road travel paths for other than unloading and should then allow one lane of travel.
- C. If conditions warrant, flaggers may be required to ensure the safe flow of traffic at no additional cost to OWNER.

3.15 SEWER SYSTEM START-UP AND OPERATION BY CONTRACTOR

A. Purpose and Scope

The purpose of the start-up and operation by the CONTRACTOR is to start up and operate the sewer system upon the completion and connection to demonstrate that each property is constructed in accordance with the Contract Documents and will operate on a continuous basis (with prescribed care). The CONTRACTOR shall provide all operational planning and expertise, supervision, manpower, maintenance, tools, equipment, spare parts, facilities, incidental materials, periodic reports, and services to operate the complete sewer system for the prescribed period in accordance with the conditions stipulated herein.

B. Readiness to Connect:

Notification to the CONTRACTOR by the OWNER that the off-site pipelines (by others) are substantially complete and ready for operation are a prerequisite to Readiness to Operate. Once so notified, the CONTRACTOR shall then notify the OWNER in writing, of all addresses that are ready to connect and request permission to allow connection of properties. Prior to his request, the CONTRACTOR will satisfy the OWNER during a joint inspection, and by other means if required, that all conveyance facilities are complete and ready to operate.

A final electrical inspection will be a prerequisite to this inspection. All equipment and systems shall have been completed and tested prior to such inspection and all manufacturers' certificates and operating and maintenance manuals shall have been delivered to the OWNER and accepted as satisfactory. The OWNER will respond in writing, authorizing the start up of the property connections or will state reasons why the operation may not commence.

D. Plan of Operation:

1. Once a property is approved to connect, CONTRACTOR shall notify the homeowner of the pending sewer service disruption in accordance with Supplemental Conditions Article 2.
2. CONTRACTOR will ensure the pressure sewer connection has been made, is leak free, and the curb stop is in the 'open' position.

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3. CONTRACTOR will ensure the float operation of the pumping system.
4. CONTRACTOR will then intercept the structure's existing sewer lateral and divert the wastewater into the STEP assembly tank.
5. CONTRACTOR will request the homeowner to create flow to ensure the proper operation of the STEP assembly.

E. Date of Start-Up:

The date of Start-Up will be recorded on the Property Record Sheet as provided in the Supplemental Conditions.

F. Operating Period:

CONTRACTOR will be solely responsible for the operation of each STEP assembly for a period of 30 days from the Date of Start-Up. Any system failure during that 30 days will 'reset' the 30 day period of operation.

F. Maintenance Personnel:

During the operating period, the CONTRACTOR shall provide trained and qualified maintenance personnel to operate the sewer system, accomplish daily maintenance tasks and safeguard all sewer equipment and associated appurtenances against damage from whatever cause. At least two (2) trained and qualified maintenance personnel shall be available for 24 hour emergency services, 7 days a week for the duration of the operating period. The CONTRACTOR shall submit to the OWNER a current phone listing of said personnel. Maintenance personnel shall respond within one (1) hour of notification.

G. Satisfactory Performance:

Satisfactory performance is defined as the particular sewer system at any given property accepting sewage with all equipment and facilities operating satisfactorily for thirty (30) continuous days. At the completion of the Satisfactory Performance period, the system will be considered to have been placed In-Service and that date of In-Service will be recorded on the Property Record Sheet. The In-Service date

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will constitute the On-Site Substantial Completion Date for that property and the 1-year warranty for that property will initiate beginning on the first date of the following quarter, i.e. January 1, April 1, July 1, or October 1.

H. Operating Records:

The CONTRACTOR shall maintain operating, maintenance and logs of any issues for all systems and shall forward operating records to the OWNER weekly.

END OF SECTION

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SECTION 01151 - MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 MEASUREMENT OF QUANTITIES

- A. All work completed under the Contract shall be measured by the Owner's agents according to the standards of weights and measures recognized by the U.S. Bureau of Standards and in the units corresponding to those bid items as presented on the bid form.
- B. The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the Contract will be those methods generally recognized as conforming to good engineering practice.
- C. Unless otherwise specified, measurements for area computations will be made on the surface. Pay measurements for area computations will not exceed the neat dimensions shown on the Contract Drawings, unless otherwise ordered in writing by the Owner.
- D. Structures will be measured according to neat lines shown on the Contract Drawings or as altered to fit field conditions. No payment will be made for length, width, or depth, in excess of that shown on the Contract Drawings or specified in the Specifications for any construction, unless otherwise approved by the Owner in writing.
- E. All items which are measured by the linear foot, such as pipe, will be measured parallel to the base or foundation upon which such structures are placed (i.e. from station to station), unless otherwise shown on the Contract Drawings or specified.
- F. In computing volumes of excavation, the average end area method, based on horizontal measurements, or other acceptable methods, will be used.
- G. The term "each", when used as an item of payment, will mean complete payment for the Work described in the Contract.
- H. The term "lump sum", when used as an item of payment, will mean complete payment for the Work described in the Contract, including all necessary fittings

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and accessories.

1.02 SCOPE OF PAYMENT

- A. The Contractor will receive and accept compensation provided for in the Contract as full payment for furnishing all materials, labor, tools, and equipment and for performing all Work under the Contract in a complete and acceptable manner and for all risk, loss, damage, or expense of whatever character arising out of the nature of the Work or the prosecution thereof, subject to the provisions of the General and Supplemental Conditions.
- B. If any unit price in the Bid Schedule requires that the said unit price cover and be considered compensation for certain work or material essential to the item, this same work or material will not also be measured or paid for under any other pay item which may appear elsewhere in the Specifications.

PART 2 - GENERAL

2.01 CLEARING AND GRUBBING

- A. No measurement will be made.
- B. No additional payment will be made. All costs for clearing and grubbing shall be included in the unit price(s) bid for sewer components and other associated items requiring excavation, backfill, and restoration.

2.02 EXCAVATION FOR STRUCTURES

- A. No measurement will be made.
- B. No additional payment will be made. All costs for excavation for structures will be included in the bid price for items requiring excavation.

2.03 FINISH GRADING AND SEEDING

- A. No measurement will be made.
- B. No additional payment will be made. All costs for finish grading and seeding shall

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be included in the unit price(s) bid for sewer component installation and other associated items requiring excavation, backfill, and restoration. No additional payment will be made for return trips by the Contractor for maintenance of the restoration as directed by the Owner.

2.04 DECK, SIDEWALK AND DRIVEWAY RESTORATION

- A. No measurement will be made.
- B. Any timber structures necessary to be disturbed are to be replaced in kind at no cost.
- C. All restoration of gravel, paved or other hardened surfaces such as patios, etc. shall be incidental to the bid item causing the disruption. Any restoration is to be in accordance with Specification 2575 – Paving Restoration.

2.05 SEDIMENT AND EROSION CONTROL

- A. No measurement will be made.
- B. No additional payment will be made. All costs for sediment and erosion control shall be included in the lump sum bid for Mobilization. This includes temporary seeding and mulching and maintenance and replacement of control measures as require throughout the duration of the job.

2.06 TRENCH EXCAVATION AND BACKFILL

- A. No measurement will be made.
- B. No additional payment will be made. All costs for trench excavation and backfill with native material will be included in the unit prices bid for pipelines and other items requiring trench excavation.
- C. Backfill with select material when so directed by the Owner will be paid at the Contingent Backfill bid item price as bid

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2.07 PIPE FITTINGS

- A. No measurement will be made.
- B. No additional payment will be made. All costs for pipeline fittings will be included in the unit price(s) bid for pipeline.

2.08 CONTINGENT BACKFILL MATERIALS

- A. Shall be measured by multiplying the actual width, up to the maximum payable width, times the actual depth times the length of backfill where select borrow is required and approved by the Owner. Depth shall not be greater than as measured from the bottom of the excavation (or top of the bedding – if any) to the bottom of the necessary 3-inch depth of topsoil (or base course of paving restoration). Maximum payable widths are as follows:

<u>Excavation</u>	<u>Maximum Payable Widths</u>
Gravity Sewer Service Connections	2 feet
STEP Tank	2 feet (around perimeter of tank)
Pressure Sewer Laterals	1 foot

- B. Payment will be made at the fixed price per cubic yard for the material used as backfill when ordered by the Owner. No payment will be made for contingent backfill material placed as a result of native material becoming unsuitable due to acts of the Contractor.
- C. Payment includes costs of disposal of all waste dirt.

2.09 CONTINGENT EXCAVATION BELOW SUBGRADE AND PLACEMENT OF STONE BEDDING

- A. Shall be measured by multiplying the actual width, up to the maximum payable width, times the actual depth times the length of the additional area excavated and replaced with stone bedding as required due to unsuitable material as ordered by the Owner. Depth shall be as measured from the bottom of the excavation to the top of the bedding. Maximum payable widths are as follows:

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Excavation

Maximum Payable Widths

Gravity Sewer Service Connections
STEP Tank

2 feet
tank's dimensions plus 2 feet

- B. Payment will be paid at the fixed unit price per cubic yard for the material removed and replaced with stone bedding when ordered by the Owner. No payment will be made for contingent excavation below subgrade and stone bedding if said excavation is a result of native subgrade becoming unsuitable due to acts of the Contractor.
- C. Payment includes costs of disposal of all waste soil.

2.10 THRUST BLOCKS AND ENCASEMENT

- A. No measurement will be made.
- B. No additional payment will be made. All costs for encasement and for concrete thrust blocks will be included in the unit price(s) bid for the pipelines and force mains.

2.11 PLUMBING WORK

- A. Any bid items which require interfacing with an existing home or business' existing plumbing within the home's foundation must be conducted by a plumber licensed in Queen Anne's County.
- B. Permit and inspection will be provided by OWNER at no cost.

2.12 ELECTRICAL WORK

- A. Any bid items which require any type of electrical work must be conducted by an electrician licensed in Queen Anne's County. In addition to holding an electrical license, electricians working to modify or replace a Delmarva Power meter must be issued an additional certificate from Delmarva Power to do so.
- B. The electrician must pull a Permit from the Queen Anne's County Department of Planning and Zoning.

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- C. Inspection will be conducted by and coordinated with the Queen Anne's County electrical inspector who is the Middle Department Inspection Agency, Inc.
- D. The cost of any Permits, Inspections, and fees charged by Delmarva Power or Middle Department Inspection Agency, Inc. are to be included in the bid item associated with the work.

PART 3 - SEWER PAYMENT ITEMS

ITEM S-1, MOBILIZATION

- A. Mobilization shall consist of initiating the Contract, and may include such portions of the following as are required at the beginning of the project: setting up the Contractor's general plant; field offices; project signs; shops; storage area; sanitary and other facilities as required by the Contract Documents (by local or state law, or by regulation); providing access to the site; obtaining necessary permits and licenses, and payment of fees; protecting existing materials; installing sediment and erosion control measures (if not covered by a separate bid item); providing required insurance and bonds; and providing spare parts.
- B. Payment for Mobilization will be made at the lump sum price bid. The lump sum price bid for mobilization shall be limited to a maximum of five (5%) percent of the total base bid.

The provisions for payment for this item supersede any provisions elsewhere in the Contract Documents for including the costs of these initial services and facilities in the various items scheduled in the bid.

- C. The price bid for mobilization, less retainage, shall be payable to the Contractor in accordance with the following schedule:
 - 1. Fifty percent (50%) of the lump sum price bid for the item "Mobilization" shall be payable to the Contractor as part of the Contractor's first progress payment request.
 - 2. The remaining fifty percent (50%) of the lump sum price bid for the item "Mobilization" shall be payable to the Contractor upon his successful completion of five percent (5%) of the awarded contract work. For

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purposes of this item, five percent (5%) of the work shall be considered completed when the total of payments earned, exclusive of the amount bid for this item and any payments for materials stored, as shown on the monthly certificates of the quantities of work done, equals or exceeds five percent (5%).

ITEM S-2, STEP TANK PLACEMENT

- A. Measurement for payment will be on the basis of the number installed.
- B. Payment will be made at the unit price bid for each Tank installed including clearing & grubbing, excavation, concrete tank (and its placement), hydrostatic testing, access risers, lids, external splice box, backfill, compaction, topsoil, and seed, (in accordance with the detail provided on the drawings).
- C. **Payment also includes the 5-foot section of 4-inch gravity sewer between the tank and the upstream clean-out, as well as the upstream clean-out.**
- D. All surface restoration is incidental – refer to pavement restoration specification if not grass, and finish grading specification if grass.
- E. Payment will also include any return visits to the site to address settlement, and reseeded throughout the contract and warranty period.
- F. Payment shall include the transport and proper disposal or storage of all rejected material unsuitable for backfill and providing suitable, previously dried native backfill material in excavations above subgrade as ordered by the Owner. Select backfill material, if necessary, will be paid under a contingent item.

ITEM S-3, TRAFFIC BEARING STEP TANK MODIFICATIONS

- A. Measurement for payment will be on the basis of the number installed.
- B. Payment will be the **additional cost** to modify the tank in Bid Item S-2 to make the tank traffic bearing in accordance with the detail.
- C. Cost to include heavier lid on the tank, heavier risers, traffic bearing frame and covers, internal splice box, and any other requirements noted in the detail.

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ITEM S-4, SEPTIC TANK EFFLUENT PUMP ASSEMBLY (STEP)

- A. Measurement for payment will be on the basis of the number installed.
- B. Payment will be made at the unit price bid for each STEP Assembly installed including pump vault, pump, floats, filter assembly, and piping within the riser (in accordance with the detail provided on the drawings).
- C. Assemblies cannot be installed until overall sewer system, including off-site sewer line by others, is ready for operation. Once installed the STEP tank and STEP assembly are to be placed into continuous service within 7 calendar days.

ITEM S-5, 4" GRAVITY SEWER LATERALS

- A. Measurement of 4" gravity sewer laterals will be made along the ground surface over the centerline of the pipe from the STEP tank's upstream cleanout to the tie-in to the existing home.
- B. Payment for sewer laterals installed will be made at the unit price bid per linear foot complete in place. Payment will include 4" gravity sewer pipe, fittings, grommets, clearing and grubbing, excavation, excavation support, dewatering, support of other utilities, backfill, surface restoration and testing.
- C. All surface restoration is incidental – refer to pavement restoration specification if not grass, and finish grading specification if grass.
- D. Payment shall include the transport and proper disposal or storage of all rejected material unsuitable for backfill and providing suitable, previously dried native backfill material in excavations above subgrade as ordered by the Owner. Select backfill material, if necessary, will be paid under a contingent item.

ITEM S-6, 4" CLEANOUTS

- A. Measurement of cleanouts will be made on the basis of the number installed excluding the upstream cleanout associated with the installation of the STEP tank.

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- B. Payment will be made at the unit price bid for each cleanout complete in place including pipe, fittings, frame & cover, clearing and grubbing, excavation, excavation support, dewatering, backfill, testing, and all surface restoration.

ITEM S-7, 1" PRESSURE SEWER

- A. Measurement of 1" pressure sewer laterals will be made along the ground surface over the centerline of the pipe to the limits shown on the Contract Drawings.
- B. Payment for pressure sewer laterals installed will be made at the unit price bid per linear foot complete in place. Payment will include seamless 1" pressure sewer pipe, fittings, inserts, stiffeners, grommets, reducers, and any other fittings that may be required, clearing and grubbing, excavation, excavation support, dewatering, support of other utilities, backfill, any surface restoration and testing.
- D. Payment will also include connection of the pressure sewer lateral to the curb-stop assembly to be installed by others. Payment to include a pack joint coupling at curb-stop end of service as well as stainless steel stiffeners on both ends of service line.
- E. No additional payment will be made should Contractor need to return to a particular site to connect to a curb-stop due to the curb-stop not being in place at the time the pressure sewer lateral was installed.
- F. All surface restoration is incidental – refer to pavement restoration specification if not grass, and finish grading specification if grass.
- F. Payment shall include the transport and proper disposal or storage of all rejected material unsuitable for backfill and providing suitable, previously dried native backfill material in excavations above subgrade as ordered by the Owner. Select backfill material, if necessary, will be paid under a contingent item.

ITEM S-8, CONNECT TO EXISTING HOUSE LATERAL

- A. Measurement of connections will be made on the basis of the number installed.
- B. Payment for connecting to existing house laterals will be on the basis of complete in place consisting of cutting the existing lateral, providing a visual inspection of the

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existing lateral, gluing or making another form of water tight connection method of a bend to the existing lateral, and all associated work in making a water tight connection (in accordance with the detail provided on the drawings).

- C. Work may also require replacing pipe back to the foundation of the house (which will be paid under the 4-inch Gravity Sewer Lateral bid item), depending on the type and/or condition of the existing lateral with a connection to the service at the foundation with a Fernco with a stainless steel shear band or other approved method (at no additional cost).
- D. This bid item is in addition to any 4-inch Gravity Sewer Lateral costs and/or 4-inch Cleanout costs.
- E. All surface restoration is incidental – refer to pavement restoration specification if not grass, and finish grading specification if grass.

ITEM S-9, CONTROL PANEL

- A. Measurement of control panels will be made on the basis of the number installed.
- B. Payment for control panels include the panel, placement of and attachment to, timber support members, placement of an electrical service disconnect on the timber members, and wiring with conduit necessary to connect the disconnect to the control panel (in accordance with the detail provided on the drawings).
- C. Payment also includes placement of the required 1” electrical conduit installed from the electric company’s meter to the STEP control panel’s disconnect switch. Payment will include conduit, necessary wires within the conduit (as shown on the detail), terminal connections on both ends, and any other components necessary in accordance with electrical code, manufacturer’s recommendation, and the Contract documents
- D. Payment should include the electrical permit and inspection fee.

ITEM S-10, ELECTRICAL CONDUIT – PANEL to STEP

- A. Measurement of Electrical Conduit – Panel to STEP will be made of the actual length installed from the control panel to the STEP assembly’s external splice box.

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- B. Payment for electrical conduit installed will be made at the unit price bid per linear foot complete in place. Payment will include ¾-inch conduit, necessary wires within the conduit (as shown on the detail), terminal connections on both ends, and any other components necessary in accordance with electrical code, manufacturer's recommendation, and the Contract documents.
- C. All surface restoration is incidental – refer to pavement restoration specification if not grass, and finish grading specification if grass.

ITEM S-11, ELECTRIC METER MODIFICATION

- A. Measurement of existing electric meters to be modified will be made on the basis of the number of existing meters that can be modified.
- B. The work under this item shall also include all labor, materials and equipment necessary. Contractor to investigate existing meter sockets to determine which homes require modification and the type of modification.
- C. Cost includes the cost of electrical permit and any cost charged by the electric company to interrupt service to home. This work must be completed by an electrician licensed in Queen Anne's County who must meet all qualifications detailed in Specification 16000.

ITEM S-12, ELECTRIC METER REPLACEMENT

- A. Measurement of existing electric meters to be replaced will be made on the basis of the number of existing meters that cannot be modified.
- B. The work under this item shall also include all labor, materials and equipment necessary. Contractor to investigate existing meter sockets to determine which homes require new meter sockets.
- C. Cost includes the cost of electrical permit and any cost charged by the electric company to interrupt service to home. This work must be completed by an electrician licensed in Queen Anne's County who must meet all qualifications detailed in Specification 16000.

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- D. Prior approval is required by Owner to verify the need to replace a meter.

ITEM S-13, ADBANDONMENT OF SEPTIC TANKS

- A. Measurement for payment will be on the basis of the number of tanks to be abandoned. Note some properties may have more than one tank.
- B. The work under this item shall also include all labor, materials and equipment necessary to set up and conduct the site meeting with each homeowner; to verify and document the existence, condition and location of the wastewater service to the house including driving stakes as markers for the existing and proposed services and videotaping all areas that will be affected by the proposed construction; to complete and sign the Property Record Sheet; to set up and conduct a site meeting with each homeowner at the completion of the work to obtain the homeowner's approval sign-off of the work. Refer to the Supplemental Condition – Minimization of Homeowner Inconvenience.
- C. Payment will be made at the unit price bid for each septic tank abandoned. Work includes vacuuming out all liquid and solid waste via a certified septage hauler, removal and proper disposal of the lid, 'punching' a hole in the bottom of the tank, filling the tank with clean sand to the tank's soffit, placing topsoil over the tank, and in-kind surface restoration.
- D. There will be no charge for disposal of septage discharged at the Kent Island wastewater treatment plant (310 Bateau Drive). However a manifest must be submitted with the street address of the property.
- E. No additional fee will be allowed if the septic tank has to be pumped out again due to groundwater infiltration and any subsequent disposal at a particular property will be charged \$0.04 per gallon so close coordination with the abandonment of the tanks is encouraged.
- F. Septic tanks cannot be abandoned until STEP assembly is fully operational.
- G. All surface restoration is incidental – refer to pavement restoration specification if not grass, and finish grading specification if grass.

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ITEM S-14, CONTINGENT ELECTRICAL LABOR

- A. Measurement for payment will be on a per hour basis.
- B. The work under this bid item would be for additional work unforeseen and not covered by any of the above bid items. Prior approval will be required.
- C. It is not anticipated that any materials, other than incidental items, would be required. Should material be required, the cost of the material would be reimbursed via a change order.

ITEM S-15, CONTINGENT PLUMBING LABOR

- A. Measurement for payment will be on a per hour basis for the services of a plumber licensed in Queen Anne's County.
- B. The work under this bid item would be for additional work unforeseen and not covered by any of the above bid items.
- C. Possible work being re-routing of plumbing under the home should there be more than one method of waste disposal, and other duties as directed by Owner. Prior approval will be required.
- D. It is not anticipated that any materials, other than incidental items, would be required. Should material be required, other than 4-inch sewer pipe which would be reimbursed at the above bid item rate, the cost of the material would be reimbursed via a change order.

ITEM S-16, CONTINGENT PLUMBING 'SPIN-AROUND'

- A. Measurement for payment will be on a number of 'spin-arounds' accomplished. This work must be done by a plumber licensed in Queen Anne's County.
- B. The work under this bid item would be to 'spin-around' the main waste drain under the house to redirect the flow out to another side of the house in order to reduce or eliminate conflicts on the property with the existing system, if so directed by the Owner. Prior approval will be required.

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- C. Cost should include the labor to affect the 'spin-around'; the materials required for the 'spin-around' itself, as well the penetration through the foundation or footer. Cost of any 4-inch pipe will be reimbursed at the above bid item cost. No additional material cost will be reimbursed.

ITEM S-17, CONTINGENT NON-REINFORCED CONCRETE

- A. This item of work shall consist of furnishing and placing non-reinforced concrete as ordered by the Owner at all areas of the work in addition to that shown on the Drawings, specified or included in other pay items.
- B. Measurement under this item will be made on the basis of the actual number of cubic yards of additional unreinforced concrete poured as ordered by the Owner and measured in place.
- C. Payment for work completed under this item will be made at the fixed unit price for contingent non-reinforced concrete which shall constitute full payment for all formwork, concrete, extra excavation, excavation support, dewatering, pouring, curing, stripping of forms and incidentals required to complete the work.

ITEM S-18, CONTINGENT BACKFILL WITH SELECT MATERIAL

- A. The work under this item shall include providing select material fill in excavations above subgrade as ordered by the Owner. Work shown on the Drawings, specified, or included under other pay items will not be paid under this item.
- B. Measurement under this item will be made on the basis of the actual depth and length as measured by the size of the excavation for a payable width as defined in Part 2 of this section as it regards contingent items.
- C. Payment for work completed under this item will be made at the fixed unit price for trench backfill with select material which shall include the furnishing, placing, compaction to specified limits, and incidentals required to complete the work.
- D. Payment shall include the transport and proper disposal or storage of all rejected material unsuitable for backfill.

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ITEM S-19, CONTINGENT EXCAVATION BELOW SUBGRADE AND PLACEMENT OF STONE BEDDING

- A. The work under this item shall include the excavation of unsuitable materials below subgrade in excavations and replacement with #57 stone bedding as ordered by the Owner. Work shown on the Drawings, specified, or included under other pay items will not be paid under this item.
- B. Measurement under this item will be made on the basis of the actual depth and length as measured by the size of the additional excavation and stone bedding for a payable width as defined in Part 2 of this section as it regards contingent items.
- C. Payment for work completed under this item will be made at the fixed unit price for excavation, excavation support, dewatering, furnishing, placing, compaction and incidentals required to complete the work.
- D. Payment shall include the transport and proper disposal or storage of all rejected material unsuitable for backfill.

ITEM S-20, CONTINGENT FLOWABLE FILL

- A. This payment item is in addition to Payment Item S-13, Abandonment of Septic Tanks. This payment item is only to be used when the typical methods to abandon the septic tanks cannot be applied, typically due to conflicts with other structures on the property.
- B. Measurement for payment will be on the basis of the actual volume of flowable fill used.

ITEM S-21, CONTINGENT SEPTIC TANK REMOVAL

- A. This payment item is in addition to Payment Item S-2, Placement of STEP Tanks. This payment item is only to be used when an existing septic tank must be removed in order to place the STEP tank due to site constraints.
- B. Measurement for payment will be on the basis of the actual number of tanks removed.

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- C. Cost includes all labor and equipment to excavate the tank and remove it to an off-site location for proper disposal.

END OF SECTION

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SECTION 01590 - CONSTRUCTION FACILITIES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Work of this Section includes, but is not limited to:
 - 1. Field Office
 - 2. Project Identification Signs
- B. Applicable Standard Details:
 - 1. Construction Site Sign Detail – refer to Maryland Funding Insert – page 30
 - 2. Field Office Sign Detail – see below specifications

1.02 SUBMITTALS

- A. Drawings:
 - 1. Before installation, submit sketch of Owner's Field Office showing suggested location of office and interior location of major furniture and furnishings, for Owner's review and approval.

PART 2 – PRODUCTS - Not Used

PART 3 - EXECUTION

3.01 OWNER'S FIELD OFFICE

- A. The Contractor shall furnish and maintain, from 5 days prior to the start of work at the project site to the date of Owner's approval of final payment, a fully operable separate temporary field office on the construction site for the exclusive use of the Resident Project Representative of the Owner; said field office and equipment shall remain the property of the Contractor. The temporary office shall be positioned on a proper foundation at a location acceptable to the Owner with adjacent parking space for six automobiles. Provide ground surface treatment to facilitate parking and access to the field office.

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- B. Costs of the temporary office, complete as hereinafter provided, including cost of permitting, heat, air-conditioning, lighting, drinking water, and utilities shall be paid by the Contractor and included in the Contract Price.
- C. The temporary field office shall present a neat business-like appearance, be structurally sound and weather tight, and complete with windows with louvered blinds, approved sanitary facilities, ventilation, heating, air-conditioning, overhead lighting, duplex wall outlets, wi-fi service, and telephone service all satisfactory to the Owner. A mobile type office will be acceptable. Port-a-potties will be acceptable sanitary facilities (cost borne by Contractor).
- D. The temporary field office shall be minimum 12' wide and have a minimum of 600 square feet of floor space; private entrance(s) secured with lock and key, each entrance with one UL 40A:10B:C dry chemical fire extinguisher; and be complete with the following items of equipment and furniture:
- 2 30" x 60" Steel 2-pedestal Desk(s) w/locking drawers
 - 1 36" x 60" Drafting Table(s) and Swivel Drafting Stool(s) w/backrest
 - 3 4-Drawer Legal Size File Cabinet(s) w/locking drawers
 - 1 Vertical Plan File Rack (6 holders)
 - 2 Secretarial Posture-back Swivel Chair(s)
 - 1 Desk Top Photocopy – Fax – Scanner Machine
 - 1 36" x 72" Folding Meeting Table(s)
 - 8 Folding Chairs
 - 1 Water Cooler w/instant hot water attachment
 - 1 Refrigerator - Office Size
 - 2 Telephone Instruments w/8' cords & answering machine
 - 1 Electronic Burglar Alarm
- E. All furniture and equipment items shall be clean, serviceable, and satisfactory to the Owner when installed in the field office. Maintenance service, or replacement, for equipment and furniture that become unserviceable during use shall be provided within 24 hours. The Contractor shall ensure a continuous supply of copy paper, toner, etc. for the equipment as well as a continuous supply of sanitary facility paper products.

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- F. The Contractor shall provide telephone service and pay all costs for local telephone calls and service; the Owner will pay all costs for Long Distance telephone calls.
- G. The Contractor shall provide weekly janitorial service including the disposal of trash, cleaning sanitary facilities, vacuuming and/or sweeping floors, dusting tables, desks, chairs, counters, etc.
- H. Contractor will be required to obtain a Zoning Permit for the placement of the trailer.

3.02 PROJECT IDENTIFICATION SIGNS

- A. The Contractor shall provide and maintain project signs. The signs shall be erected at a location of high public visibility as directed by the Owner. The Contractor shall obtain all permits therefore, secure permission for such locations and pay all costs attendant to signs, which cost shall be included in the Contract Price.
- B. The Contractor shall provide the following sign(s):
 - 1. One Construction Site Sign
 - a. Sign shall conform to the details both as to construction, graphic design, colors, and lettering as the below sign and include:
 - (1) Title of Project
 - (2) Name of Owner
 - (3) County Seal
 - (4) County Contact Information
 - (5) Prime Contractor(s)
 - 2. One State of Maryland Department of the Environment Construction Site Sign. Refer to Maryland Revolving Fund Insert.
- C. Remove signs when directed upon completion of construction.

END OF SECTION

SPECIFICATIONS

DIVISION 2 - SITE WORK

02100	Clearing and Grubbing
02220	Excavation for Structures
02221	Trenching, Backfilling and Compacting
02485	Finish Grading, Seeding and Sodding
02575	Paving Restoration
02613	Pressure and Gravity Sewer Pipe
02651	Sewer Testing
02700	Effluent Sewer System
02723	Abandoning Existing Septic Tanks

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SPECIFICATION 02100 - CLEARING AND GRUBBING

PART 1 - GENERAL

1.01 DESCRIPTION

A. The Work of this Specification includes, but is not limited to:

1. Clearing
2. Grubbing
3. Stripping and stockpiling topsoil
4. Debris disposal

B. Related Work specified elsewhere:

1. Specification 02220 - Excavation for Structures
2. Specification 02221 - Trenching
3. Specification 02485 - Finish Grading and Seeding

C. Definitions:

1. Clearing is defined as the removal of trees, brush, down timber, rotten wood, rubbish, any other vegetation, and objectionable material at or above original ground elevation not designated to be saved; clearing also includes removal of fences, walls, guard posts, guard rail, signs, and other obstructions interfering with the proposed work.
2. Grubbing is digging for the removal from below the surface of the natural ground of stumps, roots and stubs, brush, other organic materials' debris, footers, slabs, post bottoms, ground anchors and similar manmade objects.

1.02 JOB CONDITIONS

A. The Contractor may clear and grub (if applicable) only those obstructions within the permanent and construction rights-of-way which prevent or discourage the utility construction activities.

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- B. Obstructions specifically designated to be saved or restored will be marked by the County in the field.
- C. It is the intent of these specifications to maintain minimal disturbance to the existing site and restore construction areas to pre-existing conditions.

1.03 SUBMITTALS

- A. Permits for Disposal of Debris:
 - 1. Arrange for disposal of debris resulting from clearing and grubbing to locations outside the property and obtain written agreements with the owners of the property where the debris will be deposited if not a permitted landfill or rubble fill.
 - 2. Submit two copies of the agreement with each property owner releasing the County from responsibility in connection with the disposal of the debris.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Temporary Fencing:
 - 1. Undamaged picket snow fence, 4' high, formed of wooden slats, tightly woven with wire cable or orange plastic 'safety fencing', 4' high.
 - 2. Soil-set fence posts, studded "T" type, 6' high.
- B. Wood Tree Guards:
 - 1. Wood posts: 2" x 4"
 - 2. Wood stringers: 2" x 2"
- C. Wrapping Materials:
 - 1. Burlap: AASHTO M182, Class 1
 - 2. Krinkle-kraft waterproof paper: 4" width

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- D. Tree Wound Dressing: Antiseptic and waterproof, asphalt base.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Mark areas to be cleared, the areas to be grubbed, and items to be saved with stakes, flags, paint or plastic colored ribbon.
- B. Protect benchmarks, utilities, existing trees, shrubs and other landscape features designated for preservation with temporary fencing or barricades.
- C. No material shall be stored or construction operation carried on within 4-feet of any tree to be saved or within the tree protection fencing.
- D. When a private enclosure fence encroaches on the work area, notify the property owner at least 5 days in advance of the clearing/grubbing operations to permit the owner to make any arrangements as may be necessary for security purposes. Contractor is to then carefully remove the fence, in whole or in part, and neatly pile the materials onto the owner's property, and then replace once construction is complete. Any fence components that are damaged or are otherwise not re-useable are to be replaced in-kind at the Contractor's expense.
- E. Install sediment & erosion control measures as shown on the approved plans or as required by Maryland Department of the Environment personnel.

3.02 UTILITY RELOCATIONS

- A. Inform utility companies, individuals and others owning or controlling facilities or structures within the limits of the work which have to be relocated, adjusted or reconstructed in sufficient time for the utility to organize and perform such work in conjunction with or in advance of the Contractor's operations.

3.03 CLEARING

- A. Confine clearing to within the boundaries shown on the property's associated site plan.

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- B. Fell trees in a manner that will avoid damage to trees, shrubs, and other installations which are to be retained.
- C. Where stumps are not required to be grubbed, flush-cut with ground elevation such that they can be mowed over.

3.04 GRUBBING

- A. Grub areas within the construction limits to remove roots and other objectionable material to a minimum depth of 8".
- B. Remove all stumps within the cleared areas.

3.05 STRIPPING AND STOCKPILING TOPSOIL

- A. Strip topsoil to whatever depth it may occur from areas to be excavated, filled, or graded and stockpile on-site or at a location approved by the County for use in finish grading.
- B. The topsoil is the property of the Owner and shall not be used as backfill.

3.06 DEBRIS DISPOSAL

- A. Trees, logs, branches, brush, stumps, and other debris resulting from clearing and grubbing operations shall become the property of the Contractor and shall be legally disposed of.
- B. Do not deposit or bury on the site debris resulting from the clearing and grubbing work.

3.07 RESTORATION

- A. Repair all injuries to bark, trunk, limbs, and roots of remaining plants by properly dressing, cutting, tracing and painting, using approved arboricultural practices and materials.

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- B. Replace trees, shrubs and plants designated to be saved which are permanently injured or die during the life of the Contract as a result of construction operations with like species.
- C. Remove protective fences, enclosures and guards upon the completion of the project.
- D. Restore fences, guard posts, guard rail, signs and other interferences to the condition equal to that existing before construction operations.

3.08 CLEARING WITHIN CRITICAL AREA

- A. Prior to the removal of any tree, which is 4-inches or greater in diameter at breast height, within the Critical Area (defined as 1,000-feet from any tidal water), the County must be notified so that the trees to be removed can be inventoried for future mitigation. If unclear if within the Critical Area, the County will make that determination.**
- B. Inventory of trees so removed will be maintained by the County and shall be by road name and pipe station.**
- C. County will assume the cost of all mitigation responsibility.**

END OF SPECIFICATION

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SPECIFICATION 02220 - EXCAVATION FOR STRUCTURES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Work of this Specification includes, but is not limited to:

Excavation and Backfill for Structures
Dewatering
Sheeting and Shoring
Site Grading

- B. Related work specified elsewhere:

1. Specification 02100 - Clearing and Grubbing
2. Specification 02221 - Trenching
3. Specification 02485 - Finish Grading and Seeding
4. Specification 02700 – Effluent Sewer

1.02 QUALITY ASSURANCE

- A. Testing Agency:

Compaction testing shall be performed by an independent soils testing laboratory hired by the County. If the results of any test indicate a non-compliance with the requirements of the Drawings the Contractor shall, at the Contractor's expense, correct the condition. The Contractor shall be responsible for the cost of any retesting required due to failure and to show compliance with compaction requirements.

- B. Referenced Standards:

American Society for Testing and Materials (ASTM):

- C33 Specification for Concrete Aggregates
D698 Tests for Moisture-Density Relations of Soils Using 5.5 Lb. Rammer and 12" Drop
D1194 Test for Bearing Capacity of Soil for Static Load on Spread Footings
D1556 Test for Density of Soil-in-Place by the Sand-Cone Method

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1.03 JOB CONDITIONS

- A. The locations shown for utility facilities are approximate. Proceed with caution in the areas of utility facilities and expose them by hand or other excavation methods acceptable to the utility owner. Contact Miss Utility at least 5 working days prior to beginning excavation.
- B. Erect sheeting, shoring, and bracing as necessary for protection of persons, improvements, and excavations.
- C. Furnish and maintain barricades, signs and markings for excavated areas.
- D. Select and install a system of dewatering to accomplish groundwater control in excavations.
- E. Preserve, protect and maintain operable existing drainage ways, drains and sewers.

1.04 SUBMITTALS

- A. Certificates:

If requested, submit a Certificate of Compliance, together with supporting data, from the materials supplier attesting that the composition analysis of backfill materials meet specification requirements.

If requested, submit certified compaction testing results from the soils testing laboratory.

PART 2 - PRODUCTS

2.01 MATERIALS FOR BACKFILLING

- A. Well-graded soil aggregate mixture consisting of Groups SW, SC, and SP soils of the Unified Soils Classification.
- B. Total content of gravel or rock fragments larger than 1/2" shall not exceed 20% by weight of the mass.

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- C. Backfill shall not contain topsoil, organic matter, debris, cinders, or frozen material.

2.02 PERVIOUS MATERIAL

- A. Natural, clean, free-draining sand or gravel conforming to the requirements of ASTM C33 except:

Material passing a No. 100 sieve not to exceed 8%
Material passing a No. 200 sieve not to exceed 5%

2.03 BEDDING MATERIAL

- A. Number 57 stone, or approved equal.

2.04 SOURCE OF MATERIALS

- A. Use materials for fill if they meet the requirements specified herein. If sufficient material meeting these requirements is not available from required excavation, obtain requisite material from other sources.
- B. Use only material which has been approved as to quality, location of source and zone of placement in the fill.
- C. The County has the right to reject material at the job site by visual inspection, pending sampling and testing.

PART 3 - EXECUTION

3.01 EXCAVATION

- A. Excavate to the neat lines or set back lines and grades indicated on the Drawings.
- B. Excavate in sequence and stages which will not subject permanent or temporary structures, installations, or surfaces to unstable conditions.
- C. Excavate as required to provide sufficient working space to permit placing, inspection, and completion of the structures.

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- D. Shape excavations accurately to the cross-sections and grades indicated.
- E. Support the sides of excavations as specified.
- F. Keep excavations free from water.
- G. Where excess excavation is required to remove unsuitable material, carry excavation down to rest on undisturbed soil having a minimum safe bearing capacity of 2,000 pounds per square foot determined by testing soil in accordance with ASTM D1194.
- H. Haul excavated materials to fill, stockpile or disposal locations.

3.02 BLASTING

- A. No blasting will be permitted.

3.03 BACKFILLING STRUCTURES

- A. Do not commence backfilling around any structure until such structure has been examined and approved by the County.
- B. When backfilling against structures and where applicable, place backfill material in equal lifts and to similar elevations on opposite sides of structures in order to equalize opposing horizontal pressures. Place material in uniform increments over fill area.
- C. Protect structures from damage by construction activity, equipment, and vehicles. Repair or replace damaged structures to the satisfaction of the owner.
- D. Lift Thickness Limitations: Place fill in 6" layers of uniform thickness for the entire width so that each layer can be uniformly compacted.
- E. Adjust moisture content of the material to within the specified limits as necessary. Any fill in place that is disturbed by adjustment of moisture shall be re-compacted to the specified range of compaction before placement of the next lift of backfill.

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- F. Leave sheeting and shoring in place as long as possible, compatible with the placing and compacting of backfill.

3.04 DISPOSAL OF EXCAVATED MATERIAL

- A. Surplus excavated materials shall become the property of the Contractor and removed from the project site.

3.05 EMBANKMENT AND FILLS – Not Used

3.06 COMPACTION

- A. Compact each layer of material to 95% of the maximum density at optimum moisture content as determined by ASTM D698, Method D.
- B. Compaction Testing will be conducted by County as necessary in accordance with the testing procedure contained in ASTM D1556.

3.07 ROUGH GRADING

- A. Rough grade to uniform finish contours.

3.08 SHORING, SHEETING AND BRACING

- A. Install shoring, sheeting and bracing to comply with federal, state and local code requirements. Responsibility for the safety of the work, personnel and structures rests solely with the Contractor.
- B. Carry the boom of the support system to depth below the main excavation, adequate to prevent ground movement.
- C. Follow the excavation closely with sheeting and shoring placement. Do not allow the maximum height of the unsheeted excavations to exceed five feet in predominantly clayey soils and three feet in sandy soils.

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- D. Perform excavation for the installation of sheeting carefully to minimize the formation of voids.
- E. If unstable material is encountered during excavation, take measures to contain it in place and prevent ground displacement.
- F. Have sufficient quantity of material on hand at all times for sheeting, shoring, bracing and other operations for the protection of the work and for use in case of accident or emergency.
- G. Use of a manufactured 'manhole box' or other pre-fabricated structure constructed, and approved by the proper regulatory agency, for this purpose will also be allowed.

3.09 SURFACE DRAINAGE

- A. Intercept and divert surface drainage away from the excavation by the use of dikes, curb walls, ditches, pipes, sumps or other means.
- B. Design surface drainage systems so that they do not cause erosion on or off the site, or cause unwanted flow of water.
- C. Remove the surface drainage system when no longer required.
- D. Remove debris and restore the site to original condition.

3.10 DRAINAGE AND DEWATERING OF EXCAVATED AREAS

- A. Provide and maintain ditches to collect surface water and seepage which may enter the excavations and divert the water into a sump so that it can be pumped into drainage channels.
- B. Install a dewatering system to keep excavations dry and free of water. Dewatering system must discharge into an approved de-silting structure as shown on the Contract Drawings.
- C. Maintain continuous and complete effectiveness of the installation at all times.

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- D. Maintain water level below subgrade until concrete work or backfill, or both, have been completed to offset uplift pressures.
- E. Dispose of precipitation and subsurface water clear of the work. Comply with provisions of the Sediment and Erosion Control Plan Rules and Regulations.
- F. During dewatering operations, water discharged to a watercourse must be clear and free of silt, mud and other deleterious materials. Construct and maintain settling ponds or employ sediment bags to prevent stream degradation. Comply with the requirements for dewatering or discharging to a watercourse as required by Federal, state or local codes. Any sediment accumulation in the watercourse or roadside swale is to be completely removed, disposed at an approved site, and the watercourse or swale returned to its pre-existing condition.
- G. Backfill any created drainage ditches, sumps, and settling basins when no longer required with granular material, or other material as approved by the County.
- H. Structures have been designed against uplift due to groundwater when their construction is complete. It shall be the Contractor's responsibility to prevent uplift of the uncompleted structure.

3.11 FINISHING

- A. On completion of the work, finish the site in a neat and presentable condition. Slope areas to provide positive drainage.
- B. Place topsoil and seed all areas disturbed by construction as specified in Specification 02485, Finish Grading and Seeding, unless otherwise indicated.

END OF SPECIFICATION

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SPECIFICATION 02221 - TRENCHING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Work of this Specification includes, but is not limited to:

Trench excavation, backfill and compaction
Support of excavation
Pipe bedding requirements
Control of excavated material
Rough grading
Restoration of unpaved surfaces

- B. Related work specified elsewhere:

Specification 02100 - Clearing and Grubbing
Specification 02220 - Excavation for Structures
Specification 02485 - Finish Grading and Seeding
Specification 02575 - Paving Restoration

- C. Applicable Standard Details:

Pipe Bedding and Concrete Encasement

1.02 QUALITY ASSURANCE

- A. Testing Agency:

Compaction testing shall be performed by an independent soils testing laboratory. If the results of any test indicate a non-compliance with the requirements of the Drawings, the Contractor shall, at the Contractor's expense, correct the condition.

- B. Referenced Standards:

American Society for Testing and Materials (ASTM):

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- D698 Tests for Moisture-Density Relations of Soils
- D1556 Test for Density of Soil-in-Place by the Sand-Cone Method
- D2922 Test for Density of Soil and Soil Aggregate in Place by Nuclear Methods

C. Compaction Testing:

The approved independent soils testing laboratory shall conduct compaction tests as necessary at the direction of the County during backfilling operations.

Determine compaction in areas other than state highways and shoulders by the testing procedure contained in ASTM D1556 or ASTM D2922.

1.03 SUBMITTALS

A. Certificates:

Submit, prior to delivery of the material to the job site, a Statement of Compliance from the materials supplier, together with supporting data, attesting that the composition analysis of pipe bedding and select material backfill materials meet specification requirements. A gradation analysis by an approved laboratory shall be submitted prior to the initial use of the material and additional tests may be requested per each 1000 yards of material if so directed or if there is an obvious change in the quality or appearance of the material. Should a change in source of materials be made during construction, submit a new Statement of Compliance from the new source for approval before the material is delivered to the job site.

Submit certified compaction testing results from the soils testing laboratory.

B. Compaction Equipment List:

Submit a list of all equipment to be utilized for compacting, including the equipment manufacturer's lift thickness limitations for each backfill material employed.

C. Agreements with Property Owners:

Prior to storing or disposing of excavated materials on private property, submit a copy of the written agreement with the property owner.

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1.04 JOB CONDITIONS

A. Control of Traffic:

Employ traffic control measures in accordance with Section 814, Standard Specifications for Construction and Materials, Maryland Department of Transportation, State Highway Administration, January, 1982, or its latest revision.

Site specific traffic control requirements may be issued by the State Highway Administration for any particular project and if so would take precedence.

B. Protection of Existing Utilities and Structures:

Take all precautions and utilize all facilities required to protect existing utilities and structures. Contact "Miss Utility" (1-800-257-7777) at least 5 working days in advance of intent to excavate and give the location of the job site. Request cooperative steps of the Utility and suggestions for procedures to avoid damage to its lines.

Advise each person in physical control of powered equipment used in excavation work of the type and location of utility lines at the job site, the assistance to expect, and procedures to follow to prevent damage.

Immediately report to the Utility and the County any break, leak or other damage to the lines or protective coatings made or discovered during the work and immediately alert the occupants of premises of any emergency created or discovered.

Provide free and safe access to Utility personnel at all times for purposes of maintenance, repair and inspection. Provide support to utility personnel as needed.

PART 2 - PRODUCTS

2.01 PIPE BEDDING MATERIAL

- A. Stone Bedding under pipes, when directed to be placed, shall consist of $\frac{3}{4}$ inch washed gravel conforming to the following gradation requirements, or approved equal:

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<u>Sieve</u>	<u>Percent Passing</u>
1-1/2"	100
1"	90 - 100
2"	25 - 60
No. 4	0 - 10
No. 8	0 - 5

2.02 BACKFILL MATERIAL

A. Borrow for Select Backfill:

1. The uses, classification, characteristics, and definitions of terms for borrow materials obtained shall be in accordance with the requirements of AASHTO M 57, modified: M 145 modified, and M 147 modified. Materials having a dry weight less than 90 pounds per cubic foot, materials with liquid limits in excess of 50, and materials containing detrimental quantities of frozen material, rubbish, boulders in excess of 6 inches, or organic material such as leaves, roots, grass or sewage shall be excluded from use.
2. The method of testing materials shall be in accordance with the requirements of AASHTO T 88 modified; T 89 modified; T 90 modified; and T 99 method C modified.
3. Select backfill shall meet the following gradation:

<u>Sieve</u>	<u>Percent Passing</u>
2"	95 - 100
1"	85 - 100
3/8"	50 - 85
No. 4	35 - 65
No. 10	25 - 50
No. 40	15 - 30
No. 200	5 - 15

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Note: The fraction passing the No. 200 sieve shall not be greater than two-thirds of the fraction passing the No. 40 sieve. The fraction passing No. 40 sieve shall have a liquid limit not greater than 25 and a plasticity index not greater than 6, when tested according to AASHTO T 89 modified and T 90.

2.03 RIP RAP STONE – Not Used

2.04 GAB (Graded Aggregate Base)

- A. GAB shall meet the following gradation requirements:

<u>Sieve</u>	<u>Percent Passing</u>
2"	100
1-1/2"	95 - 100
3/4"	70 - 92
3/8"	50 - 70
No. 4	35 - 55
No. 30	12 - 25
No. 200	0 - 8

2.05 MARKING TAPE

- A. ASTM D2103, ASTM D882, ASTM D2578, ASTM D671
- B. 6" wide, 5.0 mil thick, 50 gauge, metal detectable.
- C. Open trench constructed sewer pipelines shall be identified with green labeled as "sewer".
- D. Refer to Specification 02613 Section 2.03 for execution details

2.06 TRACER WIRE

- A. Tracer wire to be a single strand 8-gauge un-coated copper wire run along with the pipe to aid in future locates.
- B. Refer to Specification 02613 Section 2.03 for execution details.

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PART 3 - EXECUTION

3.01 MAINTENANCE AND PROTECTION OF TRAFFIC

- A. Coordinate the work to ensure the least inconvenience to traffic and maintain traffic in one or more unobstructed lanes unless closing the street is authorized.
- B. Maintain access to all streets and private drives.
- C. Provide and maintain signs, flashing warning lights, barricades, markers, and other protective devices as required to conform with construction operations and to keep traffic flowing with minimum restrictions.
- D. Comply with state and local codes, permits and regulations.
- E. When working within the Maryland State Highway Administration right-of-way, the Contractor shall maintain and protect the traffic as outlined in the applicable SHA construction permit or as directed by SHA.

3.02 CUTTING PAVED SURFACES

- A. Where excavation includes breaking a paved surface, make cuts with a saw in a neat uniform fashion forming straight lines parallel with the centerline of the trench. Cut offsets at right angles to the centerline of the trench. No paving shall be broken except that which has been previously cut..
- B. Protect edges of cut pavement during excavation to prevent raveling or breaking; square edges prior to pavement replacement.
- C. Cost of the restoration of any paved surfaces is incidental – refer to Specification 02575 for details.

3.03 TRENCH EXCAVATION

- A. Topsoil Stripping and Stockpiling:

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Strip topsoil encountered during trench excavation to its full depth and stockpiled for reuse. Installation of water & sewer utilities shall not be accomplished until the site is graded to subgrade limits.

B. Depth of Excavation:

Gravity Pipelines:

Excavate trenches to the depth and grade shown on the profile drawings for the invert of the pipe.

Excavation for laterals shall provide a straight uniform grade from the STEP tank to the interception of the existing home's service lateral.

Pressure Pipelines:

Excavate trenches to the minimum depth necessary and to provide 3'-6" from the top of the pipe to the finish ground elevation, except where specific depths are otherwise indicated on the Drawings.

Excavate to the grade shown for the invert of the pipe and to support the pipe evenly along the barrel.

Where unsuitable bearing material is encountered in the trench bottom, continue excavation until the unsuitable material is removed, or solid bearing is obtained or can be established. Refill the trench to required pipeline grade with pipe bedding material.

Where the Contractor, by error or intent, excavates beyond the minimum required depth, backfill the trench to the required pipeline grade with pipe bedding material at his expense.

Refer to section 3.07 of this specification for more detail on bedding.

C. Width of Excavation:

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Excavate trenches, including laterals, to a width necessary for placing and jointing the pipe and for placing and compacting bedding and backfill around the pipe. (Complying with all safety regulations)

Shape trench walls completely vertical from trench bottom to at least 24" above the top of the pipe.

D. Length of Open Trench:

1. Excavation of all trenches shall be fully completed at least 20 feet in advance of the pipe laying operations. No trench shall be left open over night.

3.04 SUPPORT OF EXCAVATION

- A. Support excavations with sheeting, shoring, and bracing or a "trench box" as required to comply with Federal and State laws and codes. Install adequate excavation supports to prevent ground movement or settlement to adjacent structures, pipelines or utilities. Damage due to settlement because of failure to provide support or through negligence or fault of the Contractor in any other manner, shall be repaired at the Contractor's expense.
- B. Withdraw shoring, bracing, and sheeting as backfilling proceeds unless otherwise directed by the County.

3.05 CONTROL OF EXCAVATED MATERIAL

- A. Keep the ground surface, within a minimum of 2' of both sides of the excavation free of excavated material.
- B. Provide temporary barricades to prevent excavated material from encroaching on private property, walks, gutters, and storm drains.
- C. Maintain accessibility to all fire hydrants, valve pit covers, valve boxes, curb boxes, fire and police call boxes, and other utility controls at all times. Keep gutters clear or provide other satisfactory facilities for street drainage. Do not obstruct natural water courses. Where necessary, provide temporary channels to allow the flow of water either along or across the site of the work.

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3.06 DEWATERING

- A. Keep excavations dry and free of water. Dispose of precipitation and subsurface water clear of the work.
- B. Maintain pipe trenches dry until pipe has been jointed, inspected, and backfilled, and concrete work has been completed. Prevent trench water from entering pipelines under construction.
- C. Intercept and divert surface drainage away from excavations. Maintain storm drainage facilities, gutters, and natural surface water courses open and in operation. Provide and install temporary facilities to maintain excavations free of water as required. Design surface drainage systems so that they do not cause erosion on or off the site, or cause unwanted flow of water. When mechanical equipment is utilized to control water conditions, provide and maintain sufficient standby units on site.
- D. Comply with Federal and State requirements for dewatering to any watercourse, prevention of stream degradation, and erosion and sediment control. Comply with the Sediment and Erosion Control Plan.
- E. The Contractor shall perform dewatering activities ahead of trenching and excavation activities in order to maintain a dry excavation as specified herein.

3.07 PIPE BEDDING REQUIREMENTS

- A. Type I Bedding:

Trenches shall be excavated so as to provide a uniform and continuous bearing and support for the pipe on solid and undisturbed ground. Any part of the trench excavated below specified grade shall be filled with approved materials and compacted. Prepare trench bottom as shown on the Bedding Detail on the Contract Drawings for force main pipelines, water main pipelines and water service connection pipelines unless specified on drawings to be Type III Bedding.

- B. Type III Bedding:

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Trenches shall be excavated to a width necessary to allow proper handling and installation of the pipe in the trench and to a depth sufficient to allow a minimum of 6 inches of 3/4 inch washed gravel, or approved equal, below the pipe invert. Depth of bedding material aggregate as shown on the Bedding Detail on the Drawings.

- C. Shape recesses for the joints or bell of the pipe by hand. Assure that the pipe is supported on the lower quadrant for the entire length of the barrel.

3.08 PIPE LAYING

- A. Lay pipe as specified in the appropriate Section of these Specifications for pipeline construction.

3.09 THRUST RESTRAINT – Not Used

3.10 BACKFILLING TRENCHES

- A. After pipe installation and inspection, backfill trenches from trench bottom or from the top of pipe bedding material, whichever is greater, to 12" above the crown of the pipe with specified backfill material hand placed and carefully compacted with hand-operated mechanical tampers in layers of suitable thickness to provide specified compaction around and under the haunches of the pipe. Backfill and compact the remainder of the trench with specified backfill material.
- B. The Contractor shall refill, re-compact, and maintain all excavations in proper condition at the direction of the County throughout the life of the Contract and guarantee period.
- C. Backfill above the pipe lining in non-traffic bearing areas shall consist of suitable, dry, native material compacted to 85% modified Proctor maximum dry density or select material, when so directed, compacted to 90% modified Proctor maximum dry density.
- D. No backfill shall be installed on frozen surfaces, nor shall frozen materials, snow, or ice shall be placed as backfill.
- E. Exposed Joints for Testing:

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Testing shall be as specified in the Specifications 02651.

F. Lift Thickness Limitations:

Backfill material shall not be placed in lifts exceeding two feet.

Notwithstanding the specified requirements for trench backfill compaction, trenches that settle below the surrounding grade prior to final completion shall be filled to surrounding grade level with appropriate materials.

G. Unsuitable Backfill Material:

Where the County deems backfill material to be unsuitable and rejects all or part thereof due to conditions prevailing at the time of construction, remove the unsuitable material and replace with select material or suitable native material, previously excavated and dried, as directed.

3.11 TRACER WIRE & MARKING TAPE

- A. An inert polyethylene tape having a metallic core shall be placed in the trench at a depth of 18 inches below grade during backfill along the entire length of the trench. Green tape shall be used to mark the sewer lines, blue to mark the water lines.
- B. An uncoated copper wire shall be placed along the invert of the trench, shall extend to grade at any features that come to grade (i.e. division valves, cleanouts, hydrants, etc.) and shall be tested at the completion of the job to ensure the wire provides a 'continuous loop' to allow the entire pipe run to be located from connecting to any one point of the tracer wire. Should the wire not be a continuous loop, Contractor shall take whatever actions as necessary to correct at no expense to the County.
- C. Refer to section 2.05 and 2.06 of this specification and Specification 02613 Section 2.03 for more information of the tape and wire to be used.

3.12 DISPOSAL OF EXCAVATED MATERIAL

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- A. Excavated material remaining after completion of backfilling shall remain the property of the Contractor, removed from the construction area, and legally disposed of at no cost to the County.

3.13 ROUGH GRADING

- A. Rough grade areas disturbed by construction to a uniform finish. Form the bases for terraces, banks, lawns and paved areas.
- B. Grade areas to be paved to depths required for placing sub-base and paving materials. Rough grade areas to be top-soiled and seeded to 3" below indicated finish contours.

3.14 RESTORATION OF SURFACES

- A. Trench surface for paved and non-paved areas shall be restored to original conditions, or better.
- B. All surfaces that exists as grass, is to be restored to grass in accordance with Specification 02485, Finish Grading and Seeding.

END OF SPECIFICATION

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SPECIFICATION 02485 - FINISH GRADING AND SEEDING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The work of this Specification includes, but is not limited to:

Placing topsoil
Soil conditioning
Finish grading
Seeding
Maintenance
Termite control

- B. Related work specified elsewhere:

1. Specification 02100 - Clearing and Grubbing
2. Specification 02220 - Excavation for Structures
3. Specification 02221 - Trenching

1.02 QUALITY ASSURANCE

- A. Soil and soil supplement testing shall be performed by a Soils Testing Laboratory engaged and paid for by the Contractor and approved by the County.

- B. Collect soil samples under the direction of the County.

- C. Reference Standards:

1. Maryland Department of Transportation - Standard Specifications for Construction and Materials, latest version and as Amended.
2. Maryland State Board of Agriculture, "Seed Regulations", as Amended.
3. Requirements of Turf Grass Law and Regulations, Publication No. 41.
4. Maryland Standard Method of Procedure.

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1.03 SUBMITTALS

A. Certificates:

1. Prior to use of placement of material, submit a Statement of Compliance from the materials suppliers, together with supporting data, attesting that the composition of the following products meet specification requirements.
 - a. Topsoil analysis - State pH, texture, and organic content.
 - b. Fertilizer analysis - content and percent of each.
 - c. Lime analysis - content and percent of each.
 - d. Seed mixture(s) - State percentage of mixtures, purity, germination and maximum weed seed content of each grass mixture.
2. If soil tests are performed to justify decreased liming and fertilizer rates, submit certified soil sample analyses, including laboratory's recommended soil supplement formulation.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Seed:

1. Deliver seed fully tagged and in separate packages according to species or seed mix.
2. Seed which has become wet, moldy, or otherwise damaged in transit or storage will not be accepted.

PART 2 - PRODUCTS

2.01 TOPSOIL

- A. All topsoil stripped from the site and stockpiled may be reused provided the following requirements are met:
1. Have a pH of between 6.0 and 7.0; contain not less than 2% nor more than 10% organic matter as determined by AASHTO T194.

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2. Fertile friable loam, sand loam, or clay loam which will hold a ball when squeezed with the hand, but which will crumble shortly after being released.
 3. Free of clods, grass, roots, or other debris harmful to plant growth. Free of pests, pest larvae, and matter toxic to plants.
- B. Any topsoil provided shall be weathered surface soils (A Horizon), or amended unweathered topsoil (B Horizon), or blend of both, free from hard fragments and stones larger than 1" across the greatest dimension, objectionable salts, noxious weeds and plants, partially disintegrated debris, or other materials inferior to the surface soils or that would be toxic or harmful to plant growth.

Grading Analysis:

<u>Sieve</u>	<u>Minimum Percent Passing</u>
2"	100
1/2"	90
1/4"	80
#10	70

2.02 SEED

- A. Fresh, clean, dated material from the last available crop and within the date period specified, with a date of test not more than 9 months prior to the date of sowing.
- B. Percentage of pure seed present shall represent freedom from inert matter and from other seeds distinguishable by their appearance.
- C. All seeds will be subject to analysis and testing.
- D. Seed shall be certified by the Maryland State Board of Agriculture and shall conform to requirements of Maryland Turf Grass law and Regulations, Publication No. 41.
- E. Seed mix shall be in accordance with the Standard Specifications.
- F. Seeding shall be accomplished in accordance with Maryland Department of Transportation Standard Specifications, Section 701.01.03.

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- G. Seed shall comply with Maryland Department of Transportation Standard Specifications, Section 920.04.01.

2.03 FERTILIZER

- A. Liquid formulations may be used in lieu of dry formulations, provided the rate of application is adjusted to apply the same quantities of nitrogen, phosphorus and potassium per unit area as specified for dry formulations.
- B. Fertilizer in accordance with the Standard Specifications and applied in accordance with Section 701.03.08 of the Standard Specifications for Construction and Materials, Maryland Department of Transportation, January 1982, or its most recent revision.
- C. Contractor may submit soils samples to an approved laboratory for fertilizing recommendations. Recommendations shall be submitted to the County for review and decision relating to modifying the application rate as shown in the section below entitled SEEDING REQUIREMENTS.

2.04 LIME

- A. Conform to Section 920.02 of the Standard Specifications for Construction and Materials, Maryland Department of Transportation, January 1982, and applied in accordance with Section 701.03.07, or its most recent revision.
- B. All lime in accordance with application rates shown in the Restoration Table.

2.05 INOCULANT

- A. Inoculate leguminous seed before seeding with nitrogen fixing bacteria culture prepared specifically for the species.
- B. Do not use inoculant later than the date indicated by the manufacturer.
- C. Protect inoculated seed from prolonged exposure to sunlight prior to sowing.
- D. Reinoculate seed not sown within 24 hours following initial inoculation.

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2.06 EROSION CONTROL FABRIC

- A. Shall be a knitted construction of yarn with uniform openings interwoven with strips of biodegradable paper, furnished in rolls with 4 mil opaque polyethylene base as protection for outdoor storage.
- B. Fabric 0.2 pound per square yard.

2.07 JUTE MATTING

- A. Shall be heavy weight, minimum 0-9 pound per square yard, jute mesh with 1" opening.

2.08 FABRIC/MATTING ANCHORS

- A. Staples for fastening fabric to ground shall be minimum 11 gauge wire, "U" shaped, with a 1" crown and 6" legs.

2.09 MULCHING MATERIALS

- A. Hay: This type of mulch shall meet the requirements of specification 920.05.03 of the SHA Standard Specification.
- B. Straw: This mulch shall consist of thoroughly threshed wheat, rye or oat straw.
- C. Mulch Binder: Mulch shall be restrained from movement by such methods as crimping, asphalt binders, cellulose binders, or other methods as approved by the Soil Conservation Service.

PART 3 - EXECUTION

3.01 PLACING TOPSOIL

- A. Place topsoil and spread over the prepared subgrade to obtain the required depth and grade elevation.

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- B. Final compacted thickness of topsoil not less than 3 inches (three inches).
- C. Roller weighing over 120 pounds per foot of width shall not be used for compaction.
- D. Hand rake topsoil and remove all materials unsuitable or harmful to plant growth.
- E. Do not place topsoil when the subgrade is frozen, excessively wet, or extremely dry; do not handle topsoil when frozen or muddy.
- F. Material unsuitable for finish grading which accumulates during spreading and raking shall be removed and legally disposed of off site by Contractor.
- G. Finish surface of topsoil shall be smooth, even and true to lines and grades with no ponding areas.

3.02 TILLAGE

- A. After seed bed areas have been brought to proper compacted elevation, thoroughly loosen to a minimum depth of 5" by disking, harrowing, or other approved methods.
- B. Do not work top-soiled areas when frozen or excessively wet.

3.03 FINISH GRADING

- A. Remove unsuitable material larger than 2" in any dimension.
- B. Uniformly grade surface to the required contours or as directed without the formation of water pockets.
- C. Rework areas which puddle by the addition of topsoil and fertilizer; re-rake.
- D. Distribute starter fertilizer at the rates indicated in the Standard Specifications.
- E. Incorporate starter fertilizer into the upper 1" of soil.

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3.04 SEEDING REQUIREMENTS

- A. All areas disturbed during construction shall be seeded and mulched in strict accordance with the requirements of the Queen Anne's County Soil Conservation District and these specifications, to include seed bed preparation and all incidental work and material to complete the operation. The Contractor shall be responsible to maintain the disturbed area until it has acquired a thick stand of grass and is completely stable to resist erosion.
- B. Seed shall be Kentucky No. 31, spread in accordance with the Specification at 1.5 pounds per 1000 square feet.
- C. Lime shall be ground Dolomite Lime Stone spread at 100 pounds per 1000 square feet.
- D. 10-10-10 Fertilizer shall be spread at 25 pounds per 1000 square feet.
- E. Seeding dates shall be designated as:
 - Spring February 1 to May 1
 - Fall August 1 to November 1
- F. All work completed during the seeding dates will be seeded at that time. All work completed between May 1st and August 15th shall be seeded during the Fall seeding dates. All work completed between November 1st and February 1st shall be seeded during the Spring seeding dates. If construction is performed at a time, other than during the above acceptable dates, the seed bed shall be mulched with straw. The straw shall be cut into the seed bed with a mulch anchor tool.

3.05 MULCHING

- A. Mulching shall be performed in accordance with specification 920.05 of the SHA Standard Specification.

3.06 MAINTENANCE

- A. Contractor shall be responsible for maintenance of seeded work.

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- B. Maintenance includes watering, weeding, cleanup, edging, and repair of settlement, washouts or gullies.
- C. Keep seeded areas wet, close to the saturation point, to a depth of 3" for a period of 10 days following seeding or sodding.
- D. Those areas which do not show a prompt catch or grass within 10 days of seeding or sodding shall be reseeded or re-sodded until complete grass catch occurs.
- E. When the grass reaches an average height of 2-1/2", cut to a height of 1-1/2"; irregularities or depressions which show up at this time shall be leveled and reseeded.
- F. Contractor's maintenance shall continue until all areas are grassed and free from bare spots or off-color areas, and all work under this Contract is complete and accepted.

END OF SPECIFICATION

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SPECIFICATION 02575 - PAVING RESTORATION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The work of this Specification includes, but is not limited to:

Gravel Driveway & Walkway Restoration
Concrete Driveway & Sidewalk Restoration
Asphalt Driveway Restoration
Paver Restoration

- B. Related work specified elsewhere:

Specification 02221 - Trenching
Specification 03310 - Concrete Work

1.02 QUALITY ASSURANCE

- A. Use only materials which are furnished by a bulk bituminous concrete producer regularly engaged in production of hot-mix, hot-laid bituminous asphalt for asphalt repair.
- B. Use only materials which are furnished by a ready-mix concrete producer regularly engaged in the production of concrete.

1.03 TESTING

- A. Once area has been prepped to receive permanent restoration a measurement must be taken prior to placement to ensure the placement of the required depth of the material.

1.04 SUBMITTALS

- A. Certificates:

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Submit a Statement of Compliance, together with supporting data, from bituminous and aggregate suppliers attesting that the materials provided conform to the State specifications.

1.05 JOB CONDITIONS

- A. Control of Traffic: Coordinate the restoration of driveways with the occupants. Prior to permanent restoration, driveways are to be 'patched' with CR-6 to allow their continued use until permanently repaired.

PART 2 - PRODUCTS

2.01 CONCRETE

- A. See Specification 03310

2.02 BITUMINOUS PAVING MATERIALS AND AGGREGATES

- A. Refer to Maryland Department of Transportation, State Highway Administration, Standard Specifications for Construction and Materials - 2001, or its current version. All bituminous materials and aggregates used in paving and resurfacing are designated in these Specifications by, and shall conform to, the applicable portions of the State Specifications.

PART 3 - EXECUTION

3.01 TEMPORARY PAVING

- A. All trenches are to be saw cut prior to excavation.
- B. Place temporary paving, consisting of not less than 6-inches of CR-6, immediately upon completion of trench backfilling. Unpaved trenches shall not remain unpaved longer than 30 working days after backfilling.
- C. Shape and compact subgrade material, then place and compact CR-6 stone base course to the required thickness. Compact to required minimum thickness with trench roller or vibratory plate compactor having minimum 300 pounds per inch-width of compaction roll.

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- D. Continuously maintain temporary paving to the satisfaction of the County.

3.02 DRIVEWAYS

- A. Trim concrete and bituminous driveway surfaces to remove damaged areas. Saw cut straight joint lines parallel to the centerline of the trench. Cut offsets at right angles to the trench centerline. Permanent paving width to be 12-inches wider than trench width (i.e. 6-inch additional on each side).
- B. Restore existing concrete driveways trenched through with a 6" layer of concrete reinforced with 6 x 6 W1.4/W1.4 wire mesh.
- C. Restore existing blacktop driveways trenched through in kind or with minimum 3" bituminous wearing course over 3" layer of CR-6.
- D. Restore earth driveways with a 6" layer of select backfill material.
- E. Restore stone or gravel driveways in kind with a minimum of 4-inches depth.
- F. Restore brick/paver driveways with like bricks/pavers placed on a 4" thick wet sand bed. Place bricks/pavers in like pattern and spacing. Re-use existing brick/pavers to the extent possible.

3.05 CONCRETE SIDEWALK REPAIRS

- A. Replace sidewalks damaged by construction to match existing.
- B. Reconstruct sidewalks to the first expansion joint or control joint on either side of the damaged portion. Install expansion joint material at saw cut locations..
- C. Reconstruct sidewalks to 4" thickness of concrete, reinforced with 6 x 6 W1.4/W1.4 wire mesh, placed on a 2" base of compacted select material (2RC) crushed aggregate.

END OF SPECIFICATION

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SPECIFICATION 02613 - PRESSURE AND GRAVITY SEWER PIPE

PART 1 - GENERAL

1.01 DESCRIPTION

A. The work of this Specification includes, but is not limited to:

1. Pressure sewer service connection pipelines
2. Gravity sewer service connection pipelines and cleanouts.

B. Related work specified elsewhere:

Specification 02221 - Trenching, Backfilling & Compacting
Specification 02615 - HDPE Pipe
Specification 02651 - Sewer Testing

C. Applicable Standard Details

Pipe Bedding & Concrete Encasement
Water Sewer Conflict
Sewer Service Tracer Wire
Gravity Sewer Cleanouts

1.02 QUALITY ASSURANCE

A. Reference Standards:

American Society for Testing and Materials (ASTM):

D1785 Poly Vinyl Chloride (PVC) Plastic Pipe, Schedules 40, 80, and 120
D2466 Poly Vinyl Chloride (PVC) Plastic Pipe Fittings, Schedule 40
D2564 Solvent Cements for Poly Vinyl Chloride (PVC) Pipe and Fittings
D1248-84 Specification for Polyethylene Plastics Molding and Extrusion
Materials.
D3035-93 Standard Specification for Polyethylene (PE) Plastic Pipe
(SDR-PR) Based on Controlled Outside Diameter.

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D3350-93 Standard Specification for Polyethylene Plastic Pipe and Fittings Materials.

F714-94 Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter.

- B. Materials contaminated with gasoline, lubricating oil, liquid or gaseous fuel, aromatic compounds, paint solvent, paint thinner, or acid solder will be rejected.

1.03 SUBMITTALS

- A. Certificates:

Submit each manufacturer's certification attesting that the pipe, pipe fittings, joints, joint gaskets and lubricants meet or exceed specification requirements.

- B. Submit manufacturer's certification that any iron or steel products meet the provisions of Buy American Iron & Steel.**

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Delivery and Handling:

Do not place materials on private property without written permission of the property owner. During loading, transporting and unloading, exercise care to prevent damage to materials. Do not drop pipe or fittings. Avoid shock or damage at all times. Take measures to prevent damage to the exterior surface or internal lining of the pipe.

- B. Storage:

All pipe and fittings shall be stored in accordance with the manufacturer's recommendations. Do not stack pipe higher than recommended by the pipe manufacturer. Store gaskets for mechanical and push-on joints in a cool, dry location out of direct sunlight and not in contact with petroleum products.

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PART 2 - PRODUCTS

2.01 POLYVINYL CHLORIDE (PVC) SEWER PIPE - GRAVITY SEWER.

- A. Schedule 40 PVC **with solvent weld connection**, pressure fittings, pressure couplings and pressure caps. ASTM D1785, D2466, and D2564.
- B. PVC male pipe threads will not be allowed.
- C. PVC cell classification shall be 12454B or 12364C. No cellular core pipe is permitted.
- D. PVC sewer pipe and fittings shall be certified by Factory Mutual, Underwriters Laboratory, and National Sanitation Foundation.
- E. PVC sewer pipe shall be green in color if available.
- F. Allowable pipe deflection for PVC pipe provided under this specification shall be so installed that deflection of no more than 5 percent may be anticipated. Deflection shall be computed by dividing the amount of deflection (normal diameter computed by dividing the amount of deflection (normal diameter less minimum diameter when measured) by the nominal diameter of the pipe. Average deflection between two adjacent manholes shall not exceed 4 percent and no deflection at any point shall exceed 5 percent.

1. If after initial inspection, in the opinion of the County the deflection may appear excessive, he may order the Contractor to arrange for and take accurate measurements of the pipe at whatever intervals and at whatever locations between adjacent manholes deemed advisable.

2. Such measurements may be taken or ordered by the County at any time during the maintenance period and such measurements shall be performed in a manner and by methods approved by the ENGINEER. Sewer pipe will be tested for the maximum 5 percent deflection as per the pipe manufacturer's recommendations utilizing the go/no-go gauge method.

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2.02 POLYETHELENE TUBING – PRESSURE SEWER

- A. Polyethylene (PE) tubing shall have a standard code designation of PE 4710, a pressure class of 200 psi, IPS SIDR-7, as per ASTM D-2239 and shall meet the materials, workmanship, and dimensional, and marking requirements of AWWA C901.
- B. Stainless steel inserts will be required at all joints and fittings.
- C. Tubing shall have a green stripe to designate it as use for sewer.

2.03 TRACER WIRE & MARKING TAPE

- A. All open trench pipe runs shall have an 8 gauge, single strand, bare copper wire run along with the pipe, as well as marking tape, to aid in future locates.
- B. All drilled runs for the pressure lateral are to pull the 8 gauge tracer wire along with the pipe.
- C. Wire for the gravity service shall be run to grade at the cleanout just upstream of the STEP tank and the cleanout nearest the home being served.
- D. Wire for the pressure service will be terminated at the curb stop's lid on the street end, and just outside of the tank riser (taped to the tubing) on the tank end.
- E. Marking tape, in accordance with Specification 02221 shall be installed at a depth of 18 inches within the trench.

2.04 COUPLINGS

- A. Connection of the PE sewer service line to the curb stop placed by others shall require 1-inch to 1-1/4 inch pack joint coupling. Coupling to be Ford C86-54-NL, or approved equal. 'Non-lead' is specified due to ready availability but 'with lead' would be an approved equal.

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- B. Coupling from new 4-inch gravity sewer to existing house sewer may require a Fernco coupling with stainless steel shear band – specify RC 6000 series in order to be AIS compliant.

PART 3 - EXECUTION

3.01 EXCAVATION AND PIPE BEDDING

- A. Perform trench excavation to the line and grade indicated on the Contract Drawings and as specified in Specification 02221.
- B. Unless otherwise indicated on the Contract Drawings, provide for a minimum cover of 3.5 feet above the top of piping laid in trenches.
- D. Assure that the pipe is supported on the lower quadrant for the entire length of the barrel.

3.02 PIPE INSTALLATION

- A. All pipe, valves, fittings, and buttresses shall be installed as specified in AWWA standards C-900, the pipe manufacturer's recommended methods, and as stated herein, unless otherwise specified by the County.
- B. All pipe, valves and fittings shall be thoroughly cleaned and shall be entirely free from grease or oil and substantially free from blacking, dirt, sand, rust, slag or fluxing materials.
- C. All sanitary sewer pressure pipes, fittings and valves to be connected by standard mechanical joints shall be installed by experienced pipe layers to the satisfaction of the County. Prior to making up joints the bells, pipe ends and shall be thoroughly washed with soapy water.
- D. Pipe and fittings shall be moved to the trench, carefully lowered, and set to line and grade. Pipe shall be laid on the subgrade. No blocking will be permitted. No pipe or fitting shall be installed until sufficient trench has been completely excavated to satisfy the County that no unforeseen obstructions of any kind are likely to be encountered. Where it is necessary to raise or lower the pipes due to obstructions or

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other causes, the County shall be notified and the change in grade shall be effected in accordance with details which will be furnished by the County. Said field adjustments will need County approval prior to construction.

- E. Joint deflections shall not exceed maximum deflections stated by the manufacturer for the specified joint and pipe sizes. No pipe shall be cut, nor cut pipe installed, except at the specific direction of the County. In cutting, the ends shall be cut at right angles to the axis and the edges filed to a smooth taper. Special care shall be exercised by the contractor to prevent damage to any pipe.
- G. Before placing in the trench each pipe or fitting shall be carefully cleaned of any foreign substance which may have collected therein and shall be kept clean at all times thereafter. No pipe shall be laid upon a foundation into which frost has penetrated, nor at any time when the County deems there to be a danger of the formation of ice or the penetration of frost at the bottom of the excavation. All requirements regarding the minimum length of open trench and promptness of refilling shall be observed. The open ends of all pipe and fittings in the trench shall be closed to the satisfaction of the County before leaving the work for the night and for all holidays or other times of interruption to the work.
- H. Any excessive settlement of the pipe requiring repairs shall be the sole responsibility of the Contractor (within the limits of the guarantee) and he shall make and do all required work as may be necessary to accomplish the required repairs and return the site to proper condition and appearance.
- I. All trenches, except straight runs of gravity sewer between two manholes, are to have tracer wire place in the invert of the trench and marking tape above the pipe as detailed in Section 2.05 of this specification and Specification 02221 - Trenching.
- J. There are to be no pipe joints within a pressure sewer lateral within 50-feet of a potable water well and laterals without joints need to be kept 10-feet any from any potable water well.

3.03 WYE BRANCHES AND TEES

- A. Install wye branches at locations indicated on the Contract Drawings concurrently with pipe laying operations. Use standard fittings of the same material and joint type

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as the pipeline into which they are installed. Tees will not be permitted for gravity sewer service connection pipelines.

- B. For taps into an existing PVC gravity sewer pipeline, use a PVC wye and couplings to cut in a lateral.

3.04 CRADLES AND ENCASEMENT – Not Used

3.05 THRUST RESTRAINT – Not Used

3.06 DEFLECTION

- A. When it is necessary to deflect pipes from a straight alignment horizontally or vertically, do not exceed limits given by the manufacturer.

3.07 BACKFILLING TRENCHES

- A. Backfill pipeline trenches only after acquiring as-built measurements and examination of the pipe laying by the County.
- B. Backfill trenches as specified in Specification 02221.

3.08 INSTALLATION OF GRAVITY SYSTEM LINE AND CLEANOUTS

- A. Gravity sewers laid to collect and convey the sewage flow shall be Schedule 40 PVC only, with solvent weld connections, from the building to the STEP tank. No cellular core variety pipe shall be allowed.
- B. Gravity sewers serving as service laterals shall be minimum 4" diameter and installed at a 1% slope.
- C. When PVC cannot be solvent welded, a stainless steel shear ring band shall be used with a Fernco, as opposed to a Fernco coupling alone.
- E. All cleanouts shall be of a diameter equal to the size of the pipe it serves, shall be capped with a threaded PVC cap, and protected by a traffic bearing frame and cover

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and set to finished grade. Frame and cover to be East Jordan Iron Works No. 1566, or approved equal.

- F. All cleanout caps shall be PVC and be threaded for simple installation. The cleanout cap shall be installed just below finished grade with access through the traffic bearing frame and cover. The traffic bearing frame and cover shall be supported on concrete or other approved bearing support such that the wheel loading of traffic is not transmitted to the PVC pipe.
- G. Cleanouts of a diameter equal to the size of the pipe they serve shall be installed as follows.
 - 1. every 75 feet of 4-inch straight run pipe
 - 2. upstream of any bends greater than 45 degrees but no more than one per 40 feet
 - 3. just outside the building foundation
- H. Any 90 degree change of direction will be made by using two (2) 45 degree bends with a 1 foot nipple.
- I. All cleanout cap threads shall be sealed with pipe thread tape.
- J. Minimum cover requirements of sewer service laterals in traffic areas such as driveways and parking lots is 3 foot.
- K. All fittings will be PVC as per Section 2.02 of this specification.
- L. No sump pumps, roof drains, yard drains, etc. shall be connected to the gravity sewer lines.
- M. All connections shall meet Queen Anne's County and State of Maryland Plumbing Codes.
- N. All trenches must be dewatered and stabilized at all times. When required approved stone bedding will be used to stabilize all trenches when unstable bedding exists. No trenches shall remain open overnight nor will any trench or pipe be backfilled

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without prior inspection by the County. Any pipe bedding compromised by water shall be removed and replaced with stone or dry bedding material.

- O. Before construction of a lateral connection begins, the invert elevations of the beginning and ending points must be determined to verify that the proper slope can be obtained. A test pit may be required in some cases at the Contractors expense.
- P. When connecting an existing home, the septic tank must be completely disconnected from the house, cleaned out by a permitted septic hauler vacuum truck and backfilled with suitable material as per the State Environmental Health Department Regulations and as previously specified.
- Q. All water and sewer laterals shall maintain a minimum of one (1) foot horizontal separation per Maryland Plumbing Law. The sewer lateral shall be below the water lateral.
- R. Contractor will provide for all sewer laterals constructed a detailed as built drawing showing location of piping with at least two dimensions from fixed points such as building corners, to all fittings and cleanouts. Drawing must indicate either North, South, East, or West.

3.09 INSTALLATION OF PRESSURE SEWER SERVICE LINES

- A. Pressure sewers laid to convey sewage from the STEP assembly to curb stop at right of way line (by others) shall be PE 4710, a pressure class of 200 psi, IPS SIDR-7.
- B. Pressure sewers serving as service laterals shall be minimum 1" diameter and installed at 42-inches below grade. Pressure sewer to reach necessary 42-inches of cover with gradual bend once attached to flexible pipe at STEP tank riser.
- C. No seams or joints will be allowed between the STEP assembly and the curb stop.
- D. Stainless steel stiffeners shall be required and each end of the pressure sewer.
- E. Connection of the pressure sewer to the curb stop will require a pack joint coupling.

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END OF SPECIFICATION

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SPECIFICATION 02651 - SEWER TESTING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The work of this Specification includes, but is not limited to:

Camera inspection of existing gravity sewer pipelines
Low pressure air testing of new gravity sewer pipelines
Hydrostatic testing of new pressure pipelines
Deflection testing of new plastic pipelines

- B. Related work specified elsewhere:

Specification 02610 - Sanitary Sewer Pipe
Specification 02700 – Effluent Sewer System

- C. Applicable Standard Details:

General Notes Sewer

1.02 QUALITY ASSURANCE

- A. Test Acceptance:

1. No test will be accepted until the results are below the specified maximum limits.
2. The Contractor shall determine and correct the causes of test failure and retest until successful test results are achieved. The Contractor shall be responsible for the cost of all testing and retesting.

1.03 SUBMITTALS

- A. Submit the following prior to start of testing:

1. Testing procedures
2. List of test equipment

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3. Testing sequence schedule
4. Provisions for disposal of flushing and test water
5. Certification of test gauge calibration

PART 2 - PRODUCTS

2.01 HYDROSTATIC TEST EQUIPMENT

- A. Hydro pump
- B. Pressure hose
- C. Water meter
- D. Test connections
- E. Pressure relief valve
- F. Pressure gauge – 4-inch liquid filled, calibrated to 1 psi.

PART 3 - EXECUTION

3.01 PIPELINE PREPARATION

- A. Backfill trenches in accordance with Specification 02221 - Trenching.
- B. Provide pressure pipeline with restraint if necessary.
- C. Flush/jet clean pipeline to remove debris; collect and dispose of flushing water and debris. (Repeat as needed)

3.02 EXISTING GRAVITY SEWER LATERAL TESTING

- A. Any portion of the existing gravity sewer laterals that are to be re-used are to be visually inspected to ensure its integrity.
- B. Any structural defect, leak, or other unusual finding observed during the inspection is to be immediately brought to the County's attention. County will direct whether to proceed with the connection to the new work or provide other direction.

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3.03 NEW GRAVITY SEWER LATERAL TESTING

- A. New gravity lines shall be flushed clean and all debris and material removed.

3.04 PRESSURE SEWER TESTING

- A. Pipelines are to be tested in whole from the STEP tank riser pump connection union to the 'closed' curb stop connection at the street.
- B. The line shall be slowly filled with water and the test pressure developed by means of a small power pump at the pump connection riser end. Care should be taken to ensure no air is trapped in the pipe.
- B. After properly filling the line and expelling any air, a pressure test shall be conducted. A test pressure of 150 psi shall be maintained for 15 minutes with no loss. Adequate measuring devices, including a 4 inch face pressure gauge in increments of 1 psi, shall be utilized by the Contractor.
- C. If the line fails, the Contractor will explore for the cause of the leakage, make necessary repairs, and retest the line once repairs are completed.
- E. In addition to the leakage test, the piping shall be visually examined during the test and any leaks discovered repaired.
- F. All fittings must be properly braced before pressure is applied.

3.05 HYDROSTATIC TEST OF STEP TANK

- A. Refer to Section 02700 for testing requirements.

3.06 TRACER WIRE LOOP CONTINUITY TEST

- A. Tracer wire shall be tested once installed to test its continuity. Any gaps in continuity discovered are to be repaired by Contractor

END OF SPECIFICATION

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SECTION 02700
EFFLUENT SEWER SYSTEM

1.01 GENERAL DESCRIPTION

The **MANUFACTURER** shall furnish a complete factory built and tested STEP pump package(s), each consisting of a pump vault, pump, control floats, biotube filter, discharge assembly, ball valve, check valve, splice box, and controls. The pump, control floats, biotube filter, discharge assembly, ball valve, and check valve shall all reside within the pump vault. The vault shall be constructed of a light-weight non-corrosive material and shall be so constructed such that a single individual, without special tools or lifting apparatus, can remove the vault and all of its integral components from the tank and disassemble the primary components on-site.

1.02 OR-EQUAL EVALUATIONS – EFFLUENT PUMP SYSTEM COMPONENTS

- A. Throughout these equipment specifications you will find the term “or approved equal.” For these effluent sewer components, the term “approved equal” shall mean equal in the judgment of the **COUNTY**. Refer to the Instructions to Bidders section for additional information on how ‘or equal’ components are to be handled. Should the **CONTRACTOR** seek approval of a product other than the brand or brands named in these effluent sewer specifications post bid award, it shall furnish written evidence that such product conforms in all respects to the specified requirements, and that it has been used successfully elsewhere under similar conditions. It will not be the responsibility of the **COUNTY** to research, review, or determine equality, nor the responsibility of the **MANUFACTURER** specified within these specifications to provide research, documentation, or data supporting the difference between the “or equal” and the specified product. This will be the sole responsibility of the **CONTRACTOR** seeking the approval.
- B. Where the specified requirements involve conformance to recognized codes or standards, the **CONTRACTOR** shall furnish evidence of such conformance in the form of test or inspection reports, prepared by a recognized agency, and bearing an authorized signature. Manufacturer’s standard data and catalog cut sheets will not be considered sufficient in themselves, and the **COUNTY** will not be responsible for seeking further data from the manufacturer, or for otherwise researching the product. Failure to provide complete data will be cause for rejection of the product. The submission shall include any impacts that could be expected from the alternative product and shall also indicate any product that would require a license or royalty, the actual fees, and a note that these fees would be handled by the **CONTRACTOR**. The **CONTRACTOR** shall provide submissions meeting the above parameters, no less than TWO WEEKS subsequent to being issued a Notice of Intent to Award for review by the **COUNTY**. **CONTRACTORS** seeking approval of “or equal” effluent pump products or systems shall provide, at minimum, the following.
- C. Product/System submittals, including, but not limited to;
- The number of years the **MANUFACTURER** has been in business of manufacturing relevant products/systems. The equipment furnished shall be manufactured and supplied by a company experienced in the design and manufacture of effluent sewer systems. **MANUFACTURERS** shall have at minimum ten (10) years’ experience in the design and manufacture of effluent sewers systems of similar size and equipment specified.

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MANUFACTURERS shall have at minimum of ten (10) successful installations of effluent sewer systems within the continental United States, with each installation having a minimum of one hundred (100) pumps discharging into a common force main.

MANUFACTURER shall have reviewed the entire proposed service area (phases 1 through 4) and verify the pump system proposed can service the entire proposed service area, and convey the sewage from the entire service area to the existing wastewater treatment plant, without the need of any intermediate pump or lift stations.

CONTRACTOR shall submit the following information within two weeks of being issued a Notice of Intent to Award:

- a. Size of company, including
 - 1) Number of employees related to relevant products/systems
 - 2) Number of Engineers on staff related to relevant products/systems
- b. Product specifications and a detailed description of how each product or component is "equal" to the specified product, system, or component. A side by side comparison is required.
 - 1) Equipment/system warranty along with exclusions
 - 2) Performance claims, including, but not limited to;
 - a) Effluent filter design
 - Flow area
 - Surface area
 - Maintenance frequency
 - b) Pump motor description
 - Manufacturer and origin
 - Length of service
 - Number of units in operation
 - Life-cycle cost (repair and replacement frequency)
 - Warranty
 - c) Pump liquid end description
 - Manufacturer and origin
 - Length of service
 - Number of units in operation
 - Life-cycle cost (repair and replacement frequency and cost). Note liquid ends must be removable, repairable, and cleanable.
 - Warranty
 - d) Corrosion resistance

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- e) Pump Lead description
 - Lead must be SOOW, extra heavy duty cord (600V) CSA approved.
- f) Control panel components
 - Manufacturer and origin
 - Length of service
 - Number of units in operation
 - Warranty
 - Enclosure description
- c. Evidence of successfully obtaining approval for a system with similar permit requirements with the regulating authority
- d. Summary of product/system track record and history, including, but not limited to;
 - 1) Number of similarly sized systems
 - 2) Detailed summary of, at minimum, ten (10) similarly sized systems, at least five (5) years old, including, but not limited to;
 - Project name, location, and application
 - Years in operation
 - Current average daily flows and design flows
 - Operator name and contact information (phone & e-mail)
- 1. **CONTRACTOR** shall specify and furnish documentation related to manufacturer (or representative) support services, including, but not limited to;
 - 1) Installation training program and support material
 - 2) Installation oversight program and support material
 - 3) Operator training program and support material
 - 4) Startup services program and support material
- D. Engineer's Cost Reimbursement: Should an 'or equal' system be approved, the costs of any re-design necessary to accommodate the 'or equal' system, if any, will be the responsibility of the **CONTRACTOR** and will be reflected via a deductive change order prior to the first application for payment. It is noted that the entire sewer system is comprised of three construction contracts; this contract as well as the pressure mains servicing each community and the primary transmission main conveying the sewage to the wastewater treatment plant. **CONTRACTOR** will be responsible for any re-design costs associated with these two other contracts as well, if necessary. Note the current connection of the transmission main into the wastewater treatment plant relies on the STEP units to remove solids. Any system proposed without a solids interceptor tank will need to be redesigned to connect at the wastewater plant's headworks.
- E. **CONTRACTOR** may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the plans and specifications has a corporate or financial

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affiliation with the supplier or manufacturer. Owner's officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest in **CONTRACTOR**. Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from **CONTRACTOR** or subcontractors.

1.03 **MANUFACTURER**

The **MANUFACTURER** shall be Orenco Systems, Inc. or approved equal. The **MANUFACTURER** shall furnish a complete factory built STEP pump package(s), each consisting of a pump vault, effluent screen, discharge assembly, anti-siphon valve, ball valve, check valve, splice box, and controls. The **MANUFACTURER** shall supply detailed installation and O&M instructions. The **MANUFACTURER** shall also provide the following support personnel:

- Professional Engineer or personnel under the direct supervision of a Professional Engineer dedicated to supporting the project through design, construction, and O&M.
- Asset Management Department dedicated to assisting operators with operational and maintenance activities.

1.04 **WARRANTY**

The effluent system pump **MANUFACTURER** shall provide a five (5) year warranty for the entire STEP package, including, but not limited to the pump, control floats, pump vault, hose and valve assembly, control panel, and splice box. Warranty term shall ensue after **OWNER'S** acceptance and system startup procedures are complete and the system has been placed in service. The **MANUFACTURER** shall submit detailed exclusions from the warranty or additional cost items required to maintain the equipment in warrantable condition. The warranty shall be documented in product literature.

1.05 **SERVICABILITY**

The STEP package(s) shall be completely serviceable, with easy access to the pump(s), effluent screen, and floats. The pump shall be designed for removal without removing the effluent screen and floats. The vault shall be constructed of a light-weight non-corrosive material and shall be so constructed such that a single individual, without special tools or lifting apparatus, can remove the vault and all of its integral components from the tank and disassemble the primary components on-site.

1.06 **PUMPS**

The pump must be approved for use in pump vault as described in these specifications. Pump shall be 1/2 horsepower, 115 VAC, single phase, 60 Hz, two-wire motor, with 10 foot long extra heavy duty (SOOW) electrical cord with ground. The pumps must be submersible High-Head Effluent pumps. Pumps shall be UL and CSA listed for use with effluent. The pumps must have a minimum 24-hour run dry capability without water lubrication. The pumps shall have a 1/8-inch bypass orifice (or equivalent) to ensure flow circulation for motor cooling and to prevent air bind. The pump shall have a floating impeller design to protect against up thrust and increase pump life. The pump liquid ends must be repairable (by replacing impellers and/or diffusers) for

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better long-term cost of ownership. The motor must be rated for continuous use and frequent cycling, at least 100 cycles per day. The motor cable must be suitable for Class 1, Division 1 and 2 applications. The pumps shall be lightweight for easy removal and maintenance. The pump intake screen must be 1/8-inch mesh polypropylene. The pump shall have internal thermal overload protection and internal lightning protection.

1.07 EXECUTION

1.07.1 **CONTRACTOR** and **INSPECTOR** shall visit each site to determine the location of the proposed tie-in to the existing sewer lateral and the location of the tank. **CONTRACTOR** shall determine grade at the point of the tie-in to the existing sewer lateral and the location of the tank. **CONTRACTOR** shall then expose the existing sewer lateral at the proposed point of tie-in and determine its invert. Utilizing a 1% slope, **CONTRACTOR** shall demonstrate that the tank as designed will provide an invert of the 4-inch lateral into the tank to be 36-inches or less. If the invert is greater than 36-inches, **CONTRACTOR** shall review the information with the **INSPECTOR** and either move the tank or agree to accept the greater invert. Note the minimum allowable cover over the tank is 24-inches to resist floatation.

1.07.2 **CONTRACTOR** shall excavate for the tank, set the tank, and then leak test the tank.

1.07.3 Should the tank pass the leak test, **CONTRACTOR** can remove some water as necessary to continue attaching the risers, etc. However as much water as possible should remain in the tank to assist in initial settlement and resist floatation – however under no circumstances should water be left in the tank unattended or overnight without both access ports covered and the cover's secured.

1.07.4 Other actions as necessary to complete the installation of the tank can then be undertaken.

1.07.5 It is the intent to complete as much work as possible on a particular site, once mobilized on that site, to limit the inconvenience to the homeowner to the greatest extent possible.

PART 2 ONSITE INTERCEPTOR TANK

The onsite interceptor tank shall be 1,500-gallon, two-compartment tank with shared liquid levels between the compartments made of concrete and shall comply with the requirements set forth in these specifications. Tank manufacturers need to be approved prior to their use. The approval process submittal can be found at the end of this specification as Appendix C. Note tanks can be provided from more than one approved vendor. The following tank manufactures have already been pre-approved for use with this package:

1. Baystar Precast Company (concrete)
925 Skinners Turn Road
Owings MD 20736
(410) 257-1312

2. Gillespie and Son, Inc. (concrete)
100 Dixon Drive

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Chestertown MD 21620
(410) 778-0900

2.01 GENERAL REQUIREMENTS

- A. Loading Criteria:
- a. There shall be 140 lbs./cu.ft. for minimum weight of saturated backfill, or 127 lbs./cu.ft. for unsaturated backfill (500 lbs./sq.ft. minimum).
 - b. Minimum lateral loading shall be 62.4 lbs./cu.ft. Lateral loading shall be determined from ground surface.
 - c. The tank shall also support a concentrated wheel load of 2500 lbs.
- B. There are four (4) typical loading conditions that should be analyzed:
1. 4 ft. Bury + Full Exterior Hydrostatic Load
 2. 4 ft. Bury + Full Exterior Hydrostatic Load + 2500 lb. Wheel Load.
 3. 1 ft. Bury + 2500 lb. Wheel Load.
 4. Tank Full, Interior Hydrostatic Load and Unsupported by Soil.
- Load Case 4 represents the tank full of liquid at 62.4 lbs/cu.ft. This condition addresses seam and haunch stress-strain relationships that occur during water tightness testing, as well as poor soil bedding conditions that provide inadequate support.*
- C. Tanks requiring deep burial (>48") or subject to truck or heavy traffic loading require special consideration. (A minimum soil cover of 24" shall be used).
- D. All tanks shall be structurally sound and watertight and shall be guaranteed in writing by the tank **MANUFACTURER** for a period of five years from the date of final acceptance. **MANUFACTURER'S** signed guarantee shall accompany the Shop Drawing. The tank guarantee/warranty shall be furnished at the time of submittal. Tank warranty shall not be limited liability to replacement cost of the tanks. The interceptor tank shall be capable of withstanding long-term hydrostatic loading, in addition to the soil loading, due to a water table maintained at ground surface.
- E. Tanks shall be manufactured and furnished with access openings 20" in diameter and of the configuration shown on the manufacturer's drawings. Modification of completed tanks will not be permitted.
- F. Inlet plumbing shall include an inlet tee that penetrates 18" into the liquid from the inlet flow line. (The depth may vary depending on the tank's height; in all cases, though, the inlet should extend to a level below the bottom of the maximum scum depth.) The inlet plumbing shall allow for natural ventilation back through the building sewer and vent stack.
- G. Tanks shall be capable of successfully withstanding an aboveground static hydraulic test and shall be individually tested.
- H. All tanks shall be installed in strict accordance with the **MANUFACTURER'S** recommended installation instructions.
- I. Buoyancy calculations shall be submitted by **MANUFACTURER** for review assuming the tank to be empty, with 24-inches of soil over-bearing, and the water table at ground surface.

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2.02 CONCRETE TANKS

- A. Walls, bottom and top of reinforced concrete tanks shall be designed across the shortest dimension using one-way slab analysis. Stresses in each face of monolithically constructed tanks may be determined by analyzing the tank cross-section as a continuous fixed frame.
- B. The walls and bottom slab shall be poured monolithically; alternatively, water stops may be provided. Mid-seam tanks will not be allowed.
- C. Reinforcing steel shall be ASTM A-615 Grade 60, $f_y = 60,000$ psi. Details and placement shall be in accordance with ACI 315 and ACI 318. **Reinforcing steel shall meet 'Buy American Iron & Steel' provisions.**
- D. Concrete shall be ready-mix with cement conforming to ASTM CI50, Type II. It shall have a cement content of not less than six (6) sacks per cubic yard and maximum aggregate size of 3/4". Water/cement ratio shall be kept low ($0.35 \pm$), and concrete shall achieve a minimum compressive strength of 4000 psi in 28 days. The Contractor shall submit a concrete mix design to the **COUNTY** for review and approval. Three (3) concrete sample cylinders shall be taken and tested for each tank manufactured until the **MANUFACTURER** and **COUNTY** are satisfied that the minimum compression strength is being obtained. To ensure compliance, the **MANUFACTURER** shall then make and set three (3) sample cylinders for a minimum of 20% of the remaining tanks at the discretion of the **COUNTY**. If the minimum compressive strength is not being obtained, the **MANUFACTURER** shall be required to make and test sample cylinders for each tank manufactured. Calcium chloride will not be allowed in the mix design. The cost of testing cylinders shall be the tank **MANUFACTURER'S** responsibility. The tank manufacturer may supply a Swiss hammer for compressive testing in the field in lieu of sample cylinders.
- E. Tanks shall be protected by adding an admixture to enhance waterproofing and resistance to sulfur attack; however, the tank shall be watertight without the addition of any admixture. Admixture to be Zypex C-500NF at a dose of 1.5% by weight of Portland cement (or as recommended by manufacturer), or approved equal.
- F. Form release used on tank molds shall be Nox Crete™ or approved equal. Diesel or other petroleum products are not acceptable.
- G. Tanks shall not be moved from the manufacturing site to the job site until the tank has cured for seven (7) days or has reached two-thirds of the design strength. Date of tank manufacture to be indelibly marked onto the top of the tank.
- H. Tanks shall be manufactured and furnished with access openings of the size and configuration to accommodate individual packaged pump systems. For 24" diameter access risers, the tank manufacturer shall cast in place a flanged tank adapter to facilitate the bonding of a 24" diameter access riser. The flanged tank adapter shall be made of 1/4" thick ABS and shall have an outside diameter of 27" and an inside diameter of 22-3/4". The flanged adapter shall be Orenco Systems®, Inc. Model PRTA24 or approved equal. The adapter must have an overall height of no less than 3" to allow 1-1/2" exposed for sufficient bonding area once the adapter is installed in the tank.
- I. The septic tank and the top slab shall be sealed with a preformed flexible plastic gasket. The flexible plastic gasket shall be equal to the flexible butyl resin sealant congeal CS-102 or CS-202 as manufactured by Concrete Sealants, Inc. of New Carlisle, Ohio, and shall conform to federal specification SS-S-00210(2iOA) and AASHTO M-198. A mechanical fastening

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method shall also be used to ensure the top slab does not separate due to any differential settlement and to further prevent the infiltration of groundwater. .

- J. In order to demonstrate water tightness, tanks shall be tested on-site prior to acceptance. Inlets to the septic tank will be watertight pipe seal Cast-A-Seal™ (Manufactured by Press-Seal Gasket Corporation) or approved equal.
- a. Tank Test – After installation is completed and before backfilling over the top of the tank, each tank shall be tested by filling with water to the soffit (i.e. the top of the sidewall) and letting stand. After 24 hours, the tank shall be refilled to the soffit and the exfiltration rate shall be determined by measuring the water loss after two (2) hours. Any leakage shall be cause for rejection. After it has been determined that there is no leakage, proceed to test the lid to tank seam.
 - b. Tank Lid Leak Test - Fill the tank with water to a point 3” below the top of the tank’s lid and the water loss measured after a two-hour period. Any leakage shall be cause for rejection. After it has been determined that there is no leakage, proceed to test the access riser seam.
 - c. Access Riser to Tank Adaptor Seam Leak Test - Backfill to a minimum depth of 3” on top of the tank to prevent damage from hydrostatic uplift. Fill the tank to a point 3” above the top of the tank. No tank will be accepted if there is any leakage over the two-hour period at either riser.
 - d. Water to remain in the tank after testing to inhibit floatation although some water may need to be removed in order to install the STEP assembly.

PART 3 TANK ACCESS EQUIPMENT

3.01 RISERS

Risers **MANUFACTURER** shall be Orenco Systems, Inc., or approved equal. Risers shall be required for access to internal vaults and access into the septic tanks for septage pumping. All risers shall be constructed watertight. The risers shall be attached to the tanks such that a watertight seal is provided. Risers shall extend 3” above original grade to allow for settlement and to ensure positive drainage away from the access. Risers for inspection ports shall be of 24” in nominal diameter. Risers containing pumping assemblies or electrical splice boxes shall be 24” in diameter and shall be of sufficient diameter to allow removal of internal vaults without removing splice boxes, etc. All other risers shall be a minimum of 24” in nominal diameter and shall vary in height depending on the depth of bury on the various tanks. Adhesive required to adhere the PVC or fiberglass risers to either fiberglass or ABS tank adapters shall be a two-component methacrylate structural adhesive or approved equal. To ensure product compatibility, a single manufacturer shall supply risers, lids, and attachment components.

3.02 INLET RISERS

Inlet risers shall be Orenco Systems®, Inc. Model Perma-Loc, Ultra-Rib, KOR FLO or approved equal. The material shall be PVC as per ASTM D-1784 and tested in accordance with AASHTO M304M-89. The risers shall be constructed of non-corrosive material and designed-to-be buried in soil. Risers shall have a minimum stiffness of 10 psi, when tested according to ASTM D2412. Risers shall be capable of withstanding a truck wheel load (54 square inches) of 2500 pounds for

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60 minutes with a maximum vertical deflection of a 1/2 an inch. Risers shall extend to 3 inches above the ground surface to allow for settlement and shall have a minimum nominal diameter of 24 inches.

3.03 OUTLET RISERS

Outlet risers shall be Orenco Systems[®], Inc. Model Perma-Loc, Ultra-Rib, KOR FLO or approved equal. The material shall be PVC as per ASTM D-1784 and tested in accordance with AASHTO M304M-89. The risers shall be constructed of non-corrosive material and designed-to-be buried in soil. Risers shall have a minimum stiffness of 10 psi, when tested according to ASTM D2412. Risers shall be capable of withstanding a truck wheel load (54 square inches) of 2500 pounds for 60 minutes with a maximum vertical deflection of 1/2 an inch. Risers shall be at least 24 inches high, shall have a minimum nominal diameter of 24 inches for simplex pumping applications and shall be factory-equipped with the following:

- Electrical and Discharge Grommets: Orenco Systems[®], Inc. EPDM grommets, or approved equal, shall be installed by the **MANUFACTURER** for discharge piping, vent piping, and/or the electrical conduit to assure a watertight seal. The **MANUFACTURER** of the access risers shall install the grommets at the factory.

3.04 RISER-TO-TANK ATTACHMENT

Orenco Systems, Inc. Model PRTA24-2 (24" diameter risers) tank adapter cast into tank lid or approved equal. All attachment components shall be constructed ABS. Adhesives and sealants shall be waterproof, corrosion resistant and approved for the intended application. The riser-to-tank connection shall be watertight and structurally sound. The riser-to-tank connection shall be capable of withstanding a vertical uplift of 5000 pounds to prevent riser separation due to tank settlement, frost heave, or accidental vehicle traffic over the tank.

3.05 LIDS

Normal Duty: One lid shall be furnished with each access riser. Lids shall be Orenco Systems[®], Inc. DuraFiber Model FLD24G, or approved equal, as appropriate, fiberglass with green non-skid finish, and provided with stainless steel bolts, and wrench. **MANUFACTURER** shall provide evidence that lids have been used successfully in continuous field service for a minimum of five years to demonstrate long-term integrity and suitability for the application. Lids shall be waterproof, corrosion resistant and UV resistant. Lids shall be flat, with no noticeable upward dome; a crown or dome of no more than 1/8" is allowable. Lids shall not allow water to pond on them. Self-lubricating plastics, such as polyethylene, shall not be considered non-skid without addition of a non-skid coating. Lids shall form a watertight seal with the top of riser. Lids shall be capable of withstanding a truck wheel load (81 square inches) of 2500 pounds for 60 minutes with a maximum vertical deflection of 3/4 of an inch. Lids shall be provided with tamper-resistant stainless steel fasteners and a tool for fastener removal. Tamper-resistant fasteners include recessed drives, such as hex, Torx, and square. Fasteners that can be removed with common screwdrivers, such as slotted and Phillips, or fasteners that can be removed with standard tools, such as pliers or crescent wrenches, are not considered tamper-resistant. To prevent a tripping hazard, fasteners shall not extend above the surface of the lid. Optional components may include the following:

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In traffic bearing situations, the tank shall be modified as shown on the appropriate detail with a thicker lid, polypropylene risers (Cretex Pro-Ring, or approved equal), and cast iron frame and covers (Neeenah NF15562000 – NF15565174, or approved equal).

3.06 RISER INSTALLATION

Riser installation shall be accomplished according to the **MANUFACTURER'S** instructions.

PART 4 EFFLUENT PUMPING ASSEMBLIES (SINGLE FAMILY RESIDENCES)

The Collection System On-Lot Package shall be certified to have been manufactured by Orenco Systems®, Inc., Sutherlin, Oregon, or approved equal. MANUFACTURER shall provide a unique Certificate of Origin (Appendix B) with each Collection System On-Lot Package that lists all products in the Collection System On-Lot Package. MANUFACTURER warrants that any Products that comprise a Collection System On-Lot Package that are sold under an MANUFACTURER Certificate of Origin, will be free from defects in materials and workmanship for a period of five (5) years from the date of installation of the equipment, in accordance with, and subject to, the terms and conditions in effect at the time of sale. **CONTRACTOR** is to submit each Certificate of Origin to **OWNER** once the system has been commissioned.

Pump package shall be an Orenco Systems®, Inc. certified package Model PSA10-KENT SFR-MD or approved equal comprising of the following components:

4.01 RISERS AND LIDS

See PART 3.

4.02 PUMP VAULT

Orenco Systems®, Inc. Model PVU57-1819, Universal Biotube® Pump Vault or approved equal, installed in conformance with the plans. The filter shall have a minimum effective screen area of no less than 14.5 square feet. The Biotube pump vault shall consist of a 12-inch diameter polyethylene vault with eight (8) 2-inch diameter holes evenly spaced around the perimeter, located appropriately to allow for maximum sludge and scum accumulation before requiring pumping (approximately 70% of minimum liquid level). Housed inside the polyethylene vault shall be the Biotube assembly consisting of 1/8-inch mesh polypropylene tubes. Attached to the vault is a flow inducer to accept one or two high-head effluent pumps.

4.03 DISCHARGE HOSE AND VALVE ASSEMBLY

Discharge hose and valve assembly to be Orenco Systems®, Inc. Model HV100BCQPRX or approved equal. Discharge assembly shall be 1-inch diameter and include 150 psi PVC ball valve, 150 psi PVC check valve, reinforced EPDM flex hose with working pressure rating of 250 psi, and Schedule 40 PVC pipe with cam coupler adapter for quick disconnect.

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4.04 FLOAT SWITCH ASSEMBLY

Float switch shall be mercury free Orenco Systems®, Inc. Model MFPBN, or approved equal, with three switch floats mounted on a PVC stem attached to the filter cartridge. The floats must be adjustable and must be removable without removing the pump vault. The high- and low-level alarms and on/off function shall be preset as shown in the ENGINEER'S plans. Each float lead shall be secured with a nylon strain relief bushing at the splice box. The on/off float shall be rated for a minimum of 5.0A @ 120 VAC.

4.05 HIGH-HEAD EFFLUENT PUMP

All pumps shall comply with general requirements set forth in section 1.06 (above). Residential pumps shall be an Orenco Systems®, Inc. Model PF100511, 1/2 hp, 115 VAC, single phase, 60 Hz, two-wire motor, with 10 foot long extra heavy duty (SOOW) heavy duty electrical cord with ground, or approved equal. **The pumps shall be capable of delivering 12 GPM against a pressure of 139 feet of water, 10 GPM at 171 feet of water, and shut-off head at 250 feet of water.**

4.06 ELECTRICAL SPLICE BOX

Orenco Systems®, Inc. Model SBEX1-4 series external splice box, or approved equal, UL approved for wet locations, equipped with four (4) electrical cord grips and two 3/4-inch outlet fittings. Also included shall be UL listed waterproof butt splice connectors.

For traffic bearing situations, an internal splice box is required. Orenco Systems®, Inc., Model SB4 internal splice box or ENGINEER-approved equal, UL approved for wet locations, equipped with four (4) electrical cord grips and a 1-inch outlet fitting. Also included shall be UL listed waterproof wire nuts. The use of a UL-approved conduit seal kit shall be required to prevent the passage of gases, vapors, or flames through the conduit.

4.07 CONTROLS AND ALARMS

Controls and alarms shall be listed per UL 508. Panels shall be repairable in the field without the use of soldering irons or substantial disassembly. Control panels shall be Orenco Systems, Inc. S1ROETMCTMTSGR or approved equal control panel meeting the following:

Standard Components

- a. Motor-Start Contactor: 120 VAC, 1hp, 16 FLA, 60 Hz; 2.5 million cycles at FLA (10 million at 50% of FLA).
- b. Toggle Switch: Single-pole, double-throw HOA switch. 20 amps, 1 hp.
- c. Controls Circuit Breaker: 10 amps, OFF/ON switch. Single-pole 120 VAC. DIN rail mounting with thermal magnetic tripping characteristics.
- d. Pump Circuit Breaker: 20 amps, OFF/ON switch. Single-pole 120 VAC. DIN rail mounting with thermal magnetic tripping characteristics.
- e. Audio Alarm: 95 dB at 24", warble-tone sound.

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- f. Visual Alarm: 7/8" diameter red lens, "Push-to-silence." NEMA 4, 1-watt bulb, 120 VAC
- g. Panel Enclosure: Measures 11.5" high x 9.3" wide x 5.4" deep. NEMA 4X rated. Constructed of UV-resistant fiberglass; hinges and latch are stainless steel.
- h. S1 Panel Ratings: 120 VAC, 1 hp, 14 amps, single phase, 60 Hz.
- i. Redundant Off Relay: 120 VAC, provides a secondary off. Sounds alarm on low-level condition. DIN rail mount.
- j. Event Counter: 120 VAC, 6-digit, non-resettable.
- k. Elapsed Time Meter: 120 VAC, 7-digit, non-resettable. Limit of 99,999 hours; accurate to 0.01 hours.
- l. 3- Way (main, auto, off) manual transfer/disconnect switch (MTS)
- m. Generator receptacle

4.08 INSTALLATION

All pumping system components shall be installed in accordance with the **MANUFACTURER'S** recommendations, the plans, and all state and local regulations.

4.09 LOCATION

The pump control panel shall be mounted on 4 x 4 salt treated post(s) within 10-feet of the existing electric service meter. The control panel shall be provided with a lockable disconnect switch. The panel, when possible, should be mounted in the shade and protected from the weather. The panel should be located at a convenient height (usually about five feet above the ground) and where it will be accessible for maintenance.

PART 5 TOOLS FOR SEPTAGE MEASUREMENT

5.01 SCUM MEASURING UTILITY GAUGE (SMUG)

CONTRACTOR shall provide a minimum of one scum measuring utility gauge. The gauge shall consist of a minimum 3/8" diameter stainless steel rod with an incremental scale for measuring scum levels. The rod shall be bent at a 90-degree angle at the base to aid in identifying the scum "by feeling." The gauge shall be Orenco Systems®, Inc. Model SMUG or approved equal.

5.02 SLUDGE MEASURING DEVICE

CONTRACTOR shall provide a minimum of one approved sludge-measuring device.

PART 6 SUPPORT, TRAINING, TESTING, AND OVERSIGHT

6.01 PRECONSTRUCTION MEETING

Before any work at the site is started, a meeting attended by the **COUNTY, CONTRACTOR, ENGINEER,** and **MANUFACTURERS** (or their agent) and others as appropriate will be held to

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establish a working understanding among the parties as to the work involved for installing each STEP unit.

6.02 INSTALLATION AND FIELD TESTING TRAINING

The **MANUFACTURER** shall provide the services of a trained representative to instruct the installing **CONTRACTOR'S** crew and **INSPECTOR** regarding the proper installation and field testing of each STEP unit per the **MANUFACTURER'S** recommendations and requirements. The **MANUFACTURER**, at no additional cost, shall have a trained representative provide installation and field testing training services for a minimum of one (1) visit of a minimum of five (5) eight-hour days at the beginning of construction.

6.03 QUALITY CONTROL

- A. To ensure quality control, the **INSPECTOR** shall inspect and certify that an initial installation of each STEP unit is in compliance with the **MANUFACTURER'S** recommendations and requirements, using the form provided in APPENDIX A "STEP INSTALLATION CHECKLIST".
- B. Upon completion of the inspection, the **INSPECTOR**, in coordination with the **COUNTY**, shall perform or direct the **CONTRACTOR** to perform any required adjustments to the equipment and place into operation under the supervision of the **COUNTY**. All equipment and materials required to perform the testing shall be the responsibility of the **CONTRACTOR**. The completed inspection checklist shall be signed by the **INSPECTOR** and copies faxed, emailed, or mailed to the **COUNTY** and **MANUFACTURER** within one (1) week of each corresponding STEP unit being fully installed and prior to System Commissioning.
- C. The **MANUFACTURER**, at no additional cost, shall provide the services of a trained representative for a minimum of one (1) visit of a minimum of five (5) eight-hour days for the purpose of quality control during construction.

6.04 SYSTEM COMMISSIONING

- A. The **MANUFACTURER** shall provide the services of a trained representative for training the **OWNER'S** service provider, and, when directed, randomly inspecting STEP installation's throughout the project. The inspection will include items covered in APPENDIX A "STEP INSTALLATION CHECKLIST" as well as the effluent package, wiring, and control panel placement. Upon system commissioning, the **MANUFACTURER'S** trained representative shall provide the **COUNTY** a written report of findings. The **COUNTY** should then perform or direct the **CONTRACTOR** to perform any required adjustments to the equipment and place into operation. All equipment and materials required to perform additional testing shall be the responsibility of the **CONTRACTOR**. The **MANUFACTURER** shall submit to the **COUNTY** and **OWNER**, a detailed start-up checklist for each STEP unit, according to the **MANUFACTURER'S** inspection and startup procedures.
- B. The **MANUFACTURER**, at no additional cost, shall provide the services of a trained representative for a minimum of three (3) visits of a minimum of one (1) eight-hour day each visit for the purpose of system commissioning.

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6.06 SPARE PARTS

The **MANUFACTURER** shall provide a quantity of thirty (30) of the following spare parts:

1. Pumps
2. High Level Alarm Float
3. Pump on/off float
4. Redundant Off/Low Level Alarm Float
5. Discharge Assemblies
6. Motor Contactors
7. 10A single pole circuit breakers
8. 20A single pole circuit breakers
9. Audible Alarm

6.07 OPERATION AND MAINTENANCE

The **MANUFACTURER** shall provide five (5) operation and maintenance manuals to the **COUNTY**. Operation and Maintenance manuals shall include a signed copy by the **INSPECTOR** of APPENDIX A "STEP INSTALLATION CHECKLIST" for each STEP installation.

6.08 USER MANUALS

The **MANUFACTURER** shall provide an editable, reproducible homeowner's user manual developed in cooperation with the **OWNER**.

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APPENDIX A

STEP INSTALLATION CHECKLIST

SYSTEM OWNER: _____ DATE: _____

SITE ADDRESS: _____
 _____ SYSTEM PROVIDER: _____

CONTRACTOR: _____ INSPECTOR: _____

AS-BUILT SITE DIAGRAM – see attached

YES	NO	PRE-INSTALLATION	DATE/INITIAL:
_____	_____	Tank location approved per County	
_____	_____	Panel location approved per County	
_____	_____	Electrical supply (# circuits/disconnect)	
_____	_____	STEP equipment package reviewed and approved	
_____	_____	Certificate of Origin	
_____	_____	Service Connection located	
_____	_____	Review riser to tank connection and piping to tank method	

YES	NO	TANK INSTALL (per Manufacture)	DATE/INITIAL:
_____	_____	Tank Warranty	
_____	_____	Date manufacture specified	
_____	_____	Factory leak test documentation	
_____	_____	Inlet connection approved	
_____	_____	Certificate of Origin – Appendix B	
_____	_____	Inlet tee installed	
_____	_____	Riser-to-Tank connections approved	
_____	_____	Tank is level and properly bedded	
_____	_____	Passes leak test/water tight test (tank filled 2" above tank/riser connection)	

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YES	NO	PUMPING SYSTEM	DATE/INITIAL:
_____	_____	Splice Box Location Acceptable	
_____	_____	Pump Vault/Screen Easily Accessible for Maintenance	
_____	_____	Discharge Assembly Installed Correctly	
_____	_____	Service Lateral Properly Bedded and Depth is Sufficient	
_____	_____	Toning Wire Present	
_____	_____	Check Valve Installed Correctly	
_____	_____	Control Panel Location and Height Acceptable	
_____	_____	Conduit Wiring Acceptable (waterproof wire nuts used)/Seal Offs (panel and splice box)	
_____	_____	Service Connection Valve Box/Accessibility	

YES	NO	START UP	DATE/INITIAL:
_____	_____	Risers Backfilled to Grade (within 2-inches of lid)	
_____	_____	Appropriate Sized Pump Circuit Breaker	
_____	_____	Circuit Breaker Marked Appropriately	
_____	_____	Separate Alarm Circuit (preferred, not required)	
_____	_____	Pump Operation Voltage Amps	
_____	_____	Float Operation Alarm On/Off Low Level	
_____	_____	Float Settings Accurate (record dimensions from top of tank)	
_____	_____	Alarm On/Off Low Level	
_____	_____	Controls Audible Alarm Visual Alarm	
_____	_____	Emergency Call Sticker in Place	
_____	_____	All Lids are In Place and Locked	
_____	_____	Home Owner's Do's & Don't's Delivered to Homeowner	

Inspector Signature: _____

Date: _____

APPENDIX B

CERTIFICATE OF ORIGIN

Southern Kent Island Sanitary Sewer Project Engineered Wastewater Collection System

Except for the building sewer, tank, and service lateral, the following Collection System On-Lot Package is certified to have been manufactured by Orenco Systems®, Inc., Sutherlin, Oregon. The On-Lot Package equipment listed below is covered by an extended factory warranty under the terms and conditions of Orenco Systems' Certificated Products Limited Warranty in effect at the time of sale.

On-Lot Package Code: PSA10-KENT SFR-MD

Adhesive: (2) SA530

Splice Box: (1) SBEX1-4

Grommet: (1) G1L

Biotube® Pump Vault: (1) PVU57-1819

Float Assembly: (1) MFABT-Y,G,W-27V

Discharge Assembly: (1) HV100BCQPRX

Effluent Pump: (1) PF100511

Control Panel: (1) S1ROETMCTMTSGR

Certificate of Origin (1) NCF-CO-KENT-1

Additional Orenco Equipment Required for a Complete Installation (not included):

PVC Access Risers: (1) RR2418, (1) RR2418+SX

Fiberglass Access Lids: (2) FLD24G

Site information:

Site address: _____

Lot number: _____

APPENDIX C

Checklist



Concrete Tank Questionnaire

General Information

Tank manufacturer: _____

State/Province: _____

Total tank volume, gallons (liters): _____

Date: _____

Number of compartments: _____

Tank Specifications

Specification

Actual

1. **Walls and bottom of tank** monolithically poured; alternatively, water stops may be provided.

Monolithic pour
Water stops

2. **Concrete:** ready-mix with cement conforming to ASTM C150, Type II. Contains a cement content of not less than six (6) sacks per cubic yard (0.76 m³) and maximum aggregate size of ¾-in. (19 mm). Water/cement ratio kept low (0.45), and concrete can achieve a minimum compressive strength of 4,000 psi (281 kg/cm²) in 28 days.

Sacks per cubic yard (or m³): _____
Maximum aggregate size: _____
W/C ratio: _____
28-day compressive strength: _____

3. **Reinforcing steel:** ASTM A-615 Grade 60, $F_y = 60,000$ psi (4220 kg/cm²). Details and placement are in accordance with ACI 315 and ACI 318. Must be used throughout the tank walls, lid, and bottom slab. Steel must be AIS compliant.

$F_y =$ _____ psi (kg/cm²)

AIS Compliant?
Yes
No

4. **Walls, bottom and top of reinforced concrete tank:** designed across the shortest dimension using one-way slab analysis.

Yes
No

5. **Form Release:** Nox-Crete™ or equivalent. (Diesel or other petroleum products are unacceptable.)

Form release: _____

6. **Flanged cast-in riser to tank adapters:** made of ¼-in. thick (6.5-mm) ABS or fiberglass with an overall height of no less than 3 in. (7.62 mm) or grooved tank adapter plate to accommodate 24-in. or 30-in. (610-mm or 762-mm) diameter risers.

Riser adapter used?
Yes
No

Manufacturer: _____

Concrete Tank Questionnaire (cont.)

Specification

Actual

7. **Top slab** sealed with a preformed flexible plastic gasket equal to flexible butyl resin sealant congeal CS-102 or CS-202 as manufactured by Concrete Sealants, Inc. of New Carlisle, Ohio, and shall conform to federal specifications SS-S-00210 (2i0A) and AASHTO M-198. Seam must remain intact. A mechanical fastening method shall be used.

Top slab seal: _____

Mechanically fastened?

Yes
No

8. **Multiple-compartment tanks:** properly vented to allow air flow across all compartment baffles, and all the way back to the building vent.

Yes
No

9. **Tank shall be watertight** without the addition of seal coatings, but it may be protected by admixture.

Admixture used: _____

Dosage: _____

10. **A watertight test** must be performed on each tank before final acceptance. Refer to specification.

Mandatory in-field watertight test will be performed by:

Manufacturer
Installer

11. **Tank approved** by the local regulatory agency?
If no, please explain below:

Tank approved?

Yes
No

12. Are you an NPCA or IAPMO certified plant?

If yes, which: _____

Certified plant?

Yes
No

13. Submit PE Sealed structural & bouyancy calculations.

Yes
No

14. Submit written warranty.

Yes
No

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SPECIFICATION 02723 – ABANDONING EXISTING SEPTIC TANKS

PART 1 - GENERAL

1.01 DESCRIPTION

A. The Contractor shall abandon existing septic tanks in place. Abandonment shall consist of locating the existing tanks, pumping out the tank's contents, filling the tanks with clean sand, and restoration of any necessary excavation in accordance with the restoration specifications.

B. Related work specified elsewhere:

Specification 02485 – Finish Grading and Seeding

PART 2 - PRODUCTS

2.01 SAND – A material similar to mason sand with no clay or other contaminants which would impact its ability to readily compact.

PART 3 - EXECUTION

3.01 CONSTRUCTION METHODS

A. The Contractor shall locate the existing septic tank(s) and shall excavate as necessary to determine the location of all access openings to the tanks.

B. All contents of the existing septic tank shall be removed. The removal shall be performed by a licensed septage hauler and all material disposed of at an approved septage disposal site. The contractor shall maintain a complete record of the transport and disposal of the septic tank contents including address, quantity, date, septage hauler, and disposal facility.

C. Tanks equipped with electrical components (i.e. pumps and/or blowers) are to be de-energized in accordance with electrical code and those components either abandoned in place or removed for salvage at the Contractor's option.

D. Once the septic tank's contents have been removed the tank's lid is to be removed and disposed of off-site at a rubble-fill or other approved disposal site. Any inlet and

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outlet baffles (if any) are to be removed and disposed of off-site. A hole is to be created into the bottom of the tank to inhibit floating. The tank shall then be filled with a clean sand to the soffit of the tank such that no voids exist. These two operations should be closely coordinated as depending on the state of the seasonal high water tables, the tanks could refill with groundwater or float if not filled in short order.

- F. After the tank has been filled to the soffit with sand, fill the remaining excavation with topsoil, if the surface is to be restored to grass, or other material necessary to restore the surface in-kind.
- G. If, due to site constraints, the tank's lid cannot be removed, and with prior approval from the County, the tank is to be filled with flowable fill in accordance with the contingent bid item. Lids are to be removed of and disposed of off-site. Plywood, or some other material suitable to withstand the weight of topsoil until the fill has solidified, shall be used to cover the lid holes. The depressions caused by the lid's removal will be filled with top soil, or whatever material currently surrounds the area.
- H. If, due to site constraints, the STEP tank cannot be installed without the removal of an existing septic tank, the septic tank will be removed and disposed of off-site at a rubble-fill or other approved disposal site and the STEP tank immediately installed in its place such that the property remains livable and the STEP tank functions as a holding tank (if necessary) until the STEP tank becomes operational. This situation will require close coordination and cooperation with the property owner. These situations will not be undertaken until such time as the overall sewer system is in operation.

END OF SPECIFICATION

SPECIFICATIONS

DIVISION 3 - CONCRETE

03310 Concrete For Utility Construction
03300 Flowable Fill

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SPECIFICATION 03310 - CONCRETE

PART 1 - GENERAL

1.01 DESCRIPTION

A. The work of this Specification includes, but is not limited to:

Cast-in-place Cement Concrete Construction
Reaction and Support Blocking
Cradles and Encasement

B. Related Work Specified Elsewhere:

Specification 02221 - Trenching, Backfilling & Compacting
Specification 02575 - Paving Repair and Resurfacing
Specification 02610 - Sanitary Sewer Pipe

C. Applicable Standard Details

Concrete Cradle and Encasement Details
Concrete Collar for Valves

1.02 QUALITY ASSURANCE

A. Reference Standards:

Maryland Department of Transportation, State Highway Administration (SHA)
Standard Specification for Construction & Materials, 1982 as Amended
American Society for Testing and Materials (ASTM):

C31 Making and Curing Concrete Test Specimens in the Field
C39 Test for Compressive Strength of Cylindrical Concrete Specimens
C42 Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
C172 Sampling Fresh Concrete

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1.03 SUBMITTALS

A. Certificates:

1. Submit a Statement of Compliance from the concrete producer, together with supporting data, attesting that the cement concrete conforms to the State Specifications for the class of concrete being used.
2. Submit certified results of compressive strength tests performed by an independent testing laboratory.

B. Shop Drawings:

1. Submit detailed shop drawings of reinforcing steel.

PART 2 - PRODUCTS

2.01 CEMENT CONCRETE

A. Ready - mixed, conforming to Section 918, State Highway Administration Specifications.

1. Requirements for State approved batch plants, design computations and plant inspection shall not apply. The acceptability of concrete will be based on conformance with the Cement Concrete Criteria specified below and the results of the specified tests.

B. Cement Concrete Criteria:

1. Mix No. 2 :

28 - day compressive strength: 3000 psi
Slump: 2 to 5 inches

2. Mix No. 6 (High Early Strength) :

28 - day compressive strength: 4500 psi
Slump: 2 to 5 inches

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3. Minimum cement content and maximum water - cement ratio conforming to Table 918.06, State Highway Administration Specifications.

2.02 REINFORCEMENT STEEL

A. Reinforcement Bars:

1. Conforming to Section 911.01, State Highway Administration Specifications. Deformed, Grade 40.

B. Steel Wire Fabric:

1. Conforming to Section 911.06, State Highway Administration Specifications.

PART 3 - EXECUTION

3.01 GENERAL

- A. Comply with Section 608, State Highway Administration Specifications for construction requirements including formwork, curing, protection and finishing of cement concrete.
- B. Excavate and shape trench bottoms and sides to accommodate thrust block forms, encasement, manhole bases, inlets and vaults.
- C. Support pipe, valves and fittings at the required elevation with brick or concrete block. Do not use earth, rock, wood, or organic material as supports.

3.02 CONSTRUCTION

- A. Construct cast-in-place vaults, inlets, endwalls, curbs, sidewalks and miscellaneous reinforced structures of Mix No. 2 concrete. Mix no. 2 concrete shall be central-plant mixed.
- B. Construct manhole bases, reaction and support blocking, cradles encasements and miscellaneous mass concrete of Mix No. 2 concrete. Mix No. 2 concrete may be from a mobile cement concrete plant or truck - mixed.
- C. Construct reinforced and plain cement concrete roadway pavements and base courses of

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High Early Strength concrete. High Early Strength Concrete shall be central - plant - mixed.

- D. Provide spacers, chairs, bolsters, ties and other devices for properly placing, spacing, supporting and fastening reinforcement in place.
- E. Place concrete utilizing all possible care to prevent displacement of pipe or fittings. Return displaced pipe or fittings to line and grade immediately.
- F. Insure tie rods, nuts, bolts and flanges are free and clear of concrete.
- G. Do not backfill structures until concrete has achieved its initial set, forms are removed, and concrete work is inspected by the County.
- H. Perform backfilling and compaction as specified in Specification 02221.
- I. Concrete buttresses shall be placed on all main horizontal bends, wyes, or other changes in direction.
- J. Any encasement called for on the Contract Drawings shall be encased by a minimum of six inches of concrete around the perimeter of the pipe.

3.03 FIELD TESTS OF CONCRETE DURING CONSTRUCTION

- A. Perform compressive strength tests, slump tests, and air content tests for each 50 cubic yards of each class of concrete placed, or fraction thereof.
 - 1. Keep a slump cone and an air meter in close proximity to all concrete placements.
 - 2. Sample concrete in accordance with ASTM C172.
 - 3. Determine air content in accordance with ASTM C231 or ASTM C173 as applicable.
- B. Cast at least 5 cylindrical test specimens for each batch. Test two cylinders at 7 days; test two cylinders at 28 days. Hold the remaining cylinder in reserve for testing in the event that any of the other cylinders are damaged prior to testing.
 - 1. Prepare and cure test cylinders in accordance with ASTM C31. Determine concrete compressive strength in accordance with ASTM C39. Compute and

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evaluate in accordance with ASTM C94.

- C. If test cylinders fail to meet compressive strength requirements, the County may require additional core tests in accordance with ASTM C42.
- D. All field and laboratory testing referenced shall be performed by an independent concrete testing laboratory engaged by the County. The Contractor shall assist the County, or the County's agent, when appropriate. If the results of any test indicates a non-compliance with the requirements of the specifications, the Contractor shall correct the condition. The Contractor shall be responsible to show compliance with the requirements of the specifications and contract drawings.

END OF SPECIFICATION

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SECTION 03330 – FLOWABLE FILL

PART 1 – GENERAL

1.01 WORK INCLUDED

- A. The Contractor shall furnish all labor, equipment, materials and services, including pumping equipment and application, necessary for the manufacture, transportation and placement of all cementitious flowable fill as ordered by the Engineer, except for the work specifically included under other items.

B. This is a contingent item only to be used when directed.

1.02 RELATED WORK

- A. Division 3 - Concrete

1.03 SUBMISSIONS

- A. In accordance with the procedures and requirements set forth in the General Conditions and Division 1, the Contractor shall submit the following:
1. Shop Drawings
 2. Certifications of specification compliance for all sources of each material
 3. Manufacturer's data on all admixtures
 4. Mix design and trial mix test results
 5. Aggregate gradation

1.04 QUALITY CONTROL

- A. The Contractor shall engage the services of a testing laboratory, with the qualifications required by Section 03300 - Cast-In-Place Concrete, and experienced in the design and testing of flowable fill materials and mixes, to perform material evaluation tests and to design mixes for flowable fill. A trial mix shall be performed to verify the flowable fill mix design. The trial mix shall also report slump, air content, yield, cement content, and dry unit weight per ASTM C143 and ASTM D6023.

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PART 2 – MATERIALS

2.01 CEMENTITIOUS FLOWABLE FILL

- A. Flowable fill (controlled low strength material) shall be a uniform mixture of sand, Type II Portland cement, fly ash, admixtures and water. The mix design shall produce a flowable material with little or no bleed water, which produces a minimum compressive strength of 50 psi and maximum compressive strength of 100 psi at 56 days. The cured material shall be excavatable and have a maximum dry weight of 100 pounds per cubic foot. Slump of mix at the point of application shall be 7-inches to 10-inches.
- B. Admixtures specifically designed for flowable fill shall be used to improve flowability, reduce unit weight, control strength development, reduce settlement and reduce bleed water. Admixtures shall be Rheocell-Rheofill by BASF Construction Chemicals; Darafill by Grace Construction Products; or approved equal. Cement and all other materials shall be as specified in Section 03300 - Cast-In-Place Concrete.
- C. Fine Aggregate (Sand) shall consist of natural or manufactured siliceous sand, clean and free from deleterious substances, and graded within the following limits:

<u>Sieve Size</u>	<u>Percent Passing by Weight</u>
3/8"	100
No. 4	95 to 100
No. 8	80 to 100
No. 16	50 to 85
No. 30	25 to 60
No. 50	10 to 30
No. 100*	2 to 10

*For manufactured sand, the percent passing the No. 100 Sieve may be increased up to 20%.

PART 3 – EXECUTION

3.01 PLACEMENT OF FLOWABLE FILL

- A. Flowable fill shall be batched and premixed by an approved producer, dispensed from ready-mix trucks, and placed by approved methods and equipment.

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- B. Flowable fill shall be placed so as to completely fill the space to receive it with no trapped air pockets or other voids. Positive means of allowing the air to escape shall be provided where necessary and after approval of the Engineer. Where placed against, around and inside existing structures, lift heights shall be limited so as not to overload the structure. The Engineer shall approve lift heights and procedures. Specific procedures and methods shall be included in the Contractor's shop drawing submittals.
- C. Where flowable fill is placed around piping and other elements subject to floating within the fill space, positive means shall be taken to provide temporary balancing loads to prevent uplift, or fill lift heights shall be limited to prevent uplift.
- D. Application of loads or placement of other fill materials or concrete on top of flowable fill shall not occur until the flowable fill surface is determined to be suitable for loading per ASTM D6024 subject to the approval of the Engineer.

END OF SPECIFICATION

SPECIFICATIONS

DIVISION 4 - DIVISION 15

Not Used

SPECIFICATIONS

DIVISION 16

16000 General Electric

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GENERAL ELECTRICAL
SECTION 16000

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes materials, installation, and testing of the electrical system.

1.02 REGULATORY AGENCIES AND STANDARDS

- A. Regulatory Agencies: Installations, materials, equipment, and workmanship shall conform to the provisions of the following agencies:
 - 1. National Electrical Code (NEC).
 - 2. Local authorities having lawful jurisdiction pertaining to the work required.
- B. Underwriters' Laboratories, Inc. (UL): Materials, appliances, equipment, and devices shall conform to the applicable UL standards. The label of, or listing by, UL is required wherever applicable.

1.03 DELMARVA POWER REQUIREMENTS AND FEES

- A. The Contractor shall coordinate all changes with Delmarva Power. Delmarva Power fees, cable charges, and added facilities charges will be paid by the Contractor.
- B. Install electric service entrance equipment in accordance with Delmarva Power requirements. Coordinate with Delmarva Power to ensure timely connection by Delmarva Power.
- C. The Contractor shall have a Maryland certified master electrician enrolled in the Delmarva Power certification program for the entirety of this project. If the Electrician fails to meet the requirements of Delmarva power they shall be removed from the Delmarva Electrician Program for a time as seen fit by Delmarva Power.

1.04 QUALITY ASSURANCE

- A. The Contractor shall have a master electrician or restricted electrician to supervise all electrical work per Queen Anne County's Code Chapter 11 – Article III.
- B. Submit evidence of qualification, experience, and testing of the master electrician. The qualification evidence includes the following:

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1. Written evidence that the system installer has a minimum of five years' experience with the installation of meter sockets similar to this project.
 2. A list of completed installations similar to this project including the name and address of the Company contracted with, the name of the project, and the date of completion.
 3. The name and qualifications of the supervisory personnel that will be directly responsible for the installation of service.
- C. Contractor electrician shall have certification from Delmarva Power to remove meter socket, perform work, and reinstall the meter socket with experience from working under the certification program. Electrician shall supply proof of being in the Delmarva Power electrician certification program along with their certification as a Master Licensed Electrician in the State of Maryland. Contractor shall include both in Contractor's bid.

1.05 SUBMITTALS

- A. Submit report on initial visit to each site, including requirements to modify, or replace meter socket.
- B. Submit shop drawings in accordance with the contract requirements.
- C. Submit material list for all conduits, wire, disconnect switches, meter sockets, mounting hardware, and other equipment.
- D. Refer to section 3.04 of this specification for all requirements prior to installation.

PART 2 - MATERIALS

2.01 CONDUIT

- A. Rigid Galvanized Steel Conduit: Rigid, thick wall, hot-dipped galvanized inside and out, with galvanized threads. Conform to ANSI C80.1 and UL-6.
- B. Rigid Nonmetallic Conduit: Polyvinyl chloride (PVC) Schedule 40, 90C rise rating. Conform to NEMA TC-2 and UL-651.
- C. Liquid-Tight Flexible Conduit: Identical to flexible steel conduit but with overall PVC plastic jacket. Conform to UL-360.

2.02 LOW-VOLTAGE BUILDING WIRE

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- A. Low voltage building wire for use at 600 volts or less shall be 600-volt insulated, Type THHW or TWHN, rated for continuous operation at 75 C. Conductor shall be copper.
- B. All conductors shall be stranded.

2.03 METER SOCKETS

- A. It is the responsibility of the electrician under the Delmarva Power certification program to notify 48 hours in advance before starting work on any meter sockets. Coordinate with Delmarva power to set up schedule of work for multiple meter sockets.
- B. Prior to replacement or modification of meter sockets, submit details of existing meter socket including manufacturer, current rating, condition, and contractor's recommendations.
- C. Milbank and Siemens/Landis & Gyr are the more common types of existing meter sockets on this project; however other manufacturers are installed at various locations. Therefore, the Contractor and Electrical Sub-Contractor shall perform initial site visits and provide a written report as indicated in electrical drawing.
- D. The 320A meter sockets shall not be used for replacement of existing 60A, 100A, 200A meter sockets. Meter sockets that have been approved for replacement shall be replaced with Delmarva Power approved meter sockets which include 200A overhead and 200A underground meter sockets. The meter sockets shall be Siemens UAT41A-XPCV with lug tap terminals #14-1/0 CU7AL, Milbank U1980-O-KK-DPL/ U7040-RL-KK-DPL with 2 new lug tap terminals on load side K4977-EXT, or Delmarva Power approved meter socket with terminal taps on load side.
- E. The existing meter sockets require modification or replacement in order to provide power to the new S.T.E.P. control panel and motor. Every house requires that the load side has two available connections for the existing service and the added S.T.E.P. load. Refer to electrical drawing for additional details. The following are the different types of meter sockets required for installation or modification:
 - 1. For existing 400A and above meter sockets:
 - a. Contractor to coordinate with Delmarva Power to perform work for meter socket, which includes shutdown and reconnection of power.
 - 2. For existing 320A meter sockets:
 - a. Contractor to use spare terminals on the meter socket's load side for S.T.E.P. system power if available.

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- b. If there are not any spare terminals on the meter socket's load side, provide 2 new approved lug tap terminals to power S.T.E.P system.
3. For existing 200A meter sockets:
 - a. Siemens/Landis and Gyr meter sockets rated for 200 amps that do not already have spare lug tap terminals on load side shall require 2 new lug tap terminals on the load side #14-1/0 CU7AL or approved equal.
 - b. Milbank meter sockets rated for 200 amps that do not already have spare lug tap terminals on load side shall require 2 new lug tap terminals on the load side K4977-EXT or approved equal.
 - c. Other manufacturer meter sockets shall be modified with 2 new lug tap terminals on load side if possible with Delmarva Power approved lug taps, or shall be replaced if modification is not possible with Delmarva Power approved meter sockets as indicated in section 2.03.C of this specification.
 4. For existing 100A meter sockets:
 - a. Siemens/Landis and Gyr meter sockets rated for 100 amps shall require 2 new lug tap terminals on the load side #14-1/0 CU7AL or approved equal.
 - b. Milbank meter sockets rated for 100 amps shall require 2 new lug tap terminals on the load side K4977-EXT or approved equal.
 - c. Other manufacturer meter sockets shall be modified with 2 new lug tap terminals on load side if possible with Delmarva Power approved lug taps, or shall be replaced if modification is not possible with Delmarva Power approved meter sockets as indicated in section 2.03.C of this specification.
 5. Existing 60 amp meters and meter sockets shall be replaced with a new meter sockets rated for 600 volts, 200 amps, and single phase 3 wire with 2 lug tap terminals on the load side. The meter socket shall be as indicated in section 2.03.C of this specification.

2.04 S.T.E.P. DISCONNECT SWITCHES

- A. Switches for use on circuits 120 volts and below shall be NEMA general duty Type LD and be housed in NEMA 3R enclosures with external operating mechanisms. Operating mechanisms shall be suitable for being locked in the off position. Provide Eaton, Square D, or approved equal disconnect switches.

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2.05 S.T.E.P. CONTROL PANEL

- A. Contractor to install S.T.E.P. control, manufactured by Orenco, as indicated on drawings. All mounting hardware shall be as indicated on electrical drawings and must maintain NEMA rating for control panel. All conduit penetration and openings shall be sealed per manufacturer's recommendation.

PART 3 - EXECUTION

3.01 CONDUIT

- A. Install rigid nonmetallic conduit embedded in concrete or 24" or more below grade, rigid galvanized steel conduit in exposed locations and 24" below grade, and liquid-tight flexible conduit to motors and vibrating equipment.
- B. Provide 24-inch-minimum cover for direct burial underground conduit.
- C. Installation of Conduits
 - 1. Install conduit runs following routing on drawing and running in straight lines as far as possible. Where deviation from a straight line becomes necessary, install bends of sufficient radius for proper pulling and installation of cable.
 - 2. Polyethylene warning tape shall be provided for all underground raceways, etc. Tape shall be placed along the raceways entire length and shall be installed 12-in above the raceways on compacted backfill material.
 - 3. Any and all surface restoration is incidental to the cost of the installation. Installation in grass is to be restored with topsoil, seed, and mulch. It is the intent to 'bore' under paved, concrete, or other improved surfaces to limit damage to same. Should boring not be an option, refer to Queen Anne's County Specification 02575 for restoration requirements.
 - 4. Keep conduits clean of concrete, dirt, and other substances during the course of construction.

3.02 INSTALLTION OF WIRES

A. Identification

- 1. Color coding of Power Wire: Provide color coding throughout the entire network of feeders and circuits as follows:

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<u>Phase</u>	<u>240/120 Volts</u>
Phase A	Black
Phase B	Red
Neutral	White
Ground	Green

2. Conductors No. 10 AWG and smaller shall have factory color coding with solid color insulation. Do not use onsite coloring of ends of conductors or apply colored plastic adhesives in lieu of factory color coding.
 3. Conductors No. 8 AWG and larger shall have factory color coding with solid color insulation or shall have black insulation with onsite application of colored plastic adhesives at ends of conductors and at each splice.
 4. Control wires shall be color red with wire tags to differentiate wires. The high level float shall be designated with a yellow wire tag. The pump on & off float shall be designated with a green wire tag. The redundant low level float shall be designated with a white wire tag.
 5. Tagging of Conductors: Tag control wires and instrument cables in panels, pull boxes, wireways, and at each control device with adhesive type of marker: Brady, Thomas and Betts, or approved equal. Tag control wires and instrument cables with same wire numbers as on the shop drawing submittals. Tag power wires in splice boxes and wireways where there is more than one circuit.
- B. Remove debris and moisture from the conduits, boxes, and cabinets prior to cable installation.

3.03 WIRE SPLICES

- A. Stranded Conductors No. 14 to No. 10: Use 3M "Scotchlok," Ideal "Super Nut," Buchanan B-Cap, or approved equal.
- B. Stranded Conductors No. 8 and Larger: Use T & B "Locktite" connectors, Burndy Versitaps and heavy-duty connectors, O.Z. solderless connectors, or approved equal.
- C. Provide weather proof splices in splice box.

3.04 PRE-INSTALLATION

- A. Queen Anne County's electrical permit shall be required for electrical work on this project.
 1. Contractor to provide and pay for permit prior to any electrical work performed for project.

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3.05 PERFORMANCE TESTS

After the electrical installation is complete, test it to demonstrate that the system operates in accordance with the plans and specifications. Tests shall include the following:

- A. Wire: Perform insulation resistance test on each complete circuit prior to energizing. Insulation resistance between conductors and between each conductor and ground shall not be less than 25 megohms.
- B. Disconnect Switches: Operate each switch and verify that the load is turned on and off.
- D. System: Verify operation of the power to the STEP control panel and pumps as required by the manufacturer. Measure Voltage and Current at each panel and splice and compare to system operating parameters. Provide written report of findings for each installation.

3.06 INSPECTION

- A. An inspection is required for each facility receiving electrical work by County approved inspector.
- B. Per Delmarva requirements each meter socket has 15 days to be inspected upon modification/replacement of meter. If a meter socket fails to pass inspection the meter socket will be shut down by Delmarva Power until it passes inspection.
- C. Submit meter certification of inspection to Queen Anne's County by an approved County inspection agency upon completion of meter socket replacement or modification.

END OF SECTION